RISK MANAGEMENT PRACTICE AND FINANCIAL SUSTAINABILITY OF PENSION FUND ADMINISTRATORS IN NIGERIA

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Abstract
Purpose: This study examined the relationship between risk management practices and the financial sustainability of Pension Fund Administrators (PFAs) in Nigeria. The study was motivated by the need to understand how risk management practices relate to the financial sustainability of pension administration within an environment characterised by investment uncertainty, operational risks and regulatory requirements. The study adopted quantitative cross-sectional survey design. Data were collected through a structured questionnaire administered to 200 management and senior staff selected from 18 licensed PFAs in Nigeria using a systematic sampling technique. The data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The measurement model was assessed using Cronbach's alpha, composite reliability and average variance extracted (AVE), while the structural model was evaluated using the path coefficient, t-statistic and p-value. The results revealed a positive and statistically significant relationship between risk management practices and financial sustainability ($\beta = 0.092$, $t = 3.09$, $p = 0.002$). The findings suggest that stronger risk management practices are associated with higher financial sustainability among the sampled PFAs. The measurement model results also indicated acceptable internal consistency and convergent validity for the constructs, based on the reported reliability coefficients and AVE values. The findings highlight the importance of strengthening risk identification, assessment, monitoring, internal controls, regulatory compliance and business continuity arrangements within PFAs. These practices may support financial sustainability by helping pension administrators manage financial and operational uncertainties. However, the cross-sectional design limits causal interpretation, and the study does not establish the independent contribution of individual risk management dimensions. The study contributes context-specific empirical evidence on the relationship between risk management practices and financial sustainability in Nigeria's pension industry. By examining risk management practices as an overall construct, it extends the discussion of PFA sustainability beyond the consideration of investment policy and corporate governance alone.

Keywords: Enterprise risk management theory, financial sustainability, Nigeria, pension fund administrators, risk management practices.

1.0 Introduction

The pension industry plays a critical role in promoting retirement security and contributing to economic development through the mobilisation and management of long-term savings. Pension Fund Administrators (PFAs) operate as financial service organisations responsible for administering contributors' Retirement Savings Accounts (RSAs) and managing pension assets in accordance with applicable regulatory requirements. Globally, these organisations operate in increasingly complex financial environments characterised by market volatility, demographic changes, regulatory reforms, and technological advancements. These challenges have heightened the importance of effective risk management practices in safeguarding organisational resources, minimising operational losses, and ensuring the long-term financial sustainability of PFA companies. In this study, financial sustainability refers to the ability of PFAs, as business organisations, to generate adequate revenue, control operating costs, maintain profitability, meet corporate financial obligations, and sustain operations over time. This concept is distinct from pension-scheme sustainability and the adequacy of contributors' retirement savings, which concern the preservation and growth of pension assets and the capacity to meet retirement benefit obligations. Consequently, robust risk management frameworks encompassing investment-related

risks, operational risks, liquidity risks, compliance risks, and strategic risks are essential for supporting the financial viability of pension administration companies (Martinez, 2023).

In developed economies, pension administration organisations operate within relatively established regulatory frameworks supported by formal governance structures, advanced technological infrastructure, and sophisticated risk management systems. These arrangements facilitate the identification, assessment, monitoring, and mitigation of risks associated with financial transactions, information systems, regulatory compliance, and operational activities. Effective risk management practices can enhance the financial sustainability of PFA companies by reducing avoidable losses, improving operational efficiency, controlling compliance-related expenditure, and strengthening revenue stability. Studies indicate that effective risk management contributes to improved financial performance, asset preservation, liquidity management, and the long-term sustainability of pension institutions in countries such as the United States, Canada, and the United Kingdom (Fazl, 2024). However, the financial sustainability of a PFA company should be assessed using indicators of its own financial position and operating performance rather than inferred solely from the value or investment performance of pension assets under its administration. Although effective administration supports the protection of contributors' retirement savings, the financial viability of the administering company remains a distinct organisational concern.

Conversely, pension administration companies in many developing countries face significant challenges in implementing effective risk management practices because of institutional weaknesses, limited technical expertise, inadequate regulatory enforcement, and unstable macroeconomic conditions. These challenges can expose PFA companies to operational disruptions, financial losses, fraud, regulatory sanctions, and liquidity pressures affecting their business operations. Such exposures may increase operating costs, reduce profitability, weaken revenue stability, and constrain the resources required to maintain service delivery. Empirical studies have shown that deficiencies in risk management mechanisms reduce the capacity of pension institutions to withstand economic shocks, maintain profitability, and fulfil their long-term obligations to stakeholders (Effiong & Ejabu, 2020). These concerns are particularly relevant to the financial obligations and operational continuity of PFA companies. Nevertheless, the financial sustainability of the administering organisation must be distinguished from the capacity of pension schemes to preserve contributors' assets and meet retirement benefit commitments, since the two outcomes have different measurement requirements and organisational implications.

Across Africa, the financial sustainability of pension administration companies is influenced by economic uncertainties, underdeveloped capital markets, governance challenges, and evolving regulatory requirements. These conditions can increase the complexity and cost of pension administration while exposing organisations to financial, operational, and compliance-related risks. Effective risk management practices are therefore important for enabling PFAs to protect organisational resources, manage expenditure, maintain operational efficiency, and achieve sustainable financial performance. Research suggests that pension institutions with strong risk management frameworks are better positioned to achieve stable investment returns, maintain adequate liquidity, and enhance organisational performance despite prevailing economic challenges (Akwimbi, 2022). However, stable investment returns and the preservation of pension assets do not necessarily establish the financial sustainability of the PFA companies administering those assets. Their organisational viability also depends on operating revenue, expenditure control, profitability, governance arrangements, and the ability to meet corporate financial obligations.

Consequently, weaknesses in risk governance, technological integration, and internal control mechanisms are important considerations when examining the financial sustainability of pension administration companies across the continent.

In Nigeria, the pension industry has undergone significant transformation following the enactment of the Pension Reform Act and the introduction of the Contributory Pension Scheme (CPS). These reforms were designed to strengthen pension administration, enhance transparency, and improve retirement income security. Despite the growth in pension assets and membership, Nigerian PFAs continue to face risks arising from economic instability, inflationary pressures, fluctuating interest rates, market uncertainties, cybersecurity threats, and evolving regulatory requirements. The scale of the industry underscores the importance of effective risk management. The Central Bank of Nigeria (CBN, 2023) reported that net pension assets under management increased to ₦16.76 trillion in June 2023, while pension-scheme membership reached approximately 10.01 million. This indicates the positive development towards financial sustainability of individual PFA companies. The development also shows the growth in companies' own revenue, profit, or shareholders' funds. Accordingly, for instance, UBA Pensions' 2024 annual report disclosed a profit after tax of ₦5.69 billion and an increase in its cost-to-income ratio from 19% in 2023 to 22% in 2024 (UBA Pensions, 2025). These figures illustrate the relevance of profitability and cost efficiency in evaluating the financial sustainability of pension administration companies. However, the growth of individual PFA establish the financial condition of the entire industry, which highlight the need for systematic empirical investigation into whether and to what extent risk management practices contribute to the financial outcomes of Nigerian PFAs. More broadly, reports and empirical studies have raised concerns regarding risk management deficiencies, investment-related losses, operational weaknesses, and stakeholder confidence within the Nigerian pension sector (Temile et al., 2019). The challenge for the present study is therefore to determine whether risk management practices support corporate financial sustainability.

Furthermore, the dynamic nature of Nigeria's financial environment requires PFAs to strengthen their risk management capabilities to sustain their business operations while fulfilling their administrative responsibilities to contributors and complying with regulatory requirements. Effective risk management practices, including risk identification, risk assessment, risk monitoring, internal controls, and compliance management, can help PFA companies anticipate potential threats, minimise avoidable losses, improve resource allocation, and maintain operational continuity. These practices may support organisational financial sustainability through improved cost management, revenue stability, profitability, and the capacity to meet corporate financial obligations. Nevertheless, the existence of risk management policies does not necessarily guarantee financial sustainability, as their effectiveness depends on implementation, management commitment, staff competence, technological capacity, and continuous monitoring. It is therefore necessary to establish empirically whether the application of risk management practices produces measurable improvements in the financial sustainability of licensed PFAs in Nigeria.

This study is anchored on Enterprise Risk Management (ERM) Theory, which provides a framework for understanding how organisations identify, assess, respond to, and monitor risks in an integrated manner to support the achievement of organisational objectives. ERM emphasises the coordination of risk management across organisational functions rather than treating individual risks in isolation. Applied to Nigerian PFAs, the theory suggests that systematic risk identification, assessment, monitoring, internal control, and compliance management can help management anticipate threats to revenue generation, profitability, operational efficiency, and business

continuity. By integrating these activities into organisational decision-making, PFAs may be better positioned to reduce unexpected losses, allocate resources efficiently, and preserve their financial capacity to sustain operations. The theory therefore provides a relevant basis for examining the relationship between risk management practices and the financial sustainability of PFA companies, while recognising that the existence of a risk management framework does not automatically guarantee favourable financial outcomes.

Despite regulatory developments and the expansion of Nigeria's pension industry, the relationship between risk management practices and the financial sustainability of individual Pension Fund Administrators (PFAs) remains an important empirical question. Existing studies and industry reports have frequently emphasised pension asset growth, investment returns, contributors' retirement savings and the capacity of pension institutions to support retirement security (National Pension Commission [PenCom], 2025). However, empirical evidence on the financial sustainability of PFAs, particularly concerning the contribution of risk management practices, remains an important area for further investigation (Afolabi et al., 2024; Iro, 2026). Although these issues are important, they do not directly establish whether the companies administering pension assets can maintain adequate revenue, control operating costs, remain profitable, and sustain their business operations. Furthermore, investment volatility, operational weaknesses, and regulatory challenges has demonstrated the extent to which risk management practices influence the financial sustainability of licensed PFAs. Addressing this issue will provide evidence that may assist PFA management, regulators, policymakers, and other stakeholders in strengthening risk governance and promoting the long-term financial viability of pension administration companies in Nigeria.

Against this background, this study investigates the effect of risk management practices on the financial sustainability of Pension Fund Administrators in Nigeria. Specifically, the study examines whether risk management practices contribute to the financial viability of the administering companies, with financial sustainability assessed in terms of relevant corporate financial outcomes rather than the value of contributors' pension assets or the adequacy of retirement benefits. Guided by Enterprise Risk Management Theory, the study seeks to provide empirical evidence on the extent to which systematic risk management supports organisational financial sustainability within the Nigerian pension industry. Accordingly, the null hypothesis that risk management practices have no significant effect on the financial sustainability of licensed Pension Fund Administrators in Nigeria is tested.

2.0 Literature Review

Financial sustainability refers to an organisation's ability to maintain sound financial health over the long term, meet its financial obligations as they fall due, and sustain its operations without compromising future viability. In the context of Pension Fund Administrators (PFAs) in Nigeria, financial sustainability reflects the capacity to generate sufficient income, maintain adequate financial resources, manage operating costs, and remain financially viable while delivering pension administration services. Remer and Kattilakoski (2021) associate financial sustainability with financial self-sufficiency, while Tiwari (2024) highlights its importance for cost efficiency, service delivery, and the long-term integrity of pension systems. For PFAs, financial sustainability therefore extends beyond short-term profitability to encompass the ability to maintain liquidity, withstand financial shocks, meet operational obligations, and sustain business activities over time.

Financial sustainability is influenced by sound corporate governance, prudent financial management, effective internal controls, and appropriate management of assets, liabilities, and

liquidity. Pension-related institutions must balance available financial resources with operational obligations while responding to market fluctuations, regulatory changes, and other emerging risks (IMF, 2025; Liu et al., 2024). In this study, financial sustainability is conceptualised as a formative construct, in which liquidity, cash reserves, net income, cost efficiency, customer growth, and access to capital jointly constitute the overall level of financial sustainability. Each indicator captures a distinct but complementary dimension: liquidity reflects the ability to meet short-term obligations; cash reserves represent the financial buffer available to absorb unexpected shocks; net income captures income-generating capacity; cost efficiency indicates the effective use of resources; customer growth reflects the potential to maintain and expand the customer base; and access to capital represents the availability of additional financial resources when needed. These indicators are not assumed to be interchangeable, because a PFA may perform strongly in one dimension but poorly in another. Rather, their combined contribution provides a broader assessment of financial sustainability. Accordingly, changes in one or more indicators can alter the overall level of sustainability, making the formative specification appropriate for examining the financial sustainability of PFAs in Nigeria.

Risk Management (Internal and External)

Risk management is the systematic and continuous process of identifying, assessing, prioritising, treating, and monitoring risks that may affect an organisation's objectives, operational efficiency, and long-term financial sustainability (Mızrak, 2023). In this study, risk management practice is conceptualised as a formative construct jointly determined by eight indicators: identification of internal risks, identification of external risks, risk assessment and prioritisation, regulatory compliance risk control, investment risk management, crisis response readiness, internal control systems, and business continuity planning. These indicators represent complementary aspects of risk management practice that collectively capture an organisation's capacity to anticipate, evaluate, control, and respond to potential threats. They are not treated as separate independent variables or assumed to be interchangeable; rather, each contributes a distinct element to the overall effectiveness of risk management. Consequently, weaknesses in any of these areas may reduce the comprehensiveness of an organisation's risk management system.

The eight indicators encompass both internal and external risk management. Internal risk management focuses on vulnerabilities arising within an organisation, including human errors, fraud, process inefficiencies, management failures, and weaknesses in internal controls. External risk management addresses threats originating from the operating environment, including market volatility, inflation, interest rate fluctuations, regulatory changes, cybersecurity threats, and third-party disruptions (Abiodun, 2020; Malynovska et al., 2025). Risk assessment and prioritisation help organisations determine the likelihood and potential consequences of identified threats, while regulatory compliance risk control and investment risk management address risks associated with statutory obligations and investment decisions. Crisis response readiness and business continuity planning support preparedness for disruptive events, while internal control systems help prevent errors, detect irregularities, and safeguard organisational resources. These practices are consistent with the principles of ISO 31000 and the Committee of Sponsoring Organizations of the Treadway Commission Enterprise Risk Management framework, which emphasise systematic risk identification, evaluation, treatment, communication, and monitoring (Efe, 2023).

For Pension Fund Administrators (PFAs) in Nigeria, the combined application of these practices is particularly important because their operations require the prudent management of pension-related resources, compliance with regulatory requirements, effective investment decisions, and

continuity of service delivery. Effective risk management may contribute to financial sustainability by reducing avoidable losses, controlling operating costs, protecting financial resources, improving decision-making, and strengthening the ability to respond to internal and external disruptions. However, these benefits depend on the quality of implementation, management commitment, availability of resources, and continuous monitoring (Tucci & Stedman, 2025). Accordingly, this study treats risk management practice as a composite formative construct, with the eight indicators jointly determining the overall construct rather than treating internal and external risk management as separate explanatory variables.

Pension Fund Administrators in Nigeria

In Nigeria, a Pension Fund Administrator (PFA) is a limited liability company that is duly licensed by the National Pension Commission (PenCom) under the Pension Reform Act (PRA) 2004 (as amended by PRA 2014), to perform the business of pension fund management. PFAs are special-purpose entities whose sole mandate is to open and manage Retirement Savings Accounts (RSAs) for employees under the Contributory Pension Scheme (CPS), invest the pension funds in accordance with guidelines issued by PenCom, maintain transactional and accounting records, provide periodic reports to contributors and beneficiaries, and pay retirement and other benefits as prescribed by law. PFAs are regulated by PenCom, which also issues their licence, supervises their investment and operational activities, and ensures they meet minimum standards of financial soundness, technical capacity, and governance (National Pension Commission. 2025).

Nigeria Pension Industry

The Nigeria Pension Industry refers to the structured system responsible for the administration, management, and regulation of retirement savings in Nigeria under the Contributory Pension Scheme (CPS). It is primarily regulated by the National Pension Commission (PenCom), which ensures compliance, stability, and transparency in pension fund management. The industry comprises Pension Fund Administrators (PFAs), which manage and invest contributors' retirement savings, and Pension Fund Custodians (PFCs), which safely hold pension assets on behalf of contributors. This dual structure was introduced through the Pension Reform Act of 2004 (as amended in 2014) to strengthen accountability, reduce corruption, and improve efficiency in pension administration.

The Nigerian pension system plays a crucial role in mobilizing long-term domestic savings, supporting capital market development, and ensuring income security for retirees. Over the years, the industry has experienced significant growth in pension assets due to improved compliance, expanded coverage of the formal sector, and increased regulatory oversight by PenCom. However, the industry continues to face challenges such as macroeconomic instability, inflation, exchange rate volatility, limited investment outlets, and governance-related risks, which may affect the financial sustainability of Pension Fund Administrators.

Furthermore, the effectiveness of the Nigeria Pension Industry is highly dependent on sound risk management practices, strong corporate governance structures, and technological innovation. PFAs are required to adopt enterprise risk management systems to safeguard pension assets, ensure compliance with regulatory standards, and maintain stakeholder confidence. In this regard, the industry remains a key pillar in Nigeria's financial system, contributing to economic development while ensuring retirement security for the workforce.

Empirical Review and Research Gap

The relationship between risk management practices and financial sustainability has attracted scholarly attention across developed, emerging, and developing economies, although existing studies have examined different outcomes, including pension-scheme sustainability, investment performance, retirement wealth, operational efficiency, and the financial performance of pension administration companies. In developed economies, Agarwal, Ewald, and Wang (2023) examined mortality-linked securities for managing longevity risk in defined-contribution pension schemes; Muns and Werker (2022) investigated collective pension risk-sharing mechanisms; Son and Kim (2022) examined environmental, social, and governance considerations in pension investment decisions; and Wolf and Río (2021) explored minimum pension guarantees and risk-sharing arrangements. Similarly, Grant (2024) and He, Li, and Wei (2025) highlighted the relevance of dynamic risk assessment, funding adequacy, and periodic evaluation to pension-system financial health. In emerging and developing economies, Asiedu, Ansah, Boakye, and Malcalm (2024) examined stakeholder involvement, risk management frameworks, mitigation strategies, and internal controls in Ghanaian private pension schemes; Le, Xiao, Pamučar, and Liang (2022) investigated longevity risk in China's pension system; Asiamah (2025) examined corporate governance and financial risk management in Ghanaian pension schemes; and Adisa, Oyedeji, and Porras (2022) investigated the contribution of technological systems to operational efficiency and service delivery in Nigeria's pension industry. Within Nigeria, Afolabi, Sanni, Oladele, and Olumoh (2024) found no significant influence of corporate governance mechanisms and investment policies on PFA financial sustainability, whereas Oseghale, Olotu, and Ilavbare (2025) reported a significant positive relationship between contributory pension fund risk management and pension fund sustainability. Aliu, Abdul-Hamid, Salami, and Olanrewaju (2023) found that transparency significantly enhanced contributory pension scheme sustainability, although compliance had a positive but insignificant effect, while Aliyu, Isa, and Bello (2024) established that corporate age and revenue positively influenced PFA financial performance, whereas corporate expenditure had a negative effect. Furthermore, Ajadi (2024) reported positive risk-adjusted returns and investment selectivity among Nigerian pension funds, although performance persistence was weak; Dogo and Sunday (2025) found that foreign exchange risk management and capital adequacy risk management significantly improved PFA financial performance, with pension fund size strengthening the relationship; Adamu and Sheela (2025) examined regulatory compliance in relation to employees' selection of PFAs; Ewuru, Nwoye, and Okoye (2025) associated pension asset growth with improved governance and risk management; and Umezu (2025) identified corruption, weak internal controls, and poor pension management practices as threats to pension administration and sustainability. Despite these contributions, a conceptual gap remains because pension-scheme sustainability, pension asset growth, investment returns, organisational performance, and the financial sustainability of PFA companies are not equivalent outcomes. A construct specification gap also exists because previous studies have frequently examined individual risk-related factors, such as foreign exchange risk, capital adequacy, governance, compliance, transparency, and investment policy, without consistently integrating risk management into a coherent framework. Moreover, findings from other jurisdictions may not adequately explain the financial sustainability of Nigerian PFAs operating amid inflationary pressures, exchange-rate volatility, regulatory changes, cybersecurity threats, and competitive pressures. Measurement differences further limit comparability where pension assets, retirement wealth, or investment performance are used instead of corporate financial indicators such as profitability, revenue stability, cost efficiency, and operational continuity. Anchored on Enterprise

Risk Management (ERM) Theory, this study addresses these gaps by conceptualising risk management through internal and external risk management, while recognising investment, liquidity, compliance, operational, and business continuity risks as categories that may cut across these dimensions on risk management practices on the financial sustainability of PFA companies,

3.0 Methodology

The study adopted a quantitative cross-sectional survey design to examine the effect of risk management practices on the financial sustainability of Pension Fund Administrators (PFAs) in Nigeria. The population comprised the 18 licensed PFAs regulated by the National Pension Commission (PenCom), while the sampling frame consisted of 450 eligible management personnel and senior staff across the institutions. Using systematic sampling, 150 respondents were selected at an interval of three after identifying a random starting point. A structured questionnaire, developed from relevant literature and adapted to the Nigerian pension industry, was administered to the selected respondents. Of the 150 questionnaires distributed across the 18 PFAs, 130 were returned, representing a response rate of 86.67%. Responses were measured on a five-point Likert scale. Financial sustainability (FS) was measured using indicators covering liquidity management, adequacy of cash reserves, disclosure of investment options and risks, customer base and service support, consistency and growth in net income, cost management, additional capital, and relationships between investors and financial institutions. Risk management (RM) was measured through internal and external risk identification, risk assessment and prioritisation, regulatory compliance controls, investment risk management, crisis response readiness, internal control systems, and business continuity planning.

The study specified a model to examine the relationship between risk management practices and the financial sustainability of PFAs as follows:

$$FS=\beta_0+\beta_1 RMi+\mu_t \quad \ldots\ldots\ldots\ldots\ldots\ldots \text{equation 1}$$

where (FS) represents the financial sustainability of the PFA as assessed by respondent (i); (RM_i) represents risk management practices; (β_0) is the intercept; (β_1) is the coefficient of risk management; and (μ_t) is the error term. The model was estimated using Partial Least Squares Structural Equation Modelling (PLS-SEM) with SmartPLS software. The measurement model was assessed for indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. The structural model was evaluated using path coefficients, the coefficient of determination ((R^2)), effect sizes ((f^2)) andbootstrapping to assess the statistical significance of the hypothesised relationship. The findings were interpreted in line with the cross-sectional nature of the data, which permits the examination of statistical relationships but does not independently establish causality or long-term changes in financial sustainability.

4.0 Results and Discussion of Findings

Results

Table 4.4:

Descriptive Statistics of Risk Management Practices and Financial Sustainability

Variable	Minimum	Maximum	Mean	Median	Skewness	Excess Kurtosis
RM3	3.000	5.000	4.500	5.000	-1.200	0.500
RM4	1.000	5.000	3.800	4.000	-1.905	3.337
RM5	1.000	5.000	3.750	4.000	-1.674	2.479
RM8	3.000	5.000	4.154	4.000	-0.900	0.300
FS2	1.000	5.000	4.146	4.000	-1.740	2.559
FS4	1.000	5.000	3.900	4.000	-0.800	0.200
Educational Qualification	1.000	4.000	2.850	3.000	-0.850	-1.217

Note: RM denotes Risk Management Practices, while FS denotes Financial Sustainability. The Likert scale ranges from 1 (strongly disagree) to 5 (strongly agree). Excess kurtosis is reported.

Source: Authors' Computation, 2026.

The descriptive statistics indicate that respondents generally expressed positive perceptions of both Risk Management Practices (RM) and Financial Sustainability (FS) among Pension Fund Administrators in Nigeria. This is evidenced by the relatively high mean scores recorded for most of the measurement items, which ranged from 3.069 to 4.500 on a five-point Likert scale. Specifically, RM3 (Mean = 4.500), RM8 (Mean = 4.154), FS2 (Mean = 4.146), and FS4 (Mean = 3.900) recorded the highest mean values, suggesting strong agreement among respondents regarding the effectiveness of risk management practices and their contribution to financial sustainability.

The measures of central tendency further show that the median values for most items were either 4 or 5, indicating that respondents predominantly selected the upper categories of the response scale. This pattern reinforces the generally favourable perception of risk management practices and financial sustainability within the sampled organisations.

Regarding the distributional characteristics, most demographic variables exhibited acceptable levels of skewness and kurtosis. Educational Qualification recorded a skewness value of -0.850 and an excess kurtosis value of -1.217, indicating a concentration of responses within a particular educational category. This suggests relatively limited variation in respondents' educational backgrounds, possibly reflecting the professional and educational requirements commonly associated with employment in the pension industry. Similarly, RM4 (Skewness = -1.905; Kurtosis = 3.337), RM5 (Skewness = -1.674; Kurtosis = 2.479), and FS2 (Skewness = -1.740; Kurtosis = 2.559) displayed noticeable negative skewness, implying that respondents tended to select higher agreement levels for these items.

Furthermore, RM3 and RM8 recorded observed minimum values of 3 rather than the scale minimum of 1, indicating that no respondent expressed disagreement with the statements represented by these items. This finding reflects a high degree of consensus among respondents and may suggest that these aspects of risk management are widely recognised and implemented across Pension Fund Administrators. However, such response patterns may also indicate reduced variability in responses and the possibility of a ceiling effect.

Overall, the descriptive statistics provide preliminary evidence that Pension Fund Administrators in Nigeria have adopted risk management practices to a considerable extent and that these practices are perceived to support organisational financial sustainability. The generally high mean scores, coupled with the concentration of responses towards the upper end of the scale, indicate positive respondent evaluations of both constructs.

Construct Reliability and Validity

Table 4.5:

Construct Reliability and Convergent Validity

Construct	Cronbach's Alpha	Composite Reliability (CR)	AVE	Decision
Financial Sustainability (FS)	0.812	0.854	0.602	Reliable and valid
Risk Management Practices (RM)	0.761	0.835	0.500	Reliable and valid
Recommended threshold	≥ 0.70	≥ 0.70	≥ 0.50	Acceptable

Source: PLS-SEM analysis, 2026.

Table 4.5 presents the results of the measurement model assessment for Financial Sustainability (FS) and Risk Management Practices (RM), focusing on internal consistency reliability and convergent validity. Cronbach's alpha and composite reliability (CR) were used to assess the internal consistency of the measurement items, while the average variance extracted (AVE) was employed to evaluate convergent validity. The results were assessed against the recommended thresholds of 0.70 for Cronbach's alpha and composite reliability and 0.50 for AVE.

The results indicate that Financial Sustainability recorded a Cronbach's alpha of 0.812, a composite reliability of 0.854, and an AVE of 0.602. Both reliability coefficients exceed the recommended threshold of 0.70, demonstrating satisfactory internal consistency among the measurement items. Furthermore, the AVE of 0.602 exceeds the minimum acceptable value of 0.50, indicating that the construct explains 60.2% of the variance in its indicators, on average. This provides evidence of satisfactory convergent validity for Financial Sustainability.

Similarly, Risk Management Practices recorded a Cronbach's alpha of 0.761 and a composite reliability of 0.835. Both values exceed the recommended threshold of 0.70, indicating acceptable internal consistency reliability. The construct also recorded an AVE of 0.500, which meets the minimum recommended threshold for convergent validity. This indicates that Risk Management Practices explains, on average, 50.0% of the variance in its indicators. Although this value is at the minimum acceptable boundary, it satisfies the conventional criterion for convergent validity.

Overall, the findings indicate that both constructs satisfy the specified criteria for internal consistency, reliability and convergent validity. Financial Sustainability demonstrates satisfactory measurement properties across all three indicators, while Risk Management Practices meets the minimum requirements, with its AVE exactly at the recommended threshold. These results support the adequacy of the reflective measurement model for subsequent structural model evaluation and hypothesis testing.

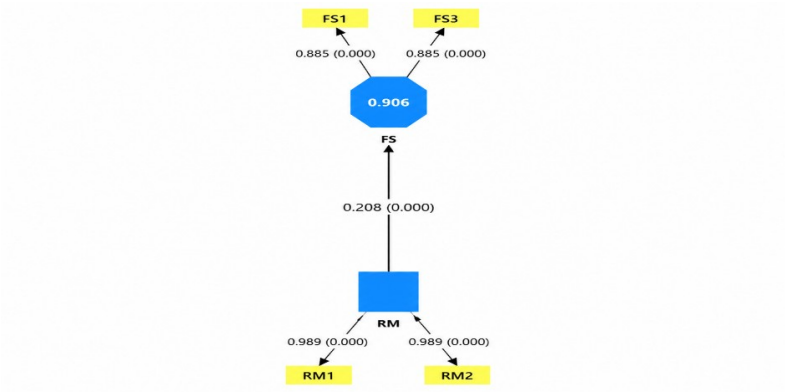
Table 4.3:
Correlation Analysis

	FS	RM
FS	1.000	0.898
RM	0.898	1.000

Source: Output from SmartPLS-4, 2026.

The correlation analysis results reveal a strong positive relationship between Risk Management Practice (RM) and Financial Sustainability (FS), with a correlation coefficient of 0.898. This indicates that improvements in risk management practices are associated with corresponding improvements in the financial sustainability of Pension Fund Administrators in Nigeria.

Structural Model Evaluation



Source: Output from SmartPLS-4, 2026.

Figure 1: Path Structural Model: Showing the analysis of the significance of factor loading path coefficient original sample (Beta) and P-value (sig.)

Analysis of Significance of Path Coefficient

Hypotheses	Original Sample (O)	T statistics (|O/STDEV|)	Path coefficients
RM>FS	0.092	3.09	0.002

Source: Output from SmartPLS-4, 2026.

Discussion of Findings

The study revealed that Risk Management Practices (RM) have a positive and statistically significant relationship with the Financial Sustainability (FS) of Pension Fund Administrators (PFAs) in Nigeria (\(\beta = 0.092,\ t = 3.09,\ p = 0.002\)). Since the p-value is below the 5% significance level, the null hypothesis is rejected. This finding suggests that stronger risk management practices are associated with improved financial sustainability among the sampled PFAs. However, the relatively small path coefficient indicates that the relationship, although statistically significant, is modest in magnitude. Risk management should therefore be considered one of the factors associated with financial sustainability rather than its sole determinant.

The finding is consistent with Enterprise Risk Management (ERM) Theory, which emphasises the coordinated identification, assessment, monitoring and treatment of risks across an organisation to support strategic objectives and organisational performance. PFAs operate in a complex financial environment characterised by investment uncertainty, market fluctuations, operational vulnerabilities, regulatory requirements and the need to maintain stakeholders' confidence. Effective risk management practices can help PFAs identify emerging threats, strengthen internal controls, monitor investment exposures, improve regulatory compliance and establish business continuity arrangements. These mechanisms may support financial sustainability by reducing avoidable losses, limiting operational disruptions and protecting the organisational resources required for continued operations. The significant positive relationship observed in this study therefore provides empirical support for the relevance of ERM principles to pension administration in Nigeria.

The finding also relates to the work of Afolabi et al. (2024), which examined corporate governance mechanisms, investment policy and financial sustainability among Nigerian PFAs. While that study focused on governance and investment policy, the present study extends the discussion by examining risk management practices as a distinct organisational factor associated with financial sustainability. The two studies address related aspects of organisational control and financial decision-making, suggesting that the sustainability of pension administration may depend on several complementary management mechanisms. Nevertheless, the findings should not be interpreted as demonstrating that risk management is more influential than corporate governance or investment policy, because the studies examine different explanatory variables and may employ different empirical specifications.

The findings are also relevant to the broader literature on risk management and organisational outcomes, including the studies cited by the researcher, namely Oladele (2023), Idowu and Ibrahim (2022), and Obasa (2022). However, the precise extent to which the present result agrees with or differs from these studies depends on their respective findings, research contexts, measurement approaches and analytical methods. Their bibliographic details and reported results should therefore be verified before making definitive claims of consistency or contradiction. In particular, evidence concerning financial performance should be distinguished from evidence concerning financial sustainability, as profitability and other short-term performance indicators do not necessarily capture an organisation's capacity to remain financially viable over the longer term.

From a practical perspective, the findings suggest that PFAs should strengthen risk identification and assessment procedures, regularly monitor investment and operational exposures, improve internal control systems, maintain effective regulatory compliance mechanisms and periodically review business continuity plans. Staff training and management oversight may also help ensure that risk management procedures are implemented consistently rather than existing merely as formal policies. These measures could support the financial sustainability of PFAs by improving their capacity to anticipate and respond to adverse developments. However, the study does not establish which individual risk management practices contribute most strongly to financial sustainability because risk management was evaluated as an aggregate construct.

In summary, the study provides evidence of a positive and statistically significant relationship between risk management practices and the financial sustainability of PFAs in Nigeria. The result supports the relevance of Enterprise Risk Management Theory by highlighting the importance of systematic risk management within a regulated financial services environment. Its contribution

lies in providing context-specific empirical evidence that risk management practices are associated with financial sustainability in the Nigerian pension industry. Nevertheless, given the modest coefficient and the cross-sectional nature of the study, the finding should be interpreted as evidence of a statistically significant association rather than definitive proof of causation. Future research could examine individual dimensions of risk management and use longitudinal data to establish whether improvements in risk management practices precede and contribute to changes in PFA financial sustainability.

5.0 Summary and Recommendations

The study examined the effect of risk management practices on the financial sustainability of Pension Fund Administrators (PFAs) in Nigeria. The findings revealed that risk management practice has a positive and statistically significant effect on financial sustainability (($\beta = 0.092$, $t = 3.09$, $p = 0.002$)). This indicates that effective risk management contributes positively to the financial sustainability of PFAs by supporting the identification, assessment, monitoring and mitigation of financial and operational risks. The finding underscores the importance of sound risk management practices in strengthening the financial stability, resilience and long-term viability of pension fund administrators in Nigeria.

Based on the findings, it is recommended that PFAs strengthen their enterprise risk management systems through regular risk assessments, robust internal controls, strict compliance with regulatory requirements and effective business continuity planning. They should also improve investment risk management by monitoring portfolio exposures, diversifying investments appropriately and establishing mechanisms for the early detection of emerging risks. Furthermore, PFAs should institutionalise continuous staff training and capacity development to improve the implementation of risk management policies and procedures. These measures could enhance the ability of PFAs to manage uncertainty, safeguard pension assets and sustain their financial performance over the long term.

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