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# THE EFFECT OF RISK MANAGEMENT ON PENSION SCHEME: THE MEDIATING ROLE OF RETIREMENT LAW AN ANALYSIS STUDY OF NON-PROFIT SECTOR IN ERBIL, KURDISTAN

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***ABSTRACT*:**

In the Kurdistan Region, the majority of the population works in the nonprofit sector, working daily to serve our region, and strengthen society, while nonprofit workers do not have access to workplace retirement plans. The fastest-growing segments of the nonprofit workforce, part-time and contract workers are particularly likely to lack coverage. So, addressing risks within defined contribution pension systems is essential for strengthening economic security and ensuring sustainable retirement outcomes, particularly in the nonprofit sector of the Kurdistan Region. This study examines the impact of government efforts to enhance risk management practices, improve financial and strategic risk, and mitigate security risk within pension system. It further analyzes the mediating role of retirement law in shaping pension scheme outcomes, including flexible contribution mechanisms, the provision of robust health coverage, and long-term financial security. A structured questionnaire was distributed to 400 respondents of non-profit sector organization in Erbil, with 371 valid forms retained for analysis. Data were analyzed using SPSS through descriptive statistics, validity and reliability testing, correlation analysis, regression modeling, to examine hypotheses and assess mediation effects. Results demonstrated high internal consistency, strong construct validity, and statistically significant relationships among all variables, findings confirmed that retirement law fully mediates the relationship between risk management and pension scheme outcomes, indicating that legislative frameworks are critical for enhancing system performance. Among risk dimensions, security risk exerted the strongest influence, followed by strategic and financial risks. The study concludes that effective risk management, supported by transparent and well-structured retirement legislation, plays a decisive role in strengthening pension scheme resilience and improving retirement outcomes for nonprofit employees. Key recommendations include expanding access to collective pension plans, diversifying investment portfolios, reinforcing regulatory oversight, enhancing auditing mechanisms, and designing inclusive pension policies targeting under-served groups.

***Keywords**: Risk Management, Retirement Law Non-profit sector, Pension Scheme.*

## INTRODUCTION

The belief that defined contribution transfers investment and longevity risk management, financial Risk, Strategies Risk, and retirement law, to employees is the driving force for the fall in defined benefit plans. The plan allows participants to receive a portion of investment earnings and provides a Pension Scheme, flexible contribution, robust health, financial security. Because it is essential to the existence and functioning of a defined contribution plan given the possibility of unprecedented events, the concept of risk management and the development of dynamic investment strategies in the pension industry are universal (Zighan, 2023).

Retirement is the age at which a person legally stops or withdraws from employment on a permanent basis. In Kurdistan – Iraq, the retirement is regulated by the Law No. 9 of 2014 on Unified Retirement Law which specifies the rights and duties of the Iraq citizens regarding the retirement. The identification and assessment of current and potential risk areas as they relate to pension administration, are the basis for the determination of termination,


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transfer, acceptance or mitigation of each risk (Yohane et al., 2022). The study also looks at and assesses if the relative success of the various investment techniques used in the pension plan is a magic bullet for keeping it going in non-profit sector. Due to seniors' skepticism over the implementation of the new Contributory Pension Scheme in non-profit sector, as a means of addressing pension management issues, the methodology used here is exploratory in nature.

## RESEARCH PROBLEM

The Research Problem is about thousands of employees in the nonprofit sector in the Kurdistan Region who contribute significantly to public services, yet most lack access to secure pension systems. People who don't have a pension at work are in danger of becoming poor when they retire. Families without pensions in the Kurdistan Regional Government have retirement savings of just nothing (zero). Besides the non-availability of capital for living creates family problems, disintegration of the order of a healthy society, the birth of social problems and feeble economic conditions. On the other hand, low income leads to lack of access to basic needs, especially good health, prevention and treatment, in this case increases the mortality rate, reduces the labor force, affects economic development. With the shift toward defined contribution schemes, financial and longevity risks are transferred to employees, making risk management and retirement law critically important. So, this study addresses an urgent social and policy gap.

## RESEARCH QUESTIONS

1- Does Risk Management, such as (financial Risk, Strategies Risk and Security Risk), improve Pension Scheme such as (flexible contribution, robust health, financial security)? 2- Is there an impact of the pension scheme such as (flexible contribution, robust health, financial security), on risk management such as (financial Risk, Strategies Risk and Security Risk)? 3- Is there a positive correlation between Pension Scheme such as (flexible contribution, robust health, financial security), and risk management, such as (financial Risk, Strategies Risk and security risks)? 4- Does the Retirement Law in an apply network, Pension Scheme such as (flexible contribution, robust health, financial security), and the extent of use in non-profit sector Organizations?

## RESEARCH OBJECTIVES

- To express power in building a relationship between Risk Management, such as (financial Risk, Strategies Risk, and Security Risk), to improve Pension Scheme such as (flexible contribution, robust health, financial security).
- To clarify the impact of risk management, such as (financial Risk, Strategies Risk, and security risk), to improve Retirement Law.
- To determine the correlation between Pension Scheme such as (flexible contribution, robust health, financial security), and risk management, such as (financial Risk, Strategies Risk, and security risk).
- To identify the interest of the Retirement Law in an apply network, Pension Scheme such as (flexible contribution, robust health, financial security), and the extent of use in non-profit sector Organizations.

**Research Importance** The importance of this research is on Risk Management, financial Risk, Strategies Risk, and Security Risk. The Retirement Initiative is a project to develop a national, portable, collective retirement plan to address the shortage of adequate savings for workers in Kurdistan Regional Government, (KRG), and non-profit sector. It offers a new model to provide Pension Scheme, flexible contribution, strong health, financial security and workplace Retirement Law to employees in the non-profit sector. It combines the principles of the world's best Retirement Law with a more Pension Scheme, flexible contribution, robust health, financial security to meet the needs of today's workforce. The first ever in the Kurdistan Regional Government (KRG), and a genuinely portable national sector-wide plan designed for the needs of lower- and moderate-income workers and open to "non-standard" workers as well as employees.


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## RESEARCH MODEL

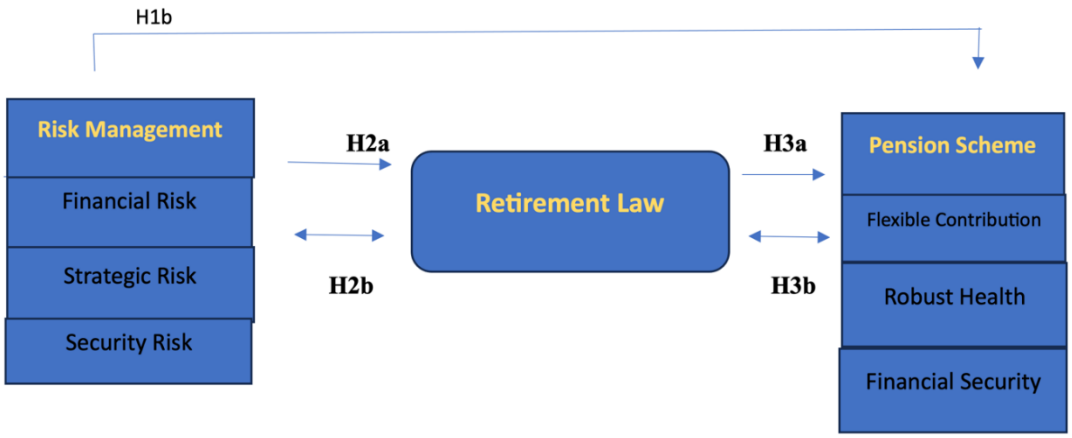


**Figure 1.1: Research Model**

A study might use hypotheses to help create assumptions about their study before moving on with the design phase. The thesis hypothesis provides the foundation upon which to build the study. The hypothesis of this work is stated therein. The study may evaluate the hypotheses to continue along the path of the research and reach the goals of the study.

## RESEARCH HYPOTHESIS

**Hypothesis 1:** The independent Risk management such as (financial Risk, Strategies Risk, and Security Risk), is positive correlation between dependent variable represented by the Pension Scheme such as (flexible contribution, robust health, and financial security). (H1a).
There is an impact of Risk management such as (financial risk, Strategies risk, and Security Risk), and it is possible to predict the Pension Scheme such as (flexible contribution, robust health, and financial security). (H1b).

**Hypothesis 2:** The independent variable positive correlation between represented by Risk management such as (financial risk, Strategies risk, and Security Risks), contributes to predicting the increase in the levels of the mediating variable represented by the Retirement Law (H2a).
In other words, there is an impact of Risk management such as (financial risk, Strategies risk, and Security Risks), and it is possible to predict the increase in the levels of the Retirement Law. (H2b).

**Hypothesis 3:** The mediating variable relationship of the Retirement Law is predicting the increase of the outcome's variable Pension Scheme levels like (flexible contribution, robust health, and financial security). (H3a).
In other words, there is an impact of Retirement Law and the increase of the outcomes in the levels of the Pension Scheme such as (flexible contribution, robust health and financial security). (H3b).

## LITERATURE REVIEW

### Risk Management in Pension Systems

Marcucci et al. (2022), risk management is a critical component in ensuring the sustainability and effectiveness of pension systems. Particularly in the nonprofit sector, where financial constraints and external dependencies are common, managing risk becomes essential for protecting the long-term interests of beneficiaries (Sancak, 2023). Weigel et al. (2023), pension schemes must contend with a variety of uncertainties, including market volatility, inflation, fraud, cybersecurity threats, and poor investment choices. These challenges can severely affect fund solvency and undermine the retirement security of employees. Solana-González et al. (2021), Nonprofit organizations, due to their unique financial structure and mission-driven focus, often face elevated risk exposure without the buffers or technical capacities typical in the private sector. This necessitates a more robust approach


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to risk identification, assessment, and mitigation (Huy et al., 2021). An effective risk management strategy in this context involves a combination of prudent financial planning, diversification of investment portfolios, strong internal controls, and regulatory compliance. Moreover, embedding risk-conscious thinking into the governance structure of pension funds can enhance transparency and build stakeholder trust (Mata et al., 2023).

Bencsik et al. (2022), the evolving complexity of global financial systems and the increasing reliance on digital tools further amplify risk exposure in nonprofit pension management. In an interconnected world, market shocks can quickly reverberate across regions and asset classes, impacting even well-diversified portfolios. Benami et al. (2021), Nonprofit pensions, often lacking sophisticated hedging strategies, remain particularly vulnerable. Similarly, the rise of cybercrime has added a new layer of threat to pension systems, where digital records and online fund management systems can be targeted by malicious actors. Yazdani et al. (2021), breaches not only result in financial losses but also erode trust and lead to legal and reputational repercussions. To respond effectively, nonprofit organizations must adopt a proactive, dynamic, and multi-layered risk management approach (Zámborský et al., 2022). This includes regular stress testing of pension funds, scenario modeling, and incorporation of ESG (Environmental, Social, and Governance) risk indicators. Staff training and awareness are equally important, ensuring that organizational leaders and finance teams understand emerging risks and are equipped to manage them (Pierides et al., 2021).

Zighan (2023), strong governance structures are indispensable in mitigating risk. Nonprofit pension funds should be overseen by boards or committees with fiduciary responsibility, clear reporting lines, and defined accountability measures. Independent audits and compliance reviews further strengthen risk controls. Al Balushi (2021), transparency is key not only in internal processes but also in communications with employees and stakeholders. Regular updates on fund performance, risk exposure, and corrective measures build confidence and encourage a culture of shared responsibility. Patience et al. (2022), public-private partnerships can also play a role. Governments and regulatory bodies can provide frameworks and incentives that help nonprofits enhance their risk management capabilities. For instance, shared risk pools, technical assistance, and matching contribution programs can buffer small organizations against systemic shocks (Kandasamy et al., 2022). This section explores three key categories of risk in nonprofit pension systems: financial risks, investment strategy risks, and security risks. Each of these domains presents distinct threats and requires tailored responses to mitigate negative impacts and ensure the longevity and integrity of pension programs. Together, they form a comprehensive lens through which nonprofit pension systems must be evaluated and strengthened.

## PENSION SCHEMES AND PARTICIPANT WELL-BEING

Ensuring the well-being of pension participants is central to the design and sustainability of retirement systems, particularly within the nonprofit sector. Employees in nonprofit organizations often face unique challenges such as irregular income, limited access to employer-sponsored benefits, and minimal retirement planning support. Therefore, pension schemes that prioritize flexibility, integrate healthcare, and provide long-term financial security are essential for addressing the diverse needs of this workforce (Marcucci et al., 2022).

Sancak (2023), Effective pension design must balance inclusivity, sustainability, and affordability. This involves tailoring contribution models to accommodate non-traditional work arrangements, embedding health incentives within retirement planning, and establishing mechanisms that ensure income stability in retirement. This section examines three key aspects of pension schemes that enhance participant well-being: flexible contribution models, integration with health systems, and long-term financial security strategies (Weigel et al., 2023). The focus on participant well-being recognizes that financial security in retirement is not merely a matter of accumulated savings, but a holistic outcome influenced by employment stability, healthcare access, and lifestyle support. As such, a modern pension scheme should be more than a savings account, it should be an integrated support system that evolves with the participant throughout their career lifecycle (Solana-González et al., 2021). This is particularly important in nonprofit environments where workforce diversity is pronounced, including part-time workers, freelancers, volunteers transitioning to paid roles, and individuals working across multiple projects or organizations. For these groups, conventional pension models often fall short. Flexible and inclusive pension solutions not only promote equity but also contribute to greater employee engagement, retention, and organizational loyalty (Huy et al., 2021).

Mata et al. (2023), Health integration within pension planning is another growing priority. Numerous studies have shown a strong correlation between physical and financial wellness. Employees with access to healthcare and


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preventive wellness services tend to have better work performance, fewer financial stressors, and a smoother transition into retirement. By embedding health-related incentives into pension schemes, such as premium subsidies for wellness program participation or linking retirement benefits with health insurance eligibility, nonprofits can better prepare employees for healthy, secure retirements. Lastly, ensuring financial security in retirement is not just about the size of the pension pot, but also about its predictability, adaptability to inflation, and efficient disbursement. Nonprofits must consider how to protect retirees from longevity risk (outliving their savings), market volatility, and changes in cost of living (Bencsik et al., 2022). This requires robust fund management, regular actuarial reviews, and communication strategies that help participants understand and plan for their financial futures. In summary, pension schemes in the nonprofit sector must be intentionally designed to promote participant well-being. Flexibility, health integration, and financial security are not optional features they are essential pillars that uphold the mission of social responsibility and workforce empowerment. By investing in comprehensive pension solutions, nonprofits reinforce their commitment to their most valuable asset: their people. Flexible contribution models are increasingly recognized as essential features in modern pension systems, particularly within nonprofit sectors where workforce diversity and financial variability are prominent. Unlike traditional, fixed-contribution models that require uniform monthly payments, flexible systems allow participants to adjust their contributions based on income levels, employment status, and financial capacity (Benami et al., 2021). This adaptability is especially valuable for nonprofit employees, many of whom work part-time, seasonally, or on project-based contracts.

Yazdani et al. (2021), Fixed-contribution plans can unintentionally exclude those with intermittent income by imposing rigid payment schedules that do not reflect the financial realities of diverse employment arrangements. For nonprofit workers, this often results in inconsistent participation or total exclusion from pension benefits. By contrast, flexible contribution models enable employees to remain within the pension system, even if their contributions vary in amount or frequency. This approach supports continuous retirement savings and helps reduce long-term income insecurity (Zámborský et al., 2022). One of the primary advantages of flexible models is their inclusivity. They make it possible for underrepresented groups; including women, youth, freelancers, and older adults returning to work to participate in retirement savings schemes. Women, for example, often take career breaks for caregiving responsibilities and benefit from plans that accommodate re-entry and fluctuating contributions without penalty.

## RETIREMENT LAW

A robust legal and regulatory framework is essential for the proper functioning and sustainability of pension systems, particularly within the nonprofit sector where compliance and enforcement mechanisms often lag behind formal employment sectors. In the Kurdistan Region of Iraq, Law No. 9 of 2014 serves as the cornerstone of the public and nonprofit sector retirement system. While the law provides a structural foundation for retirement planning, several gaps in implementation, enforcement, and inclusivity reduce its effectiveness, especially for nonprofit employees whose employment patterns and compensation structures differ from the public sector norm (Nobanee et al., 2021).

Law No. 9 of 2014 outlines key responsibilities for employers and entitlements for employees, including mandatory contributions, retirement age thresholds, and pension calculation formulas. However, the application of these regulations to nonprofit organizations remains inconsistent. Unlike public institutions, many nonprofits lack the institutional capacity to manage pension compliance, and in some cases, operate informally or with insufficient awareness of the legal requirements. In practice, many nonprofit employers do not register eligible workers with the pension authority or fail to make regular contributions due to unstable funding sources. This creates long-term vulnerabilities for employees who may retire without access to benefits despite years of service. The absence of enforcement mechanisms and routine audits exacerbates this problem, allowing noncompliant organizations to operate with minimal repercussions (Secundo et al., 2024).

Moreover, the current retirement law does not adequately address the realities of part-time, contract, or temporary employment common in the nonprofit sector. Contribution rules and benefit calculations often assume continuous, full-time employment, excluding a significant portion of the nonprofit workforce from meaningful pension participation. This creates disparities in retirement readiness and financial security (VanBuren et al., 2022). This section explores the regulatory framework guiding pension systems in Kurdistan, focusing on the specific mandates and limitations of Law No. 9 of 2014, the enforcement challenges facing nonprofit organizations, and broader government-led policy initiatives that aim to enhance transparency, inclusivity, and compliance.


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Addressing these issues requires legal reforms that expand coverage, simplify contribution procedures, and introduce tiered benefit structures that account for diverse employment types. It also calls for stronger institutional oversight, including capacity building within regulatory agencies and collaboration with nonprofit umbrella organizations to raise awareness and promote compliance (Lee, 2021).

Government initiatives, such as the formation of national pension reform task forces or the digitization of contribution tracking systems, offer promising avenues for improving governance. Public education campaigns and stakeholder consultations can further ensure that reforms are inclusive and tailored to the sector's unique needs (Eichholz et al., 2024). Ultimately, a well-regulated pension system not only protects employees but also enhances the credibility and operational integrity of nonprofit organizations. By aligning the retirement law with the sector's practical realities, Kurdistan can build a more resilient and equitable social protection system.

## RESEARCH DESIGN

This section discusses the conceptualization and operationalization of the questionnaire. The role of the questionnaire in producing valid, reliable and analyzable data for subsequent statistical analysis is emphasized. The questionnaire was carefully developed based on a five-point Likert scale, a commonly used psychometric scale in social science research, to accurately measure respondents' perceptions and attitudes. Participants were asked to rate their agreement with the statements using the following response categories: 5 = Strongly Agree, 4 = Agree, 3 = Uncertain, 2 = Disagree, and 1 = Strongly Disagree. This scaling strategy allowed for the systematic quantification of subjective judgments and supported meaningful comparative and inferential analyses.

## SAMPLE SIZE AND RESEARCH POPULATION

In this study, a total of 400 printed questionnaires were distributed manually to all members of the research sample. The researcher successfully retrieved 385 questionnaires, representing a response rate of 96% of the distributed instruments. Upon careful screening, 14 questionnaires were found to be incomplete or invalid for statistical analysis and were therefore excluded. Consequently, 371 questionnaires were deemed valid and retained for analysis, accounting for 96% of the retrieved questionnaires and 93% of the total distributed questionnaires. This high response and validity rate indicates strong participant engagement and provides a robust dataset for subsequent analysis.

## RESULTS

### Age Distribution of Respondents

The distribution of the study sample according to the variable of the age of the responder is shown in Table

**Table: Distribution of Study Sample by Age**

| Age | Frequency | Percent |
|---|---|---|
| Under 25 | 68 | 18.3 |
| 25-34 | 60 | 16.2 |
| 35-44 | 121 | 32.6 |
| 45-54 | 109 | 29.4 |
| 55-64 | 13 | 3.5 |
| Total | 371 | 100.0 |
| Source: Table created by the author using primary data analyzed with SPSS. | | |

### Gender Distribution of Respondents

The distribution of the study sample by the gender of the responder variable is given in Table as follows:

**Table: Gender Distribution of Study Sample**

| Gender | Frequency | Percent |
|---|---|---|
| Female | 108 | 29.1 |
| Male | 263 | 70.9 |
| Total | 371 | 100.0 |


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Source: Table created by the author using primary data analyzed with SPSS.

**Educational Level of Respondents**
The table shows the distribution of study sample according to the variable of Education Level of the responder as follows:

**Table: Distribution of Study Sample by Education Level**

| Education Level | Frequency | Percent |
|---|---|---|
| Bachelor's degree | 194 | 52.3 |
| Diploma | 31 | 8.4 |
| Doctorate | 32 | 8.6 |
| High school or equivalent | 6 | 1.6 |
| master's degree | 108 | 29.1 |
| **Total** | **371** | **100.0** |
| Source: Table created by the author using primary data analyzed with SPSS. | | |

**Occupational Status of Respondents**
The table shows the distribution of the study sample according to the Occupation variable of the responder, as follows:

**Table: Distribution of Study Sample by Occupation**

| Occupation | Frequency | Percent |
|---|---|---|
| Non-profit organization | 222 | 59.8 |
| Other | 28 | 7.5 |
| Public Sector Employee | 51 | 13.7 |
| Retired | 64 | 17.3 |
| Self-employed | 6 | 1.6 |
| Total | 371 | 100.0 |
| Source: Table created by the author using primary data analyzed with SPSS. | | |

**Years of Work Experience of Respondents**
Table presents the distribution of the study sample by Years of Work of the responder Experience variable:

**Table: Distribution of Study Sample by Work Experience**

| Years of Work Experience | Frequency | Percent |
|---|---|---|
| 1-5 years | 56 | 15.1 |
| 11-20 years | 119 | 32.1 |
| 6-10 years | 99 | 26.7 |
| More than 20 years | 97 | 26.1 |
| Total | 371 | 100.0 |
| Source: Table created by the author using primary data analyzed with SPSS. | | |

## HYPOTHESIS FORMULATION AND TESTING

**Testing the First Hypothesis of Research**
**Pearson Correlation Analysis**
Pearson correlation analysis was conducted to determine the strength and direction of the relationships between the main study variables. This analysis provides first evidence of association between different dimensions of risk


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management and outcomes related to retirement law and pension scheme performance before performing multivariate analyses.

**Table: Pearson Correlation Matrix**

| Variables | FRM | SRM | SERM | RL | PS |
|---|---|---|---|---|---|
| **Financial Risk** | 1 | | | | |
| **Strategic Risk** | 0.42** | 1 | | | |
| **Security Risk** | 0.39** | 0.45** | 1 | | |
| **Retirement Law** | 0.58** | 0.53** | 0.56** | 1 | |
| **Pension Scheme** | 0.49** | 0.46** | 0.51** | 0.62** | 1 |
| Note: $p < 0.01$ (two-tailed) | | | | | |
| Source: Table created by the author using primary data analyzed with SPSS. | | | | | |

The correlation matrix shows that all relationships among the variables are positive and statistically significant at the 0.01 level, indicating meaningful associations. Financial Risk Management is moderately correlated with Strategic Risk Management (r = 0.42) and Security Risk Management (r = 0.39), suggesting that organizations adopting strong financial risk controls tend to also emphasize strategic and security-related risk practices. The correlations between risk management dimensions and Retirement Law are notably stronger, ranging from 0.53 to 0.58, implying that effective risk management is closely associated with stronger or more effective retirement law frameworks.

Similarly, Pension Scheme shows moderate to strong correlations with all risk management dimensions (r = 0.46–0.51) and the strongest relationship with Retirement Law (r = 0.62). This indicates that well-defined and enforced retirement laws are strongly linked to improved pension scheme outcomes. These findings are important because they provide empirical support for the theoretical assumption that robust risk management practices are integral to effective pension governance. The statistically significant correlations suggest that improvements in financial, strategic, and security risk management are associated with stronger legal frameworks and better-performing pension schemes. This reinforces the relevance of integrated risk management as a policy and managerial tool for enhancing pension system sustainability and employee financial security. From a methodological standpoint, the correlation coefficients remain below the commonly cited threshold of 0.80, indicating that multicollinearity is unlikely to be a serious concern in subsequent regression or mediation analyses. This justifies the inclusion of all variables in multivariate models. Importantly, the correlations are significant but not causal. The relationships we observe may be influenced by contextual or institutional factors not accounted for in the analysis. In addition, the stronger association of Retirement Law and Pension Scheme suggests a possible mediating role of legal frameworks, which is worth further exploration by mediation analysis.

**Testing the Second Research Hypothesis**

This hypothesis was rigorously tested using a two-stage analytical approach. Initially, Pearson correlation analysis was conducted to understand the strength and direction of the associations between retirement law and pension scheme outcomes, which offered preliminary evidence of their interrelationships. Second, the predictive power of retirement law was tested by using a multiple regression analysis to determine the size and statistical significance of its effects on pension scheme outcomes and their individual dimensions. This combined analytical strategy enables a comprehensive assessment of whether retirement law serves as a significant institutional determinant of pension scheme performance and provides a robust empirical foundation for evaluating the second research hypothesis and its sub-hypotheses.

**Correlation Analysis between Retirement Law and Pension Scheme Outcomes**

Pearson's correlation analysis was performed to examine the relationships between retirement law and pension scheme outcomes. This analysis investigates the magnitude and nature of links between retirement law and key aspects of pension scheme results, such as flexible contribution arrangements, health-related benefits, and employees' financial security in retirement.

**Table: Correlation Analysis between Retirement Law and Pension Scheme Outcomes**

| Variables | Retirement Law |
|---|---|
| Flexible Contribution Arrangements | 0.61** |
| Health-Related Benefits | 0.58** |


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| | |
|---|---|
| Employees' Financial Security After Retirement | 0.66** |
| Overall Pension Scheme Outcomes | 0.64** |
| Note: $p < 0.01$ (2-tailed) | |
| Source: Table created by the author using primary data analyzed with SPSS. | |

The results indicate that retirement law is positively and significantly correlated with overall pension scheme outcomes ($r = 0.64$, $p < 0.01$), providing strong support for H2. This suggests that stronger and more effectively implemented retirement laws are associated with improved pension scheme performance. At the dimensional level, retirement law demonstrates a moderately strong positive correlation with flexible contribution arrangements ($r = 0.61$, $p < 0.01$), supporting H2a. This implies that well-defined retirement laws facilitate adaptable contribution structures that accommodate employees' varying financial capacities. Additionally, a significant positive relationship is observed between retirement law and the robustness of health-related benefits within pension schemes ($r = 0.58$, $p < 0.01$), confirming H2b. This indicates that clear legal frameworks enhance the inclusion and protection of healthcare-related benefits for retirees.

**Third Research Hypothesis**

A Pearson correlation analysis was performed to preliminarily examine the mediating role of Retirement Law in the relationship between risk management practices and pension scheme outcomes. The correlation analysis is a necessary prerequisite for the test of mediation, as it seeks to determine the existence of statistically significant relationships between the independent variables (risk management practices), the proposed mediator (Retirement Law) and the dependent variable (pension scheme outcomes). Under the mediation assumptions, the independent variables should be significantly related to the mediator and the dependent variable, and the mediator should be significantly related to the dependent variable. These conditions are met and provide empirical support for the use of regression-based mediation analysis to test Hypotheses H3–H3c.

**Correlation Analysis (H3)**

To support the mediating effect hypotheses, a Pearson correlation analysis was conducted to examine the relationships among risk management practices, retirement law (mediator), and pension scheme outcomes (dependent variable). For mediation to be plausible, the independent variables should show significant correlations with both the mediator and the dependent variable, and the mediator should also correlate significantly with the dependent variable.

**Table: Correlation Matrix (H3)**

| Variables | (1) RM Overall | (2) FRM | (3) SRM | (4) SeRM | (5) Retirement Law | (6) Pension Scheme Outcomes |
|---|---|---|---|---|---|---|
| (1) Risk Management (Overall) | 1.00 | | | | | |
| (2) Financial Risk (FRM) | 0.81** | 1.00 | | | | |
| (3) Strategic Risk (SRM) | 0.78** | 0.69** | 1.00 | | | |
| (4) Security Risk (SeRM) | 0.80** | 0.71** | 0.73** | 1.00 | | |
| (5) Retirement Law (Mediator) | 0.67** | 0.59** | 0.55** | 0.61** | 1.00 | |
| (6) Pension Scheme Outcomes (DV) | 0.72** | 0.62** | 0.58** | 0.66** | 0.64** | 1.00 |
| Note: ** Correlation; is significant at the (0.05), level (2-tailed) | | | | | | |
| Table: compiled by the author from primary data analyzed using SPSS. | | | | | | |

Table presents the Pearson correlation coefficients between risk management practices, and outcomes of retirement law and pension scheme. Results show that all key variables are strongly positively and significantly related to each other, showing a consistent and theoretically coherent pattern. Risk management as a whole is very strongly correlated with its sub-dimensions (financial $r = 0.81$, $p < 0.01$; strategic $r = 0.78$, $p < 0.01$ and security risk management $r = 0.80$, $p < 0.01$. High correlation coefficients confirm that the three dimensions form a coherent risk management construct, while still maintaining their conceptual distinctness.


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Overall, risk management has a significant positive relationship with retirement law ($r = 0.67$, $p < 0.01$) suggesting that the stronger the risk management practices, the clearer, more effective and better enforced are the retirement law frameworks. Similarly, all the risk management dimensions are significantly related to retirement law with coefficients ranging from $r = 0.55$ to $r = 0.61$. Additionally, risk management is positively and significantly correlated with the performance of the pension scheme ($r = 0.72$, $p < 0.01$), indicating that the better the governance of risk, the more effective and reliable the pension scheme. At the dimensional level, financial, strategic and security risk management are all significantly positively related to pension scheme outcomes ($r = 0.58$-$0.66$, $p < 0.01$).

## CONCLUSION

This study examined the relationship between risk management, retirement law and pension scheme performance with special reference to the mediating role of retirement law. Using a robust empirical approach based on factor analysis, reliability testing, correlation analysis, multiple regression, and bootstrapped mediation analysis, the present study provides strong evidence for the influence of the interplay between organizational risk governance and institutional legal frameworks on the effectiveness of pension systems. The findings validate the fact that the practices of risk management namely financial risk management, strategic risk management and security risk management have significant effects on retirement law. Retirement law has a strong positive effect on pension scheme outcomes. The mediation analysis also shows that retirement law partially mediates the relationship between risk management and pension performance. This suggests that while legal frameworks play an important institutional role, risk management practices also directly influence outcomes through governance quality and operational effectiveness. Importantly, these results highlight the dynamic and reciprocal nature of pension governance, where laws both shape and are shaped by managerial practices. This reinforces the argument that pension reforms should not be viewed as one-off legislative interventions but as continuous governance processes requiring institutional learning, coordination, and adaptation. By revealing how risk management and legal structures jointly determine pension outcomes, the study underscores the necessity of integrated reform strategies that align policy design with organizational capabilities. Consequently, the findings offer a more realistic and actionable understanding of pension system sustainability in complex institutional environments. Overall, the results support the view that pension sustainability cannot be achieved through regulatory reform alone, nor through managerial practices in isolation. Instead, effective pension systems emerge from the alignment of robust risk management practices with coherent and enforceable retirement laws. By empirically validating this integrated governance model, this study contributes meaningful insights to pension governance scholarship and offers a solid foundation for evidence-based policy reform.

## RECOMMENDATIONS

1. The empirical findings provide several policy and managerial recommendations:
2. Strengthen the link between risk management and pension law.
3. Policymakers should ensure that retirement laws are explicitly informed by financial, strategic, and security risk assessments, rather than being developed as static legal instruments.
4. Promote coordinated governance structures: pension authorities, regulators, and organizational managers should adopt collaborative governance models to align operational risk practices with legal compliance and policy objectives.
5. Address gaps in health and life affordability outcomes: since these outcomes are less strongly explained by pension law alone, policymakers should integrate pension reforms with broader healthcare and social protection strategies.

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