



Investment Risk and Occupational Pension Scheme in Nigeria (A Case Study of Selected Pension Funds Administrators)

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ABSTRACT

The study investigated the influence of investment risk on occupational pension schemes in Nigeria. A descriptive research design was utilized, focusing on staff from ten selected pension fund administrations recognized as top performers and reputable entities within the Nigerian pension sector. Primary data were gathered alongside secondary data from various sources. The specific objectives included examining the effects of market risk, inflation rate risk, and interest rate risk on occupational pension schemes in Nigeria. A purposive sampling technique was employed, resulting in a sample size of 100 respondents, facilitated by structured questionnaires through a survey method. The SPSS statistical tool was used to analyze the data, and the results indicate that the predictors used in the study—market risk and interest rate risk—were both statistically significant, while inflation rate risk was statistically insignificant. This suggests that market risk and interest rate risk have a significant impact on pensioners' monthly income, and the study suggests that stakeholders implement risk management practices to reduce exposure to market volatility that could negatively impact retirees' lives.

Keywords: Pension, Inflation risk, Market risk, Interest Rate risk, Investment risk

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1. INTRODUCTION

1.1 Background Information to the Study

The purpose of a pension scheme is fundamentally to offer monetary incentives to retired workers who are no longer earning wages to support their daily needs. Employees are required to contribute a portion of their earnings into a collective fund known as a pension scheme, from which they can benefit upon retirement (Raji, 2022). Fapohunda (2019) states that “pension is aimed at providing workers with security by building up plans that are capable of providing guaranteed income to them when they retire or to their dependants when death occurs.” A pension may be provided by an employer, the government, or both, and is typically funded by contributions made by the individual and/or their employer throughout their working career (Oyelere & Oyelere, 2015).



Every employee, whether in the public or private sector, understands that they will eventually have to retire, and there are numerous reasons why people leave paid work. These include being in poor health, losing a job later in life, being eligible for social security, particularly in developed countries, having a good private income, having a spouse retire, or wanting to participate in recreational activities. (2018, Novak). Retirement may be mandatory, voluntary, or both. Pension fund administrators oversee the money contributed by both the employer and the employee (Akangbe, 2017). The terms and conditions of the parties' agreement determine whether the pension is paid as a one-time lump sum or in a series of installments over time (Adekoya & Adekoya, 2018). Pension fund custodians ensure that the funds are remitted correctly.

Nigeria, a British colony before colonization, filed a petition arguing that pension benefits should be provided to its citizens who had worked statutorily and retired; the petition was granted by the British Representatives in Nigeria. In 1951, the British Administration established a scheme known as the Pension Ordinance, which only applied to United Kingdom officials stationed in Nigeria and had retroactive effect from 1946. The vesting period was set at ten years of service, and the law permitted the Governor-General to award pensions and gratuities in line with the regulations, which were reviewed on a regular basis with the UK government's Secretary of State for Colonial Affairs. The Nigerian pension system is supervised by the National Pension Commission (PenCom), which was created by the Pension Reform Act of 2004. The first private pension plan for employees in the private sector was created by multinational corporations such as Nigeria Breweries (NB) in 1954 for their employees and United African Company (UAC) in 1957. This plan was created to offer retirement benefits to civil servants who had completed their service or reached the mandatory retirement age (Ogunba & Odusanya, 2013).

Investment risk, defined as the possibility of financial loss or uncertainty about the outcome of an investment, is an important concept in the finance industry, particularly when it comes to pension operations and retirement plans. It can have a significant impact on pensioners and retirees, pension funds, the community, and the overall economy. Pension fund administrators are responsible for managing their members' retirement savings, and they must invest these funds to generate the returns needed to meet future payment obligations. According to Fama and French (1993), investors should take into account the additional risk dimensions of company size and value/growth characteristics in order to better understand and manage the overall investment risk in their portfolios. Investment risk is multifaceted and cannot be fully captured by a single factor like market risk. If pension funds are exposed to excessive investment risks, it may result in underfunding, reduced benefits for retirees, and possibly the collapse of the pension scheme program if the pension funds were not invested in viable investment opportunities.

Diversification, asset-liability management, risk-based capital requirements, and investment guidelines are just a few of the strategies used by regulators and pension fund managers to mitigate investment risks (Adeosun and Akinlo, 2018). The long-term viability and dependability of pension plans, which are critical for providing retirees with financial security, are heavily dependent on effective risk management. One important topic that has received a lot of attention and research is the impact of investment risk on occupational pensions in Nigeria. For many Nigerians working in the formal sector, occupational pension plans (employer-sponsored retirement plans) are a significant source of income.



These plans, however, are vulnerable to a variety of investment risks that may jeopardize their long-term viability and the benefits that retirees receive. Market risk, inflation risk, credit risk, and interest rate risk are just a few of the major investment risks that Nigerian occupational pension plans must contend with. Financial market fluctuations can have an impact on the performance of pension funds' investments, such as stocks, bonds, and real estate. Significant losses in the value of pension fund assets can occur as a result of market or economic downturns, reducing the fund's overall value and the benefits available to retirees. Higher investment may result in lower investment returns, increased volatility and uncertainty, cash conversion difficulties due to liquidity risk, or financial instability as a result of financial institutions' excessive risk-taking and insufficient risk management.

All of these factors can contribute to systemic risk, which occurs when one institution fails, affecting the entire financial system. To reduce investment risks, Nigerian pension fund managers must diversify their portfolios, adhere to good investment practices, and closely monitor and control the risks associated with their investments. Occupational pension plans' stability and sustainability are also greatly influenced by regulatory frameworks and oversight. The overarching objective of the study is to determine how investment risk affects Nigeria's occupational pension plan. Other objectives include examining the impact of market risk, inflation rate risk, and interest rate risk on Nigerian pensioners' incomes.

2. LITERATURE REVIEW

2.1 Conceptual Review

Pensions have been recognized as a glorious appetizer to the retirees at the old age (Raji, 2022). Successful pension systems play a crucial role in addressing the challenges of population aging and ensuring the financial stability of individuals, households, and the economy at large. Every employee who has worked statutorily in an organization for a counted number of years hopes for a successful retirement. The only goal is to achieve a healthy life span at old age through a periodic payment known as a pension, which will be received from the pension administrators at the pension. In order to ensure that people have enough money to maintain their standard of living in retirement, pensions are designed to give retirees a consistent income stream that supplements or replaces their employment earnings.

They can be funded by contributions made by the employer, the employee, or a combination of both. They can be defined benefit plans, which are provided by the employer, or defined contribution plans, which are driven by the employees. Pensions frequently receive favorable tax treatment, either in the form of tax-deductible contributions or tax-deferred growth, which encourages and incentivizes people to save for their retirement. They are usually subject to a number of laws and regulations to ensure their solvency, proper funding, and fiduciary management of the assets.

2.2 Classification of pension scheme in Nigeria

1. **Retirement Pension:** In Nigeria, employees are usually eligible to receive this kind of pension after completing a certain amount of qualifying service, usually between 30 and 35 years.
2. **Compensatory pension:** this is given to employees whose permanent positions are eliminated and for whom the government is unable to find suitable alternative employment.



3. **Superannuating pension:** this is provided to retirees between the ages of 60 and 65, this type of pension focuses solely on age.
4. **Compassionate Allowance:** When a public servant is dismissed from service due to misconduct, insolvency, incompetence, or inefficiency, their pension is not admissible or permitted.

2.3 Conceptual Framework

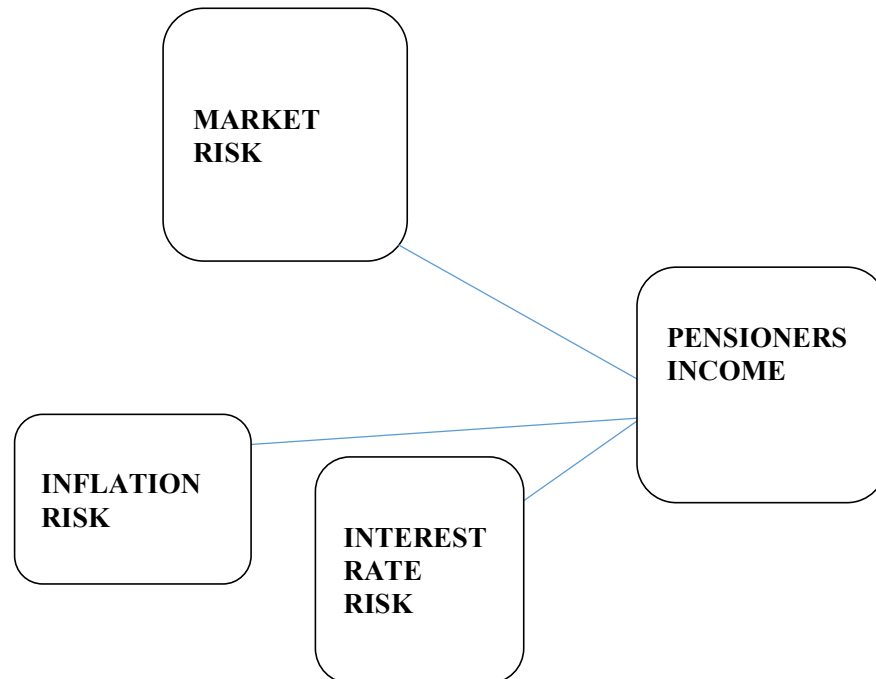


Fig 1: Conceptual Model

Market Risk:

This is the chance that the value of a particular asset class or the market as a whole will drop, which could have an impact on how well an investment performs. A number of variables, including investor sentiment, political developments, and economic conditions, affect market risk. Macroeconomic variables, including shifts in interest rates, inflation, economic expansion, and the political and regulatory landscape, are the main drivers of market risk. The performance of financial assets, such as stocks, bonds, and other securities, can be significantly impacted by these factors. This risk is characterized by financial market volatility and unpredictability, which can result in significant swings in asset values.

Many factors, including investor sentiment, geopolitical tensions, and economic events, can contribute to this volatility. Because it impacts the entire market or economy rather than just a single investment or asset, market risk is regarded as systematic. Because shifts in macroeconomic variables can directly affect the value of financial assets, there is a strong correlation between risk and returns.



Inflation Risk

This is the chance that over time, inflation's effects will reduce the purchasing power of an investment's returns. Investments may lose real value if they don't keep up with inflation. Over time, inflation lowers a currency's purchasing power, making the same amount of money buy fewer goods and services. The real value of an investment may be significantly impacted by this since the returns on the investment might not keep up with the rate of inflation. Since price increases may outpace nominal returns, inflation can lower real returns on investments. For fixed-income investments like bonds, where rising inflation can reduce the real return, this is especially problematic. Because inflation can be erratic and volatile, it can be difficult for investors to predict and prepare for how it will affect their investments. Investors may demand higher returns to offset the inflation risk as a result of this uncertainty, which can raise risk. Because investors may move their portfolios toward assets like commodities, real estate, or inflation-linked securities that are thought to be more resistant to inflation, inflation risk can have an impact on investment choices.

Interest Rates

indicate the cost of borrowing money or the return on lending money, expressed as a percentage of the principal amount. Interest rates significantly affect many economic activities and are essential to the financial system. The supply and demand for credit, inflation, economic growth, risk factors, and central banks' monetary policies are some of the variables that affect interest rates. In order to accomplish their goals, which include preserving price stability and fostering economic expansion, central banks, like the US Federal Reserve, employ interest rate policies as a tool. Interest rates significantly affect a number of financial decisions, including lending, borrowing, investing, and saving. While lower interest rates can encourage borrowing and investment, higher interest rates typically make borrowing more costly and make saving more alluring. Interest rates can change according to the loan's term or the borrower's level of risk. Interest rates are typically higher for longer-term loans or riskier borrowers in order to offset the increased risk.

2.14 Theoretical Review

Markowitz Portfolio Theory

This framework serves as the foundation for this study because it is used to assess the performance of managed portfolios. When it comes to investing, the Pension Fund Administration's Markowitz efficient behavior is usually associated with a preference for higher returns over lower returns. It also forecasts how to imagine investment risk as being directly dependent on the magnitude of expected returns. Since the goal of any investment is to produce returns and ensure that the anticipated returns on the investment funds exceed the associated risks so that they can meet their long-term obligations, such as claims, the Markowitz portfolio theory provides the framework for carrying out this study.

The objective of investing in pension businesses is to create a portfolio of assets whose maturity will match the expected return that can offset pensioners' claims, as the pension companies can only pay legitimate benefits. Higher returns on investment are preferred over lower returns because intermediation decisions, which consist of savings and contributions, are based on risk and return parameters. The Markowitz portfolio theory, which explains why investors in pension businesses are concerned about the performance of their funds in relation to pension income—basically a way to ensure the welfare of retirees—thus forms the theoretical basis for this study.



Behavioral Finance Theory:

According to behavioral finance theory, people don't always make completely logical choices about their financial matters, such as retirement planning and pension participation. The function of nudges, defaults, and other interventions in pension plans can be better understood by applying behavioral finance concepts like inertia, framing, and loss aversion. It takes into account the emotional and psychological aspects of investing, which can be especially important when it comes to occupational pension plans. This theory can be used to better understand how members and managers of pension funds react to investment risks and how these actions may affect the plan's overall performance.

2.5 Empirical Review

Adeosun, O. B., & Akinlo, T. (2018). This study focused on the performance of the Retirement Savings Accounts (RSAs) managed by Pension Fund Administrators (PFAs) in Nigeria and used a quantitative research approach, time-series analysis, and secondary data collected from the National Pension Commission (PenCom) of Nigeria. The study covered the period from 2005 to 2016, which is the post-reform era of the Nigerian pension system, and found a significant negative relationship between investment risk and pension fund performance in Nigeria.

In order to ensure the long-term sustainability and growth of pension fund assets, the study highlighted the need for effective risk management strategies in the Nigerian pension industry. The results indicated that an increase in investment risk, as measured by the standard deviation of pension fund returns, resulted in a decrease in pension fund performance, as measured by the pension fund returns. The findings imply that high investment risk can negatively affect the performance of pension funds in Nigeria.

A. T. Adegboye (2015). The research methodology used in the study was quantitative. It looked into the patterns and factors influencing pension fund investment in Nigeria using time-series analysis. The National Pension Commission (PenCom) of Nigeria provided secondary data for the study, which covered the years 2005–2013, or the post-reform era of the Nigerian pension system. It concentrated on the Nigerian Contributory Pension Scheme's (CPS) investment portfolio. Significant changes have also been made to the pension funds' investment portfolio, which now includes a wider variety of investment products such as corporate bonds, government securities, and equity investments. The study found a number of variables that affect Nigerian pension fund managers' investment choices, such as: Interest rates:

It was discovered that investing in pension funds was positively correlated with higher interest rates. Inflation rate: Investment in pension funds was found to be negatively impacted by higher inflation rates. Investment in pension funds was found to be positively impacted by economic growth, specifically higher economic growth as indicated by the GDP growth rate. Regulatory environment: The study emphasized how crucial the regulatory framework is in determining how Nigerian pension funds invest. According to the findings, when making investment decisions, pension fund managers in Nigeria should carefully take the macroeconomic climate and the regulatory environment into account.



3. METHODOLOGY

In order to gain access to a larger and more diverse population, as well as to consider societal impact and the regulatory environment, the researchers used a descriptive research design. The population consisted of the employees of ten specific pension fund administrations, which were chosen based on factors like asset under management, investment performance, customer satisfaction, regulatory compliance, and brand reputation. These included Stanbic IBTC Pension Managers, ARM Pension Managers, AXA Mansard Pension Leadway Pensure PFA, Premium Pension Limited, Sigma Pensions, NLPC Pension Fund Administrator, APT Pension Managers, Crusader Sterling Pensions, and Trustfund Pensions. Primary data were gathered from the financial institutions listed, while secondary data were obtained from other sources. Using a structured questionnaire and survey method, a sample size of 100 respondents was obtained using the purposeful sampling technique. The data were analyzed using the SPSS statistical tool, and the questionnaires were pre-tested to ensure their validity and compliance with reliability standards.

Model Specification: The functional relationship between the dependent variable and the explanatory variables was expressed by the following model, which is an adaptation of a popular model.

$$PI = f(MR, IR, IRR)$$

The following equation represents the functional relationship mentioned below:

$$PI = \beta_0 + \beta_1GP + \beta_2PSC + \beta_3OS + \mu$$

Where:

PI = Pensioners Income

MR = Market Risk

IR= Inflation Risk

IRR = Interest Rate Risk

β_0 = intercept or constant

$\beta_1, \beta_2, \& \beta_3$ = coefficients of the explanatory variables or factor sensitivities

A priori expectations: $\beta_0, \beta_1, \beta_2, \& \beta_3 \neq 0$

μ = the error term

Gender

Table 1 showing: Analysis of Gender

GENDER				
	Frequency	Percent	Valid Percent	Cumulative Percent
MALE	73	73.0	73.0	73.0
Valid FEMALE	27	27.0	27.0	100.0
Total	100	100.0	100.0	

Source: field survey Nov, 2024

According to the above table, 30% of the pensioners' staff were women and 70% of them were men.



Table 2 showing: Analysis of Age

AGE

	Frequency	Percent	Valid Percent	Cumulative Percent
20-29 years	58	58.0	58.0	58.0
30-39 years	16	16.0	16.0	74.0
Valid 40-49 years	18	18.0	18.0	92.0
50 years and above	8	8.0	8.0	100.0
Total	100	100.0	100.0	

Source: field survey Nov, 2024

According to the above table, 58% of pension employees are in the 20–29 age range, 16% are in the 30-39 age range, 18% are in the 40–49 age range, and 8% are over the 50 years old.

ACADEMIC QUALIFICATION

	Frequency	Percent	Valid Percent	Cumulative Percent
ND/NCE	7	7.0	7.0	7.0
HND/BSc	64	64.0	64.0	71.0
Valid PGD/MSc	18	18.0	18.0	89.0
MPhil/PhD	11	11.0	11.0	100.0
Total	100	100.0	100.0	

Source: field survey Nov, 2024

The table above shows that 7% of the selected pension staff were holders of ND/NCE, 64% were HND/BSc category, 18% were PGD/MSc category at the period of the study, 11% were MPhil/PhD category.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	506.338	3	168.779	39.078	.000 ^b
	Residual	414.622	96	4.319		
	Total	920.960	99			

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.741 ^a	.550	.536	2.07822

a. Predictors: (Constant), interest rate risk, Inflation risk, Market risk



Assumption 1 Goodness of Fit: The R2 value in table 5 above is 0.550, meaning that market, inflation, and interest rate risk account for approximately 55.0% of the variation in pensioners' income. Additionally, the adjusted R2 value shows that, after adjusting for the degree of freedom, the model could explain approximately 53.6% of the systematic variation in pensioners' income; the closer the value is to one, the better the result (Tabachnick and Fidell, 2007).

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-.207	.711		-.291	.772
1 Market risk	.389	.102	.399	3.807	.000
Inflation rate risk	.240	.126	.163	1.901	.060
Interest rate risk	.352	.122	.282	2.872	.005

Coefficient of the variables: The constant's value of -0.207 indicates that, when all other variables are held constant, pensioners' income will decrease by -0.207. The market risk coefficient, which is 0.389, indicates that, for every unit increase in market risk, pensioners' income will increase by 0.389. The inflation risk coefficient, which is 0.240, indicates that, for every unit increase in inflation risk, pensioners' income will increase by 0.037. Finally, the interest rate risk coefficient, which is 0.352, indicates that, for every unit increase in interest rate risk, pensioners' income will increase by 0.352.

T-test: Finding significant relationships between variables can be done with the help of the t-test; if the t-statistics' p-value is less than 5% (0.05), we can reject the null hypothesis and accept the alternative one; if not, we do the opposite.

Two of the proxies used in the study show a significant impact on pensioners' income, and the final one shows no significant relationship at all. The model shows probability values of 0.000, 0.06, and 0.05, respectively. The study found that both market risk and interest rate risk were statistically significant, while inflation risk was statistically insignificant. Inflation may also have a positive impact on pensioners' income in terms of debt relief, but these findings imply that market risk and interest rate risk have a significant impact on pensioners' monthly income receivable due to market fluctuations. Additionally, fixed income, such as pensioners' income, will undoubtedly lose value due to higher interest rates, which will hinder the growth of average Nigerian pensioners to a moderate standard of living.

4. FINDING, CONCLUSION AND RECOMMENDATIONS

According to the report, several factors contribute to pensioner income being unsustainable, including market risk, interest rate risk, and inflation risk. To alleviate pensioners' pain, the report recommends that the government prioritize pension payments and establish regulations for pension funds to be managed prudently. Also, ensure that risk management practices are in place to reduce exposure to market volatility, which can have an impact on retirees' lives.



To address the underlying causes of pension income sustainability, additional measures such as efficient monitoring and interest rate adjustments are needed to help pensioners' fixed income purchasing power while keeping inflation within a target range. The study adds to the body of knowledge about retiree well-being and pension fund investments in Nigeria.

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APPENDIX

- ❖ Stanbic IBTC Pension Managers ,ARM Pension Managers, AXA Mansard Pension
- ❖ Leadway Pensure PFA ,Premium Pension Limited, Sigma Pensions,NLPC Pension Fund Administrator,APT Pension Managers ,Crusader Sterling Pensions ,Trustfund Pensions
- ❖ These PFAs are generally considered among the top-performing and most reputable in the Nigerian pension industry, based on factors such as:Asset under management,Investment performance ,Customer satisfaction Regulatory compliance and Brand reputation.