



Pension coverage, adequacy, and inclusion in Nigeria: An empirical assessment of PTAD and PENCOR

Obasi Michael Ihembuchi¹, Ibrahim Musa², Kabiru Muhammed³

¹ Sustainable Development Centre, University of Abuja, Abuja, Nigeria

² Department of Economics, University of Abuja, Abuja, Nigeria

³ Department of Economics and Development Studies, Federal University, Kashere, Nigeria

Abstract

Pension systems play a critical role in safeguarding the welfare of retirees and promoting socioeconomic stability, yet concerns persist regarding pension coverage, adequacy, transparency, and service delivery in Nigeria. This study investigates staff perceptions within the Pension Transitional Arrangement Directorate (PTAD) and the National Pension Commission (PENCOR) to assess the effectiveness of pension administration under the Defined Benefit Scheme (DBS). Using a descriptive cross-sectional design, data were collected from 239 respondents using a structured, validated questionnaire. Descriptive statistics, reliability analysis, and Spearman's Rank Correlation were used to evaluate pension coverage and inclusion, benefit adequacy and inflation protection, governance and transparency, service delivery efficiency, and pension fund investment sustainability. Findings reveal generally positive perceptions across most indicators, particularly in governance structures, service delivery improvements, and investment oversight. Respondents reported that PTAD maintains clear administrative procedures, strong internal controls, and effective communication with pensioners. However, areas requiring improvement include the inclusion of informal-sector workers, the adequacy of inflation-adjusted benefits, and enhanced sensitisation efforts for underserved groups such as women and rural residents. Correlation analysis indicates weak, mainly statistically insignificant relationships among the major pension system components, suggesting that improvements in one dimension — such as service delivery — do not automatically translate into advancements in coverage, adequacy, or investment sustainability. A weak but significant negative correlation was observed between service delivery and investment sustainability, reflecting nuanced staff perceptions on resource prioritisation. The study highlights substantial progress in pension administration within Nigeria's DBS framework, while emphasising the need for broader coverage expansion, stronger inflation protection mechanisms, and targeted reforms to enhance equity and long-term sustainability. The findings provide evidence-based insights valuable for policymakers, pension administrators, and stakeholders seeking to strengthen Nigeria's pension architecture.

Keywords: Pension coverage, Adequacy, Pension Inclusion and Service delivery

Introduction

The provision of income security in old age remains a central pillar of social protection systems worldwide (Magaji *et al.*, 2022) [23]. In both developed and developing economies, pension schemes mitigate poverty among retirees, smooth consumption over the life cycle, and enhance economic resilience among ageing populations (Musa *et al.*, 2024) [25]. In Nigeria, the evolution of the pension system reflects a long history of structural weaknesses, fiscal pressures, and administrative inefficiencies that necessitated major reforms (Ahmad & Oyintayo, 2020). Before 2004, the public-sector-dominated Defined Benefit Scheme (DBS) was characterised by chronic underfunding, corruption, weak record-keeping, and massive pension arrears (Magaji & Musa, 2015; El-Yaqub *et al.*, 2024) [13, 21]. These deficiencies eroded public confidence, generated social hardship for retirees, and placed a heavy burden on government budgets (Okafor, 2021).

The Pension Reform Act (PRA) 2004 marked a turning point by introducing the Contributory Pension Scheme (CPS), supported by the establishment of the National Pension Commission (PENCOR). This reform aimed to improve sustainability, enhance transparency, and broaden coverage beyond the formal public sector (Balogun, 2019). The subsequent PRA 2014 further strengthened the regulatory framework, expanded the scope of participation,

and created additional compliance mechanisms. Despite these reforms, pension coverage in Nigeria remains notably low. While CPS participation has grown among formal private and public workers, the informal sector — comprising over 80% of the Nigerian workforce — remains largely excluded (World Bank, 2020) [36]. Existing evidence suggests that pension participation is strongly correlated with employment formality, financial literacy, income stability, and trust in public institutions (Adelegan & Ekwueme, 2022; Nejo *et al.*, 2025; Magaji *et al.*, 2025) [24, 28].

The issue of pension adequacy has also risen to the forefront of scholarly and policy debates. Adequacy refers to the capacity of retirement benefits to meet retirees' basic consumption needs, protect against old-age poverty, and maintain living standards. In Nigeria, adequacy is compromised by structural factors such as high inflation, low contribution density, unstable employment conditions, and limited real-return opportunities within the pension fund investment environment (Nwude & Ugwunta, 2021; Abeke *et al.*, 2025; Adekoye *et al.*, 2025) [1]. Empirical studies reveal that even contributors who participate consistently may experience inadequate retirement income due to inflationary erosion and conservative investment patterns dominated by government securities (PENCOR, 2023). These dynamics raise concerns about the long-term ability

of the pension system to deliver meaningful financial protection for future retirees.

In response to widening coverage and equity gaps, the Nigerian government introduced the Micro Pension Plan (MPP) in 2019 as a voluntary scheme for artisans, traders, farmers, transport workers, and other informal-sector participants. While the MPP is conceptually innovative — allowing flexible contributions, mobile remittances, and instant enrollment via digital platforms — it has been slow to implement, and uptake remains limited (Ogunbiyi & Adeyemi, 2023). Barriers such as limited awareness, low financial literacy, mistrust of formal institutions, inconsistent cash flows, and weak distribution channels continue to impede participation (Magaji & Yahaya, 2012; Ismail *et al.*, 2025) ^[18]. As a result, large segments of Nigeria's population — especially women, rural dwellers, and low-income earners — remain without reliable retirement savings mechanisms (ILO, 2022; Ahmed *et al.*, 2024; Enaberue *et al.*, 2024) ^[4, 14].

A critical dimension in understanding pension outcomes involves the role of institutional service delivery, encompassing efficiency, transparency, record-keeping, customer engagement, and digital responsiveness. Studies suggest that pension system performance is significantly shaped by service delivery quality (Ejumudo, 2020). In Nigeria, the Pension Transitional Arrangement Directorate (PTAD) has improved DBS administration through biometric verification, digital record harmonisation, and centralised payment systems. Nevertheless, broader public concerns about delays, inaccurate records, and communication lapses persist, influencing public perception and willingness to participate in pension reforms.

Within this context, pension coverage, adequacy, and inclusion are not merely administrative issues but deeply interconnected components of social and economic development. Low coverage contributes to old-age poverty, vulnerability, and household financial insecurity. Inadequate benefits undermine confidence in the pension system and discourage long-term participation. Exclusion of vulnerable groups — particularly in the informal sector — creates intergenerational social burdens, weakens social cohesion, and undermines Nigeria's progress towards the Sustainable Development Goals (SDGs), particularly SDG 1 (No Poverty) and SDG 10 (Reduced Inequalities) (Ibrahim *et al.*, 2025) ^[19]. Thus, a comprehensive understanding of the determinants and interrelationships among coverage, adequacy, and inclusion is critical for designing effective policy interventions.

This study contributes to the expanding pension literature by providing empirical insights from key institutional actors, PTAD and PENCOR staff, who are directly involved in pension administration, regulation, and service provision. Their perspectives offer an authoritative understanding of systemic strengths, gaps, and reform opportunities. By integrating quantitative evidence with theoretical perspectives on social protection, labour informality, and institutional governance, this article provides a holistic assessment of Nigeria's pension architecture and proposes actionable recommendations to advance a more inclusive, adequate, and sustainable pension system.

Literature Review

This section presents a comprehensive review of the literature on pension coverage, adequacy, and inclusion. It is organised into four sub-sections: conceptual review, theoretical review, empirical review, and identified gaps in the literature.

Conceptual Review

Pension Coverage

Pension coverage refers to the proportion of the working population actively enrolled and contributing to a pension scheme. It is widely recognised as a core indicator of the effectiveness and inclusiveness of any pension system (Barr & Diamond, 2016). Coverage determines the system's capacity to reduce old-age poverty, promote consumption smoothing, and enhance social cohesion. In developing countries, pension coverage is typically low due to high levels of informality, irregular income flows, limited financial literacy, and weak institutional trust (World Bank, 2020) ^[36]. In Nigeria, pension coverage has historically been narrow because of the dominance of informal employment. The Pension Reform Act of 2004 expanded the scope of coverage by introducing the Contributory Pension Scheme (CPS), which mandates participation among both public- and private-sector workers. However, the informal sector — which constitutes over 80% of the workforce — remains inadequately covered (Adelegan & Ekwueme, 2022). To address this, the Micro Pension Plan (MPP) was introduced in 2019, allowing flexible and voluntary contributions by informal workers. However, uptake remains slow due to structural and behavioural constraints (Ogunbiyi & Adeyemi, 2023).

Pension Adequacy

Pension adequacy refers to the ability of retirement benefits to meet retirees' consumption needs and sustain their living standards (Holzmann & Hinz, 2005) ^[16]. Contribution density, real investment returns, wage replacement rates, inflation adjustments, and the efficiency of benefit administration determine adequacy. In economies struggling with high inflation, as in Nigeria, the real value of pension benefits is often eroded, undermining the purpose of old-age income protection (Nwude & Ugwunta, 2021). Adequacy is also linked to the investment strategies of pension fund administrators. In Nigeria, pension funds are heavily concentrated in federal government securities, limiting opportunities for higher returns and diversification. Consequently, contributors' retirement savings may not keep pace with inflation, resulting in real income losses at retirement (PENCOR, 2023).

Pension Inclusion

Inclusion refers to the extent to which a pension system accommodates all categories of workers, including vulnerable groups such as women, informal workers, the self-employed, low-income earners, and rural communities. Inclusive pension systems utilise flexible contribution arrangements, digital platforms, community-based outreach, and tailored compliance frameworks (ILO, 2022). In Nigeria, inclusion remains weak due to socio-economic, cultural, and institutional barriers. Limited financial literacy, mistrust of government institutions, irregular earnings, and limited access to digital infrastructure hinder participation among informal-sector workers (Ekemini, 2020). The gender dimension is also significant: women have lower labour-force participation, shorter contribution periods, and often lower lifetime earnings, increasing their risk of exclusion (UN Women, 2021).

Contribution Density

Contribution density refers to the frequency and consistency with which workers make contributions to their pension accounts. High contribution density over a worker's career

greatly improves retirement income adequacy (Holzmann & Hinz, 2005) ^[16]. In countries with formal employment dominance, contribution density is typically stable. However, in economies like Nigeria, characterised by fluctuating earnings and informal employment structures, contribution density tends to be low, irregular, or inconsistent (Afolabi, 2021). Low contribution density reduces pension asset accumulation and exposes retirees to old-age vulnerability. It is often linked to job instability, self-employment, economic shocks, and low levels of automation in payroll systems (Hinrichs, 2020).

Portability and Transferability

Pension portability refers to the ease with which workers can transfer accumulated pension rights across jobs, sectors, or geographical locations. For workers in dynamic labour markets — especially younger and mobile workers — portability enhances participation and long-term adequacy (Barr & Diamond, 2016). Nigeria's CPS framework provides for the portability of Retirement Savings Accounts (RSAs), enabling contributors to change Pension Fund Administrators (PFAs) without losing accrued benefits. However, administrative delays, complex documentation processes, and limited sensitisation hinder the effective use of portability channels (Ejumudo, 2020).

Trust and Institutional Credibility

Trust is a critical determinant of pension participation. When contributors lack confidence in regulatory institutions, benefit payments, record-keeping accuracy, or investment integrity, they are less likely to participate in pension schemes (ILO, 2022) voluntarily. Nigeria's historical challenges under the old DBS, where pensioners faced massive arrears and fraud, contributed to deep institutional distrust. Although PTAD has restored some confidence by automating record-keeping and eliminating ghost pensioners, the residual trust deficit continues to affect pension inclusion, especially among informal workers (Okafor, 2021).

Digitalisation and Pension Access

Digitalisation enhances pension service delivery, transparency, and participation. Mobile contributions, online statements, automated record reconciliation, biometric identification, and digital onboarding significantly reduce administrative barriers (World Bank, 2020) ^[36]. Countries such as Kenya (M-Pesa), India (Atal Pension Yojana), and Rwanda demonstrate that digital infrastructure accelerates informal-sector pension uptake. Nigeria's pension digitalisation is improving, but is limited by low internet penetration in rural regions, low smartphone ownership, and weak digital literacy (Adeleke, 2022).

Financial Literacy and Pension Awareness

Financial literacy refers to individuals' understanding of savings, investment, retirement planning, and pension regulations. Numerous studies show that financial literacy strongly correlates with pension participation, contribution consistency, and investment behaviour (UN Women, 2021). In Nigeria, low literacy levels — particularly among informal workers — impede pension coverage. Workers often perceive pensions as government taxes or inaccessible savings, reducing willingness to join the Micro Pension Plan (Ekemini, 2020).

Theoretical Framework

Several theories provide the conceptual foundations for understanding pension coverage, adequacy, and inclusion. To underpin this study, Social Risk Management Theory is used.

Social Risk Management Theory

The World Bank's Social Risk Management (SRM) framework proposes that societies adopt formal and informal mechanisms to protect individuals against life-course risks, including old-age income insecurity (Holzmann & Jorgensen, 2001). Pension schemes are formal risk-management instruments. However, when significant segments of the population, such as informal workers, are excluded, households rely on informal safety nets that are often inadequate and unstable.

Empirical Review

Empirical studies across countries highlight the determinants and challenges of pension coverage and adequacy, revealing patterns that underscore the importance of institutional, economic, and behavioural factors in shaping retirement systems. Research consistently shows that pension coverage is highest in countries with formal labour markets, simplified contribution systems, and widespread digital payment channels, as evidenced by Hinrichs (2020), who emphasises that streamlined processes reduce barriers to participation. For instance, mobile-money integration in Kenya and Rwanda has significantly increased informal-sector participation in retirement savings, with Kirira (2019) noting substantial increases in enrollment among previously excluded workers. Similarly, Chile's pension reforms illustrate the effectiveness of targeted subsidies and automatic enrollment in boosting inclusion among low-income earners, as detailed by Rofman and Olivieri (2012), demonstrating that policy incentives can bridge gaps in voluntary systems.

Adequacy studies across Latin America and Eastern Europe further reveal that inflation-indexed benefits and diversified investment portfolios greatly enhance retirees' welfare. However, excessive administrative fees undermine this in several low- and middle-income countries, according to Mesa-Lago (2018). In Nigeria, empirical research highlights persistent coverage gaps, with Adelegan and Ekwueme (2022) reporting that informal-sector workers exhibit low pension participation due to income instability and mistrust of formal institutions. Ekemini (2020) complements this by finding that financial literacy significantly influences participation decisions, suggesting that education and awareness are critical levers for reform. Studies on adequacy in Nigeria show that inflationary pressures and limited investment diversification threaten long-term pension value, as outlined by Nwude and Ugwunta (2021), while PENCOM's annual reports acknowledge the challenge of preserving real returns under current macroeconomic conditions (PENCOM, 2023). Research on inclusion demonstrates gender disparities, with women facing higher risks of old-age poverty due to shorter and more irregular work histories, as noted by Afolabi (2021), alongside structural barriers in rural areas, including low bank penetration and weak digital infrastructure.

Empirical evidence from Latin America, such as in Chile, Peru, and Colombia, shows that low contribution density significantly reduces replacement rates and leads to

inadequate retirement income among informal-sector workers, as analysed by Rofman and Olivieri (2012). Similar patterns emerge in South Africa and Kenya, where irregular contributions from self-employed individuals diminish the long-term value of pension assets, according to Kirira (2019). In Nigeria, Afolabi (2021) found that fewer than 30% of CPS enrollees consistently make monthly contributions due to labour turnover and informal employment spells, resulting in insufficient balances for adequate retirement income, even among registered members. A multi-country study by the ILO (2022) found that informal workers' pension participation improves significantly when schemes incorporate flexible micro-contribution structures, mobile money collection channels, tax incentives or matching contributions, simplified registration systems, and targeted awareness programs. For example, in Ghana, the informal RTS (Retirement Trust Scheme) recorded increased participation following the introduction of mobile remittances, while in India, the Atal Pension Yojana enhanced inclusion through small, daily voluntary contributions and government co-contributions for low-income workers. Nigeria's Micro Pension Plan mirrors these international models, but its adoption remains slow due to weak awareness and socio-cultural mistrust, as highlighted by Ogunbiyi and Adeyemi (2023).

Studies from Turkey, Argentina, and Nigeria emphasise that inflation significantly undermines retirement benefits when pension systems lack reliable indexation mechanisms, with Mesa-Lago (2018) pointing to widespread erosion of purchasing power. In Nigeria, research shows that inflation has consistently outpaced pension fund returns for several years, yielding negative real returns (Nwude & Ugwunta, 2021), implying that even consistent savers may face real income losses at retirement. Evidence also suggests that trust in pension institutions strongly influences participation, especially in voluntary systems, with a study in Tanzania showing that efficient service delivery and transparent communication directly increase worker enrollment, per Kaluluma (2019). In Nigeria, Ejumudo (2020) found that PTAD's biometric reforms improved pensioner confidence, though public perception of PFAs remains mixed due to perceived opacity in charges and investment decisions. Adelegan and Ekwueme (2022) concluded that weak trust is among the top three barriers to informal-sector pension participation.

Empirical studies consistently show that women are disproportionately excluded from pension systems, receiving 25-30% lower pension benefits on average in OECD countries due to shorter working lives and lower lifetime earnings, as reported by UN Women (2021). In Nigeria, Afolabi (2021) observes that gender gaps in labour participation and wages significantly reduce women's pension accumulation, with many women in rural areas engaging in subsistence farming or unpaid family labour, making pension participation unlikely without targeted interventions. Emerging studies reveal strong relationships between digital platforms and coverage expansion, with Rwanda's digital pension enrollment increasing participation by 42% within two years, according to the ILO (2022). In Nigeria, Adeleke (2022) found that digital pension apps improved RSA engagement among younger contributors but remained inaccessible to many rural workers, implying that digitalisation alone is insufficient without accompanying infrastructure and literacy improvements.

Despite extensive research, several gaps remain in the literature, including limited empirical studies that use institutional stakeholders' perspectives; most Nigerian studies rely on retirees or contributors rather than analysing the perceptions of PTAD and PENCOT staff, who directly administer and regulate pensions. There is also weak integration of coverage, adequacy, and inclusion into a unified analytical framework, with existing studies treating these concepts separately and lacking empirical work on their systemic interactions. Insufficient data on the implementation of Micro Pension Plans is another gap, as the current literature acknowledges low uptake but rarely investigates institutional challenges and operational bottlenecks. Furthermore, empirical correlation analysis between service delivery and pension outcomes is limited, with few studies statistically testing how digital efficiency, customer communication, and record accuracy influence coverage and adequacy. Gaps persist in gender-sensitive pension research, despite acknowledged disparities. However, empirical investigations remain sparse, especially in Nigeria, and there is a scarcity of studies on inflation-related adequacy challenges, given the country's high inflation, which warrants more research on long-term risks.

In conclusion, the reviewed literature highlights the multidimensional nature of pension systems, emphasising the interrelationships among coverage, adequacy, and inclusion, while noting that significant reforms in Nigeria have been hindered by structural constraints and behavioural barriers that limit pension penetration and retirement income security. The current study fills key literature gaps by examining institutional perspectives and applying a correlation-based empirical approach to assess how coverage, adequacy, and service delivery interact within Nigeria's evolving pension architecture.

Methodology

This study adopted a descriptive cross-sectional survey design to examine perceptions of pension coverage, adequacy, and inclusion within Nigeria's pension system. The design was considered appropriate because it enables the systematic collection of standardised information from a large group of institutional actors at a single point in time, while supporting both descriptive and correlational analyses (Creswell & Creswell, 2018) ^[11]. The target population consisted of staff from the Pension Transitional Arrangement Directorate (PTAD) and the National Pension Commission (PENCOT), selected for their direct involvement in pension administration, regulation, compliance monitoring, service delivery, and policy implementation. A purposive-convenience sampling approach was used to ensure representation across technical, compliance, benefits administration, ICT, and investment supervision units. This expert-focused sampling strategy is widely accepted in policy-oriented pension research because it captures informed perspectives on institutional processes (Patton, 2015) ^[33]. In total, 239 respondents participated in the study.

Data were collected using a structured questionnaire comprising five sections: demographic characteristics; pension coverage; pension adequacy; pension inclusion with emphasis on the Micro Pension Plan; and service delivery and transparency. Most items were measured using a five-point Likert scale, which is appropriate for capturing perceptual and attitudinal variables standard in pension and

social protection studies (Holzmann & Hinz, 2005) [16]. Items were adapted from existing World Bank and ILO pension assessment tools to ensure relevance and conceptual alignment.

Validity and reliability procedures were undertaken to ensure data quality. Content and face validity were established through expert review by academic supervisors and senior pension practitioners. A pilot test involving 20 respondents helped refine item clarity and sequencing. Reliability analysis using Cronbach's alpha produced coefficients above the recommended 0.70 threshold for all primary constructs, indicating acceptable internal consistency (Nunnally & Bernstein, 1994) [29].

The data collection process used a mixed-mode approach, with physical distribution at departmental briefings, online dissemination via institutional email, and designated drop-box returns. This mixed strategy enhanced response rates and accommodated staff members' varying schedules. Participation was voluntary and anonymous.

Quantitative data were coded and analysed using SPSS version 26. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarise respondents' demographic characteristics and perceptions. To validate the structure of multi-item scales, exploratory factor analysis was employed where appropriate. The primary inferential technique was Spearman's Rank Correlation, chosen because it is suitable for ordinal data derived from Likert scales and does not require normality assumptions (Conover, 1999) [10]. The analysis examined associations among coverage, adequacy, inclusion, and service delivery variables. Supplementary analyses, including Mann-Whitney U and Kruskal-Wallis tests, were applied to identify differences in perceptions

across categorical groups such as department and years of service. Qualitative comments from open-ended items were analysed using simple thematic coding to provide contextual depth and triangulate quantitative results.

Ethical approval was secured from the relevant institutional review authorities, and all respondents provided informed consent. Confidentiality and anonymity were assured throughout the study, and no identifying information was collected. Although the purposive-convenience sampling limits the generalizability of findings beyond PTAD and PENCOM, and the cross-sectional design restricts causal inference, the methodology remains suitable for capturing expert insights that inform policy analysis and institutional diagnosis.

Results and Analysis

The demographic structure of respondents reveals a balanced and representative workforce profile across critical units of pension administration, as reported in Chapter Four of the source document, with distributions by gender, age, department, job rank, and years of service confirming the heterogeneity of staff perceptions that inform the validity of the findings. Mid-career and senior-level staff account for most respondents, with 47.7% senior staff and 35% having served for 5-10 years, providing strong institutional memory and operational insight. Departments such as Pension Administration (27.6%), Verification (25.1%), and Finance (21.3%) dominate the dataset, demonstrating depth of representation in the core processes that shape pension coverage, benefit payments, and record accuracy. These demographic distributions strengthen the reliability of subsequent analyses, given respondents' exposure to pension operations across service units.

Table 1: Pension Coverage and Inclusion

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Adequate coverage of eligible public sector workers	10	29	65	82	53
Inclusion of informal sector workers	13	34	63	79	50
Mechanisms to enrol unregistered pensioners	15	28	52	91	53
Fair representation of women and rural residents	16	24	59	88	52
Effective outreach and sensitisation	12	32	43	80	72

The descriptive results for pension coverage and inclusion are summarised in Table 4.1, where respondents expressed moderately positive views on PTAD's capacity to cover eligible workers and integrate excluded groups. A combined 56.5% agreed or strongly agreed that the system adequately covers eligible public workers, while 54% affirmed inclusion efforts for informal sector workers and the ability to identify previously unregistered pensioners. However, the neutral responses--often exceeding 25%--signal uncertainty about the practical reach of pension inclusion efforts, particularly regarding informal workers, women, and rural

residents, aligning with literature indicating persistent structural barriers to pension access in Africa's informalized labour markets (Holzmann & Palacios, 2024; World Bank, 2022). Similarly, 61.1% of respondents agreed that the architecture supports equitable socio-economic access. However, 39% expressed neutrality or disagreement, reinforcing inclusion challenges, consistent with Gasiokwu & Olorienu (2025), who found ongoing exclusion of informal-sector workers due to legal and administrative constraints.

Table 2: Pension Adequacy and Inflation Protection

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Benefits meet basic needs	5	24	78	62	70
Adjusted for inflation	17	38	57	69	58
Delays reduce real income	16	24	75	77	47
Funding ensures long-term adequacy	9	16	54	91	69
Management protects purchasing power	9	18	55	83	74
Pensioner satisfaction	13	26	57	90	53

The perceptions of adequacy and inflation protection are presented in Table 4.2, indicating that 55.2% of respondents

agreed that pension benefits meet basic needs, while 53.2% agreed that regular inflation adjustments are needed.

However, neutrality (32.6%) and disagreement (12-23%) across items reflect scepticism about the consistency of benefit adequacy. Respondents strongly acknowledged the negative impact of payment delays on real income, with 51.9% agreeing, aligning with Uzoh & Anekwe (2018), who documented erosion of real pension value due to delayed

disbursement and inflation. Funding structure and financial management received the highest approval ratings (over 60%), suggesting strong confidence in PTAD's financial stewardship, consistent with Morina & Grima (2022), who highlight the stabilising effect of conservative asset allocation in public pension management.

Table 3: Governance and Transparency

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Transparent governance structures	4	32	54	101	48
Internal controls prevent fraud	18	9	63	92	57
Timely communication	13	21	68	76	61
Accountable decision-making	14	27	58	68	72
Audit and regulation enforcement	8	23	61	93	54
Governance builds trust	6	31	59	91	52

Governance results are shown in Table 4.3, where respondents reported strong perceptions of transparent governance structures, adequate internal controls, and accountability mechanisms. Over 60% agreed that controls prevent fraud and mismanagement, while 57.3% agreed that information to stakeholders is timely and accurate.

However, significant neutrality (22-29%) suggests communication gaps or limited staff awareness of high-level governance processes, corresponding with Chawarura *et al.* (2025), who argue that governance confidence improves when internal communication is strengthened.

Table 4: Service Delivery and Efficiency

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Prompt payment processing	17	25	50	87	60
Accurate record-keeping	12	34	58	87	48
Complaint handling	13	23	69	80	54
Staff technical capacity	5	18	67	86	63
Digital platforms improved service	6	24	55	90	64
Pensioner satisfaction	11	22	61	91	54

Service delivery findings are presented in Table 4.4, showing that service delivery is among the highest rated dimensions, with most respondents agreeing that payments are processed promptly, verification and record-keeping are accurate, complaints are handled efficiently, and digital

platforms have improved service delivery. These findings align with the World Bank's (2023) report, which emphasises the importance of digitisation in improving the efficiency of pension administration in emerging economies.

Table 5: Investment and Sustainability

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Investment ensures long-term sustainability	6	17	58	91	67
Risk-return balance	12	17	73	67	70
Contribution to economic growth	11	35	57	83	53
Oversight ensures accountability	11	31	51	84	62
Inflation/exchange risk considered	10	15	68	95	51
Responsible investment supports sustainability	16	29	59	82	53

Investment-related perceptions are presented in Table 4.5, demonstrating strong confidence in investment sustainability, with 60-70% agreeing that investments balance risk and return, over 70% agreeing that pension funds contribute to economic growth, and 61% agreeing that

inflation and exchange rate risks are considered. These perceptions are consistent with OECD (2023) and Yermo & Severinson (2023), who highlight the role of pension funds in capital market development and macroeconomic stability.

Table 6: Spearman Rank Correlation

Variables	PCI	PAIP	GaT	SDE	IvS
PCI	1.000	0.024	-0.118	0.005	0.007
PAIP	0.024	1.000	0.117	-0.112	0.118
GaT	-0.118	0.117	1.000	-	-
SDE	0.005	-0.112	-	1.000	-0.135*
IvS	0.007	0.118	-	-0.135*	1.000

To examine relationships between pension dimensions, a Spearman correlation analysis was conducted, summarised

in Table 4.6, revealing key findings on coverage and inclusion, pension adequacy, governance and transparency,

service delivery and efficiency, and investment sustainability. Coverage and inclusion showed no significant correlation with other variables ($p > 0.05$), indicating that coverage initiatives operate in a silo, not integrated with governance, adequacy, or investment processes, consistent with global findings on fragmented pension outreach programs (World Bank, 2022). Pension adequacy exhibited weak, non-significant relationships ($r = 0.024-0.118$), perceived as largely operational and not tied to system-wide governance or investment structures. Governance and transparency had no significant correlations with adequacy or coverage, suggesting that governance improvements have not yet translated into perceived improvements in benefit adequacy or coverage. Service delivery and efficiency showed a significant but weak negative correlation with investment sustainability ($r = -0.135$, $p = 0.038$), implying that increased investment-related pressures may occasionally coincide with perceived operational strain. Investment sustainability was largely independent of other dimensions, except for service delivery, indicating compartmentalisation of investment decisions from day-to-day operations. These findings support the hypothesis that Nigeria's pension architecture operates in compartmentalised functional silos, limiting synergy between coverage, governance, adequacy, and investment sustainability.

Overall, the descriptive and correlational results indicate strong internal strengths in governance, service delivery, and investment sustainability, moderately positive adequacy outcomes affected by operational delays and inflationary pressures, and persistent inclusion deficits, particularly for informal workers, women, and rural populations, alongside weak inter-dimensional linkages suggesting a siloed system rather than an integrated pension architecture. These outcomes align with the broader literature on pension administration in emerging economies, including Nigeria's own system-level evaluations (PenCom, 2024; World Bank, 2022, 2023).

Discussion

The results of this study provide a nuanced understanding of the strengths, limitations, and structural dynamics shaping pension coverage, adequacy, inclusion, and sustainability in Nigeria's pension administration landscape. The findings reveal a pension system that has achieved significant institutional stability — particularly in governance, service delivery, and investment management — yet still struggles to translate these structural gains into broad-based coverage and adequate benefits for all categories of retirees. This duality reflects broader patterns observed in developing economies with fragmented labour markets and evolving pension structures (Holzmann & Palacios, 2024; World Bank, 2022).

A key insight emerging from the analysis is that coverage and inclusion remain the weakest dimensions. Although respondents showed moderately positive perceptions regarding PTAD's ability to cover eligible public workers, there remains a notable degree of uncertainty about the inclusion of informal-sector workers, rural residents, and marginalised groups. This aligns with global evidence showing that pension systems in lower-middle-income countries typically achieve high formal-sector participation but fail to extend meaningful coverage to informal workers, who often constitute 70-85% of the labour force (ILO,

2022). In Nigeria, where informal employment accounts for over 80% of the workforce, the limited uptake of the Micro Pension Plan (MPP) continues to hamper universal pension inclusion (Gasiokwu & Olorienu, 2025). The study's findings, especially the high incidence of neutral responses, suggest awareness gaps, administrative limitations, and unresolved socio-cultural barriers.

The analysis of pension adequacy shows a similar pattern of mixed progress. While respondents generally acknowledged the presence of inflation-based adjustments and the adequacy of funding mechanisms, they also expressed concerns regarding the real value of benefits and the adverse effects of delayed payments. This supports earlier research that identifies inflation volatility, fiscal constraints, low contribution density, and investment concentration in low-yield assets as significant threats to pension adequacy in Nigeria (Uzoh & Anekwe, 2018; PENCOM, 2024). The study also found that adequacy is not significantly correlated with governance, service delivery, or investment sustainability, indicating that improvements in administrative efficiency have not yet translated into improved benefit values. This disconnect suggests a structural separation between administrative processes and strategic benefit reforms.

The strong governance and transparency ratings recorded in this study highlight significant institutional gains attributed to administrative reforms, digitisation, and accountability frameworks introduced under PTAD and PENCOM. These results reinforce findings by Chawarura *et al.* (2025), who argue that strong governance improves stakeholder trust, reduces fraud, and enhances institutional legitimacy. However, the lack of significant correlations between governance and other pension dimensions — especially coverage and adequacy — suggests that governance reforms are compartmentalised. That is, transparency improvements alone are insufficient to address the broader challenges of pension sustainability and inclusion. Governance reforms must be integrated with systemic reforms in benefit design, investment policy, and outreach strategies.

Service delivery emerged as one of the most consistently positive dimensions, highlighting the effectiveness of PTAD's digitised verification processes, streamlined benefits administration, and improved record-keeping. These findings align with global evidence that digitisation significantly improves pension processing efficiency, reduces fraud, and enhances user satisfaction (World Bank, 2023). However, its weak and negative correlation with investment sustainability suggests operational pressures during periods of macroeconomic volatility. This is not unexpected, as pension administrators often face public demands during periods of rising inflation, currency fluctuations, or lower investment returns — trends documented by the OECD (2023).

Investment sustainability also recorded strong positive perceptions, indicating confidence in PTAD's and PENCOM's prudent financial management and adherence to risk-based investment frameworks. Respondents agreed that pension funds support broader economic development, supporting arguments by Yermo & Severinson (2023), who highlight the catalytic role of pension assets in deepening financial markets. However, the lack of strong correlation between investment sustainability and adequacy underscores a known issue in the global pension literature: sound fund management does not automatically translate into adequate

retirement income unless supported by robust contribution density, wage growth, and inflation-indexation policies.

The overarching theme emerging from this study is that Nigeria's pension system operates in functional silos, with limited synergy between administrative efficiency, investment policy, benefit adequacy, and coverage expansion. While each domain has achieved progress, its weak interconnections limit the overall impact on pension inclusion and adequacy. Such fragmentation mirrors broader governance problems within social protection systems in developing countries, where reforms tend to be partial and disconnected rather than holistic (Holzmann & Hinz, 2005; ILO, 2022) [16]. To achieve a more equitable, inclusive, and sustainable pension architecture, Nigeria must therefore transition from fragmented reforms to an integrated, lifecycle-based pension strategy aligned with global best practices.

Conclusion and Recommendations

This study evaluated perceptions of key dimensions within Nigeria's pension system, namely, coverage, adequacy, inclusion, governance, service delivery, and investment sustainability, drawing on responses from 239 staff members of the Pension Transitional Arrangement Directorate (PTAD) and the National Pension Commission (PENCOM). The findings highlight a pension framework that has made notable progress in governance, digitisation, accountability, and investment management. However, it continues to grapple with fundamental challenges related to coverage and benefit adequacy. Coverage, in particular, remains constrained, especially among informal-sector workers who form the bulk of Nigeria's labour force, leaving vast segments of the population without access to retirement security. Pension adequacy is further undermined by rampant inflation, frequent delays in payment disbursements, and the broader structural instabilities plaguing the economy, which erode the real value of benefits over time. While governance structures and service delivery mechanisms are perceived as robust and efficient, their positive impacts have not fully addressed these core deficiencies in coverage and in retirees' tangible income security. Investment practices, though viewed as stable and oriented toward growth, lack a strong connection to the practical needs of pensioners, failing to translate financial prudence into meaningful protection against economic volatility.

Overall, Nigeria's pension system embodies an institutionally robust yet socially limited architecture — one that is well-governed, digitally streamlined, and financially sound, but ultimately restricted in scope and, at times, insufficient in delivering genuine income security to those it serves. To foster a more inclusive and sustainable pension environment, there is an urgent need for structural integration that bridges coverage, adequacy, service delivery, and investment policy, ensuring that reforms are not isolated but mutually reinforcing.

Building on these insights, the study proposes a series of actionable policy recommendations to address the identified gaps and propel the system toward greater equity and resilience. First, to expand inclusion, a multi-channel micro pension strategy should be implemented, targeting the

informal sector through intensified public awareness campaigns aimed at workers in non-traditional roles, women, rural communities, and those in the gig economy. This could involve strategic partnerships with trade associations, cooperatives, religious organisations, and mobile-money providers to facilitate deeper enrollment, while simplifying contribution processes via user-friendly tools such as USSD codes, local agents, and digital wallets that reduce barriers to participation.

Second, enhancing pension adequacy requires introducing indexation and fiscal stabilisation measures, including institutionalising automatic inflation adjustments to safeguard benefits against real income erosion. Governments must demonstrate greater commitment by prioritising the prompt clearance of payment backlogs, and stronger linkages between wages and contributions should be established to boost contribution density and ensure that benefits more accurately reflect lifetime earnings.

Third, governance reforms should be integrated with efforts to improve coverage and adequacy, such as linking transparency systems to comprehensive beneficiary-tracking frameworks to identify better and include unregistered pensioners. This integration could also involve strengthening inter-departmental coordination among units responsible for benefits, compliance, investment, and information and communications technology (ICT), as well as developing outcome-based performance indicators that emphasise adequacy and equity, fostering a more accountable and responsive system.

Fourth, digitisation must be leveraged to expand coverage, with scaled-up digital onboarding and biometric registration initiatives deployed in rural areas through mobile enrollment teams. An integrated pension identification number system, linked to the National Identification Number (NIN), would help eliminate duplication, reduce exclusions, and streamline access, making the system more inclusive and efficient.

Fifth, investment policies need to be fortified to support long-term adequacy, achieved by diversifying portfolios into inflation-hedged assets such as infrastructure bonds, real estate investment trusts, and green financing options. Enhanced risk modelling would enable better responses to external shocks such as exchange rate fluctuations and inflationary pressures. At the same time, improved disclosure practices could build public confidence, encouraging higher voluntary contributions and greater stakeholder engagement.

Finally, to transcend siloed reforms, a holistic, lifecycle-based pension strategy should be developed, weaving together coverage, adequacy, governance, and investment into a unified national framework. This approach would align Nigeria's pension system with international standards, such as the social protection floors advocated by the International Labour Organisation (ILO) and the World Bank, ensuring that reforms address the entire lifecycle of workers — from entry into the labour force to retirement — while promoting intergenerational equity and economic stability. By adopting these interconnected measures, Nigeria can transform its pension system into one that not only upholds institutional integrity but also delivers broad-based security and prosperity for all citizens.

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