

IMPACT OF PUBLIC SECTOR REFORMS ON FINANCIAL ACCOUNTABILITY OF FEDERAL UNIVERSITIES IN THE NORTH- CENTRAL NIGERIA

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Abstract

Financial accountability is fundamental to promoting trust and transparency within public institutions. However, issues such as corruption and inefficiency continue to hinder these efforts. In response, various anti-graft initiatives and financial control reforms have been introduced, but the effectiveness of these reforms remains a key concern. This study evaluates the impact of public sector reforms on the financial accountability of federal universities in North-Central Nigeria. Using a survey research design, data were collected from bursary staff in eight federal universities within the region. The study employs Ordered Logistic Regression and Ordinary Least Squares (OLS) to assess the effectiveness of these reforms. The findings indicate significant positive effects of anti-graft legal frameworks and procurement laws on financial accountability respectively). However, the role of anti-graft agencies and financial reporting showed insignificant effects. The study concludes that anti-graft reforms, particularly legal frameworks and procurement laws, are crucial for ensuring financial accountability in Nigerian universities. Recommendations include strengthening collaboration between anti-graft agencies and university audit departments, mandating regular financial reviews, and instituting centralised procurement audits.

Keywords: Anti-graft Reforms, Financial Accountability, Federal Universities, Regulatory Compliance

Jel Classification Codes: H83, I23, H11, M41:

1.0 Introduction

Public sector reforms worldwide have aimed to improve accountability, transparency, and efficiency, responding to citizens' demand for responsible governance and fiscal responsibility (Hood, 1991; Pollitt & Bouckaert, 2017). In countries like the UK, New Zealand, and Canada, reforms have led to standardised accountability frameworks,

particularly in education, where institutions are held to rigorous standards of financial and operational transparency (Christensen & Læg Reid, 2007; Osborne & Gaebler, 1992). New Zealand's public sector overhaul in the late 20th century, for instance, emphasised devolved managerial responsibility and fiscal transparency, becoming a model for accountability reforms (Pallot, 1998). In the UK, the Higher Education Funding Council's oversight of universities is another example of reform success, underlining the role of regulatory frameworks in enhancing transparency and efficiency in higher education (Wall, 2020).

In Nigeria, public sector reforms have addressed inefficiencies and accountability challenges across government institutions, including universities, where financial mismanagement and resource diversion remain significant concerns (Ibrahim, 2022). Recent initiatives, such as the Treasury Single Account (TSA) and Integrated Payroll and Personnel Information System (IPPIS), were designed to centralize financial oversight and minimize leakages. However, challenges in public universities persist, marked by administrative inefficiencies, inadequate funding, and complex operational needs not fully addressed by these reforms (Omodero, 2020). While the TSA and IPPIS have introduced fiscal discipline, they face criticism for insufficiently addressing the distinct accountability requirements of universities and encountering resistance over concerns about institutional autonomy (Iloanya, 2020).

Existing studies offer mixed findings, while some research suggests TSA has reduced opportunities for corruption (Onuorah & Appah, 2012), other findings argue that centralized financial controls alone cannot address structural inefficiencies in universities (Okoye & Ezejiofor, 2014). Additionally, some studies revealed that resistance from university unions and insufficient monitoring mechanisms have hindered the full realization of public sector reforms' within the university system (Adelakun, 2020). However, this study investigates the effect of public sector reforms on the financial accountability of federal universities in Nigeria's north-central geopolitical zone. Specifically, it examines the impact of anti-graft and financial control reforms on accountability within these institutions. This research is essential for examining how effectively public sector reforms enhance accountability within Nigeria's public universities and whether policy adaptations can support better governance.

1.1 Research Hypotheses

The research hypotheses were stated as follows;

H₀₁: Anti-graft reforms have no significant effect on the financial accountability of federal universities in the north-central geo-political zone in Nigeria.

H₀₂: Financial control reforms have no significant effect on the financial accountability of federal universities in the north-central geo-political zone in Nigeria

2.0 Literature Review

The literature review analyzes the link between financial accountability and management reforms, examining how factors like anti-graft agencies, legal frameworks, procurement laws, and financial regulations enhance transparency, reporting, and regulatory compliance.

2.1 Conceptual Review

2.1.1 Financial Accountability in the University System

Financial accountability requires that individuals managing public resources provide transparent, accurate reports on fund utilization, adhering to established legal and accounting standards (Efunniyi, 2024; Ejalonibu, 2019). In Nigeria's university system, financial accountability is essential for responsible resource management. Given their reliance on substantial public and private funding, universities must report transparently on fund allocation, not only to prevent misappropriation but also to foster stakeholder trust. Clear reporting builds confidence among alumni, donors, and government agencies, encouraging ongoing support (Adamu, 2011; Ejalonibu, 2019; Vishwanath & Kaufmann, 2019).

Regulatory compliance and oversight by bodies such as the National Universities Commission (NUC) further enhance accountability by ensuring that universities meet required educational standards, ethical guidelines, and financial disclosure protocols. Additionally, regulatory oversight carried out internally by audit committees and externally by bodies like the Independent Corrupt Practices (ICPC) through their resident Anti-corruption and Transparency Unit (ACTU) serves as a safeguard against misuse of funds. This adherence to regulations minimizes the risk of financial mismanagement and protects the institution's reputation (Ejikeme, 2014; Ikeji et al., 2013). Transparency in financial reporting enables universities to communicate fund allocations clearly, building trust among students, staff, and the public by demonstrating responsible management (Omankhanlen, 2012).

2.1.2 Public Sector Reforms in Nigeria

Nigeria's public sector has faced corruption and mismanagement, prompting reforms to enhance transparency and accountability (Emmanson & Ajayi, 2021; Folarin, 2019). Key reforms include establishing the Office of the Auditor-General and the Fiscal Responsibility Act to promote fiscal discipline (Paul & Grace, 2020; Asuquo et al., 2014). The Treasury Single Account (2012) consolidates government funds, reducing irregularities (Eme et al., 2015), while the Public Procurement Act (2007) improves contract transparency (Adewole, 2014). Additionally, the Nigeria Extractive Industries Transparency Initiative (NEITI) manages revenue from extractive industries (Idemudia, 2013), and the Integrated Payroll and Personnel Information System (IPPIS) reduces payroll fraud (Folorunso & Simeon, 2021). This study will focus on anti-graft reform and financial control reforms.

2.1.3 Anti-Graft Reforms

Corruption erodes public trust in Nigeria, leading to financial losses and infrastructure issues. To combat this, various anti-graft agencies like the Economic and Financial Crimes Commission (EFCC) and Independent Corrupt Practices Commission (ICPC) investigate corruption and enforce accountability (Akabom et al., 2020; Okojie & Momoh, 2007). The Code of Conduct Bureau (1990) enforces ethical standards, while the Nigerian Financial Intelligence Unit (NFIU) detects suspicious transactions (Raimi et al., 2018). Nigeria's anti-graft laws include the "Money Laundering Act of 2004," which

targets money laundering; the “Advance Fee Fraud Act of 1995,” which tackles fraud; and the “Proceeds of Crime Recovery and Management Bill 2022,” which enhances asset recovery (Enkeleda, 2015; Oluwadayisi & Mimiko, 2020). The “Whistleblower Protection Act” of 2017 encourages reporting corruption, while the “Code of Conduct Bureau and Tribunal Act” maintains ethical standards among public officials (Lawanson & Babatunde, 2013).

2.1.4 Financial Control Reforms

Financial regulations guide resource management and reporting in Nigeria’s universities, enforcing fiscal responsibility. Institutions are required to align budgets with strategic goals and adhere to reporting standards for public funding and accreditation (Ekpo, 2016; Anochie & Duru, 2015). Compliance ensures transparency, accuracy, and the integrity of financial management (Chris & Amujiri, 2015). The “Public Procurement Act of 2007” governs procurement in Nigeria’s universities, ensuring transparency and fairness (Maduekeha & Obinwa, 2022). It established the National Council on Public Procurement and the Bureau of Public Procurement to oversee procurement. Regulations emphasize competitive processes and ethical standards, discouraging corruption and conflicts of interest (Ajator, 2017).

2.2 Theoretical Underpinning

According to Agency Theory, an agency relationship exists between the government (principal) and university administrators (agents), where administrators are entrusted with public funds to fulfil their institutional responsibilities (Jensen & Meckling, 1976). However, agency problems, such as fund mismanagement or corruption, can arise when the interests of the agents diverge from those of the principal (Eisenhardt, 1989).

In this study, the anti-graft legal framework and procurement laws serve as mechanisms to mitigate these agency problems. By enhancing financial oversight and transparency, these frameworks create accountability structures that align administrators’ actions with the government’s goals of responsible resource management and public interest (Bergen et al., 1992).

2.3 Empirical Studies

The following empirical studies were reviewed from Nigerian Authors’ Perspectives.

Akinyemi and Oke (2023) investigated the impact of automated financial control systems on accountability in Nigeria’s MDAs for the period 2022. Analyzing data from internal control officers and using structural equation modelling (SEM), they found a strong positive relationship between automated controls and accountability. Their findings also highlighted a need for ongoing system updates and robust training to maximize efficiency and mitigate technological challenges.

Dandibi et al., (2023) examined the effect of financial control on financial accountability in North East Nigeria's public sector for the period 2022. Utilizing a cross-sectional research design and multiple regression analysis, the researchers found that public sector audits and procurement processes significantly enhance financial accountability, whereas

budgetary control showed no significant effect. The study recommends strengthening audit procedures and improving procurement processes to bolster accountability.

Johnson and Amadi (2022) examined the role of risk management in public sector accountability in Nigeria for the period 2021. The study applied logistic regression, and the study focused on internal control as a preventive tool against fiscal indiscipline. Their study, based on data from audit departments, found a positive relationship between comprehensive risk management practices and improved accountability outcomes.

Paranata (2022) examined the impact of vested interests on anti-corruption initiatives in Indonesia, particularly during periods of neoliberal reform. The study was conducted in 2021 using a qualitative research approach and concluded that entrenched corrupt networks significantly impeded the advancement of the country's anti-corruption agenda. A key limitation of the study was its omission of research on internal audits within public sector contexts.

Baa (2022) analyzed the impact of public-sector reforms on industrial growth, focusing on organizations such as SAIL. The study was conducted from 2015 to 2021 and employed regression analysis and time-series modelling to evaluate the effects of reforms. The findings revealed that privatization and disinvestment strategies improved industrial profitability, although limited reform efforts were identified as barriers to sustained growth. A key limitation of the study was its exclusive focus on economic growth as the dependent variable.

Olaoye and Orimogunje (2022) investigated the relationship between Public Financial Management (PFM) and Economic Development in Nigeria over the period 2001 to 2020. Employing an ex-post facto research design, the study analyzed the correlation between government revenue, expenditure, public debt, and economic development. The analysis was based on data obtained from the Central Bank of Nigeria.

Oladimeji and Fashina (2021) analyzed the effectiveness of digital financial reporting systems in improving accountability across Nigerian MDAs in 2020. Using survey data from finance officers and regression models, they concluded that digital reporting enhances transparency but highlighted challenges with staff training and system compatibility.

Avery and Obah (2018) investigated financial controls' effects on accountability within Nigeria's public sector for the period 2017, focusing on the Bayelsa State Board of Internal Revenue. Using a mixed-methods approach and linear regression analysis, they found an insignificant positive link between internal controls and accountability, highlighting a tendency to prioritize audits over broader control systems.

Raimi et al. (2018) explored the roles of Nigeria's Independent Corrupt Practices and Other Related Offences Commission (ICPC) and the Economic and Financial Crimes Commission (EFCC) in enhancing accountability across sectors during the period 2017. The study utilized descriptive statistics to examine administrative and judicial challenges impeding the effectiveness of these agencies. Findings revealed that overlapping functions between the ICPC and EFCC led to duplication of efforts, inter-agency conflicts, and inefficiencies in tackling corruption and ensuring accountability. Wakiriba

et al. (2017) examined the impact of financial controls on financial management in Kenya's public sector, with a focus on Mirangine Sub-County in Nyandarua County. The study was conducted in 2016 using a descriptive research design and revealed the presence of an effective internal control system. However, weaknesses in implementation were identified, attributed to limited internal audit coverage across departments.

Olanrewaju et al. (2020) investigated the correlation between organizational structures and public sector performance in Nigeria. The study, conducted in 2019, employed a mixed-methods approach, utilizing questionnaire surveys and interviews, which were analyzed through descriptive and inferential statistics as well as Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings revealed a positive relationship between communication, accountability, internal control, and public sector performance. However, a key limitation of the study was the small sample size for the interviews.

Leyira and Temple (2018) explored the impact of IPPIS on reducing ghost workers in Nigeria's public sector. The historical research, conducted in 2017, found that IPPIS significantly reduced fraudulent activities related to payroll but noted the overreliance on historical research methods as a limitation.

Agboola (2018) evaluated the effectiveness of the Integrated Personnel and Payroll Information System (IPPIS) in addressing the ghost worker syndrome within Nigeria's public sector, specifically focusing on the Federal Inland Revenue Service (FIRS). The survey was conducted in 2017 and found that IPPIS could significantly mitigate the issue of ghost workers. However, a key limitation of the study was its narrow focus on a single organization, which restricts the generalizability of the findings.

Nnamani et al. (2016) investigated the effect of financial control systems on accountability in Nigeria's public sector. The study was conducted in 2016 and used a survey research design with data collected from Ministries, Departments, and Agencies (MDAs), which was analyzed through descriptive and inferential statistics. The findings revealed that financial control systems positively influence accountability by enhancing transparency and reducing corruption.

3.0 Methodology

This study adopts a survey research design and focuses on the North Central region of Nigeria, comprising eight federal universities: Federal University of Agriculture Makurdi, Federal University of Health Sciences Otuorkpo, Federal University Lokoja, University of Ilorin, Federal University Lafia, Federal University of Technology Minna, University of Jos, and University of Abuja (Ogunmodede et al., 2021). The target population includes staff members from the bursary departments of these universities. A two-stage sampling procedure is employed. In the first stage, stratified sampling is used to divide bursary departments across the selected universities into strata to ensure administrative efficiency. In the second stage, random sampling is conducted to select staff members, particularly those in financial and audit roles, using probability proportional to the number of units within each bursary department. The Taro Yamane model was applied to calculate a final sample size of 278 for the study.

$$n = \frac{N}{1 + 912(e)^2} \dots\dots\dots (1)$$

n= sample size N= Population

e = the degree of accuracy expressed as a proportion (0.05)

$$n = 912 / (1 + 912(0.05)^2)$$

$$n = 278$$

Proportionate stratified random sampling was selected to ensure that all identified strata the bursary departments of each university are represented in the sample, enhancing the accuracy of population representation. The sample size for each university was determined by applying the proportion of its bursary staff to the total bursary population, ensuring that larger departments receive proportionately greater representation in the sample. The breakdown is shown in Table 1.

Table 1: Sample Size Apportionment of Bursary Department and Selection Approach

| Bursary Departments | Population | Proportionate Stratified Random Sampling | Sample Size |
|---|------------|--|-------------|
| 1. Federal University of Agriculture Makurdi | 119 | $119/912 \times 278$ | 36 |
| 2. Federal University of Health Sciences Oturkpo | 107 | $107/912 \times 278$ | 33 |
| 3. Federal University Lokoja | 131 | $131/912 \times 278$ | 40 |
| 4. University of Ilorin | 125 | $125/912 \times 278$ | 38 |
| 5. Federal University Lafia | 94 | $94/912 \times 278$ | 29 |
| 6. Federal University of Technology Minna | 113 | $113/912 \times 278$ | 34 |
| 7. University of Jos | 87 | $87/912 \times 278$ | 27 |
| 8. University of Abuja | 136 | $136/912 \times 278$ | 41 |
| Total | 912 | | 278 |

Source: Authors' Computation, 2024

3.1 Model Specification

The model developed by Nnamani et al., (2016) was adapted and refined to align with the specific objectives of this study. Financial Accountability, the dependent variable, is represented by two proxies: (1) transparency and financial auditing, and (2) regulatory compliance and oversight functions. Below is the specification of the ordered logistic regression model based on the given equations:

$$\text{"logit"} (P(Y_i \leq j)) = \alpha_j - (\beta_1 AGA + \beta_2 AGLW + \beta_3 PRL + \beta_4 FIR)$$

Where:

Y_i = ordinal dependent variable (e.g., TAFR, RCOF, FACC),

j = categories of the ordinal dependent variable,

α_j = cut-off points (thresholds) for category j ,

β_k = coefficients of the independent variables AGA, AGLW, PRL, FIR,

$P(Y_i \leq j)$ = probability of Y_i falling at or below category j .

Model Formulations:

$$\begin{aligned} (TAFR): \text{"logit"} (P(TAFR \leq j)) \\ = \alpha_j - (\beta_1 AGA + \beta_2 AGLW + \beta_3 PRL + \beta_4 FIR) + \epsilon. \end{aligned}$$

$$\begin{aligned} (RCOF): "logit" (P(RCOF \leq j)) \\ &= \alpha_j - (\beta_1 AGA + \beta_2 AGLW + \beta_3 PRL + \beta_4 FIR) + \epsilon. \\ (FACC): "logit" (P(FACC \leq j)) \\ &= \alpha_j - (\beta_1 AGA + \beta_2 AGLW + \beta_3 PRL + \beta_4 FIR) + \epsilon. \end{aligned}$$

Where:

FACC = Financial Accountability of Federal universities (Constructed composite parameter index of Transparency and Financial Reporting, and Regulatory Compliance and Oversight Function)

TAFR = Transparency and Financial Reporting of Federal Universities (Dependent Variable)

RCOF = Regulatory Compliance and Oversight Function of Federal universities

β_0 = Constant

AGA = Anti-graft Agencies

AGLW = Anti-graft Legal Framework

PRL = Procurement Laws

FIR = Financial Regulations

β_1 - β_4 = The coefficient of the independent variables

ϵ = error term

***a priori* Expectations:**

All coefficients are expected to be positive, indicating that each independent variable is presumed to contribute positively to financial accountability.

3.2 Measurement of Variables

Variables will be assessed using structured quantitative methods. For Financial Accountability, responses will be collected on a Likert scale of 1-5 to reflect the perceived effectiveness of the elements in improving transparency and accountability.

3.2 Model Estimation Techniques

The study employed Ordered Logistic Regression for the two sub-components of the dependent variable, financial accountability, due to the ranked nature of the research instrument, which included more than two ordered response categories in the survey (Greene, 2012). To address the transformation of the dependent variable into a continuous measure, the Ordinary Least Squares (OLS) estimator was also applied, achieved by aggregating the index of its sub-components (Wooldridge, 2016).

4.0 Data Presentation, Analysis and Discussion of Findings

4.1 Descriptive Result

Figure 1 presents the descriptive analysis of socio-demographic indicators, illustrating the distribution of university staff who participated in the study.

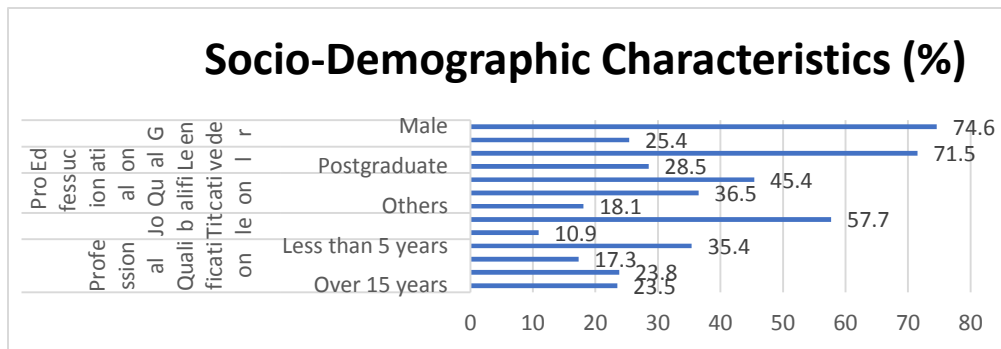


Figure 1: Socio-Demographic Characteristics of the Respondents (%)

Figure 1 presents an overview of the qualifications and experience of Bursary department staff. A majority (71.5%) hold graduate degrees, while 28.5% have postgraduate qualifications. Professionally, 45.4% are affiliated with ICAN, and 36.5% with ANAN, with most respondents (87.3%) occupying senior or middle management roles. Experience is varied, with 35.4% having less than 5 years and 23.5% exceeding 15 years of service, indicating a balanced tenure within the department.

Preliminary Estimation Techniques

Tables 2 and 3 show the preliminary estimation techniques such as Skewness, Kurtosis, and correlation matrix with correlation coefficients and their respective p-values which are utilized in scrutinizing the distribution of individual variables.

Table 2: Skewness and Kurtosis Joint Normality Test

| Normality Test Variables | Skewness Statistic | Kurtosis Statistic |
|--|--------------------|--------------------|
| Financial Accountability | 0.0239 | 0.0008 |
| Transparency and Financial Reporting | 0.0000 | 0.1173 |
| Regulatory Compliance and Oversight Function | 0.0002 | 0.4365 |
| Anti-Graft Agencies | 0.0000 | 0.0000 |
| Anti-Graft Legal Framework | 0.0021 | 0.9169 |
| Procurement Laws | 0.0072 | 0.9798 |
| Financial Reporting | 0.0466 | 0.3344 |

Source: Authors' Computation (2024)

The results of the skewness and kurtosis joint normality test in Table 2 suggest that most variables exhibit distributions close to normal, with low skewness indicating symmetry and kurtosis values near zero, pointing to a lack of extreme outliers. This near-normality implies that the variables are well-suited for parametric statistical analyses, as they meet the normality assumption, enhancing the reliability of correlation, regression, and other inferential tests used in the study.

Table 3: Pairwise Correlation Matrix

| Variables | FACC | TAFR | RCOF | AGA | AFLW | PRL | FIR |
|-----------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------|
| FACC | 1.000 | | | | | | |
| TAFR | 0.5538 (0.000) | 1.000 | | | | | |
| RCOF | 0.5661 (0.000) | 0.4256 (0.000) | 1.000 | | | | |
| AGA | 0.5821 (0.000) | 0.4503 (0.000) | 0.4655 (0.000) | 1.000 | | | |
| AGLW | 0.6984 (0.000) | 0.5504 (0.000) | 0.5812 (0.000) | 0.5284 (0.000) | 1.000 | | |
| PRL | 0.4128 (0.000) | 0.6097 (0.000) | 0.6086 (0.000) | 0.5356 (0.000) | 0.6097 (0.000) | 1.000 | |
| FIR | 0.4293 (0.000) | 0.5931 (0.000) | 0.6716 (0.000) | 0.513 (0.000) | 0.6804 (0.000) | 0.4278 (0.000) | 1.000 |

Source: Authors' Computation, (2024).

Table 3 displays a pairwise correlation matrix for variables linked to financial reforms in federal universities in Nigeria. All correlation coefficients are below 0.8, indicating no severe multicollinearity issues in regression analysis (Kennedy, 2008).

Effect of Public Sector Reforms on Transparency in Financial Reporting

This sub-section presents the ordered logistic regression results of the effect of public sector reforms on transparency in the financial reporting of federal universities in Nigeria. This is presented in Table 4.

Table 4: Ordered Logistic Regression Result for Transparency in Financial Reporting

| Variables | Coefficient | Std. Err. | T | p-value |
|----------------------------------|-------------|-----------|-------|---------|
| Anti-Graft Reforms | | | | |
| AGA | 0.071 | 0.147 | 0.48 | 0.629 |
| AGLW | 0.506 | 0.209 | 2.14 | 0.031 |
| Financial Control Reforms | | | | |
| PRL | 0.581 | 0.267 | 2.18 | 0.029 |
| FIR | -0.213 | 0.356 | -0.60 | 0.549 |
| LR chi2(5) | = | 246.62 | | |
| Prob > chi2 | = | 0.0000 | | |
| Pseudo R2 | = | 0.1918 | | |

Source: Authors' Analysis, (2024).

Table 4 shows that financial reporting (FIR) is not significant and also negatively impacts transparency in federal universities' financial reporting in North-Central Nigeria, while anti-graft agencies (AGA), the anti-graft legal framework (AGLW), and procurement laws positively influence it. Notably, the anti-graft legal framework (AGLW) and procurement laws (PRL) are statistically significant, with AGLW having a positive

coefficient of 0.506 ($p = 0.031$), indicating each unit increase in AGLW corresponds to a 0.506% increase in transparency. PRL also has a significant positive effect, with a coefficient of 0.581 ($p = 0.029$). The LR chi-squared statistic of 246.62 ($p = 0.0000$) confirms joint significance in predicting transparency. The Pseudo R^2 of 0.1918 indicates that approximately 19.18% of the variation in transparency in financial reporting is accounted for by the model, which includes Anti-Graft and Financial Control Reforms.

Table 5: Ordered Logistic Regression Result for Regulatory Compliance and Oversight Function

| Variables | Coefficient | Std. Err. | T | p-value |
|----------------------------------|-------------|-----------|-------|---------|
| Anti-Graft Reforms | | | | |
| AGA | -0.025 | 0.187 | -0.13 | 0.896 |
| AGLW | 0.229 | 0.072 | 3.19 | 0.001 |
| Financial Control Reforms | | | | |
| PRL | 0.429 | 0.210 | 2.05 | 0.047 |
| FIR | 0.893 | 0.370 | 2.41 | 0.016 |
| LR chi2(5) | = | 219.16 | | |
| Prob > chi2 | = | 0.0000 | | |
| Pseudo R2 | = | 0.1781 | | |

Source: Authors' Analysis, (2024).

Table 5 reveals that anti-graft agencies (AGA) are not significant and negatively impact regulatory compliance in federal universities in North-Central Nigeria, while the anti-graft legal framework (AGLW), procurement laws (PRL), and financial reporting (FIR) positively influence it. AGLW has a significant positive effect with a coefficient of 0.229 ($p = 0.001$), indicating that each unit increase in AGLW enhances regulatory compliance by 0.229%. PRL shows a positive effect with a coefficient of 0.429 ($p = 0.047$), and FIR has a notable impact at 0.893 ($p = 0.016$). The LR chi-squared statistic of 219.16 ($p = 0.0000$) confirms these variables' joint significance in predicting regulatory compliance.

Table 6: OLS Regression Result with Robust Standard Error for Financial Accountability

| Variables | Coefficient | Std. Err. | T | p-value |
|----------------------------------|-------------|-----------|------|---------|
| Anti-Graft Reforms | | | | |
| AGA | 0.062 | 0.05 | 1.25 | 0.214 |
| AGLW | 0.084 | 0.036 | 2.35 | 0.022 |
| Financial Control Reforms | | | | |
| PRL | 0.143 | 0.053 | 2.69 | 0.008 |
| FIR | 0.079 | 0.075 | 1.06 | 0.290 |
| Constants | 0.238 | 0.134 | 1.78 | 0.077 |
| F (12, 246) | = | 84.44 | | |
| Prob > F | = | 0.0000 | | |
| R^2 | = | 0.7515 | | |

Source: Authors' Analysis, (2024).

Table 6 shows an R-squared of 0.7515, indicating that 75.15% of the variation in financial accountability in federal universities in North-Central Nigeria is explained by

anti-graft agencies (AGA), the anti-graft legal framework (AGLW), procurement laws (PRL), and financial reporting (FIR). The F-statistic of 84.44 ($p = 0.0000$) confirms the model's overall significance. Notably, AGLW (coefficient = 0.084, $p = 0.022$) and PRL (coefficient = 0.143, $p = 0.008$) significantly predict financial accountability, while AGA and FIR do not, with p-values exceeding 0.05.

Joint Coefficient Wald Test (Composite Model Estimation)

Table 7: Joint Coefficient Wald Test

| Variables (Factors) | Chi-Square statistics | Probability |
|--|-----------------------|-------------|
| Anti-Graft Reforms: $C(AGA) = C(AGLW) = 0$ | 9.366 | 0.009 |
| Financial Control Reforms: $C(PRL) = C(FIR) = 0$ | 16.668 | 0.001 |

Source: Authors' Computation, (2024)

Table 7 revealed the Wald test value of the chi-squared distribution with its associated p-values. The significant Chi-squared statistics reject the null hypothesis in favour of all the characteristics used in the study. Hence, the results identified that the joint coefficient Wald test for all the public sector reforms (anti-graft and financial reporting) is statistically significant, implying that public sector reforms indicators with joint coefficients of 9.366, and 16.668 contributed positively and significantly with probability values of 0.009, and 0.001 respectively, to the financial accountability of federal universities in north-central Nigeria. Thus, both null hypotheses are rejected, supporting the alternative hypotheses presented earlier.

5. Discussion of Findings

The findings of this study indicate that anti-graft reforms, particularly the establishment and enforcement of legal frameworks alongside oversight agencies, collectively influence financial accountability within public sector institutions in Nigeria. These reforms are designed to combat corruption, enhance regulatory compliance, and foster transparency, thereby contributing to improved financial oversight and the responsible management of public funds. The consistent statistical significance of anti-graft legal frameworks across all sub-models underscores their critical role in embedding ethical financial practices within institutions and deterring fraudulent behaviour by defining explicit operational guidelines and repercussions for non-compliance.

Although the statistical significance of anti-graft agencies may vary across different models, their importance remains evident in the continual monitoring of financial activities and ensuring adherence to established regulations. These findings align with prior research conducted by Shah et al. (2022), Gomez-Bezarez et al. (2017), Hendriks (2017), Saputra (2021), and Gbatu (2023), which emphasize the positive correlation between legal frameworks and enhanced financial accountability.

The relevance of these reforms in safeguarding public resources, promoting their efficient use, and rebuilding public confidence in governmental resource management is supported by Agency Theory. This theory posits that agents may not inherently act in the best interests of principals, potentially leading to opportunistic behaviours and resource mismanagement (Armstrong et al., 2022). The implementation of anti-graft measures,

encompassing robust legal frameworks and vigilant oversight agencies, serves as a mechanism to align the interests of agents with those of the principals, effectively mitigating agency problems (Filatotchev & Nakajima, 2021).

The study further reveals that financial control reforms, particularly in the areas of procurement legislation and financial reporting significantly influence financial accountability in federal universities located in north-central Nigeria. These reforms are essential in fostering transparency, enhancing resource management, and ensuring adherence to financial regulations, thereby improving institutional oversight. Procurement laws, in particular, have demonstrated consistent positive effects across all sub-models, promoting transparent and competitive processes that effectively mitigate corruption and financial mismanagement.

Financial reporting, another key reform, consistently shows significant impacts on regulatory compliance and oversight within sub-component models. This highlights its role in enabling stakeholders to assess resource utilization, thus reinforcing trust through accurate and comprehensive disclosures. Collectively, these financial control reforms align institutional financial operations with regulatory standards and strategic objectives, embedding a culture of accountability within the universities. These outcomes are corroborated by previous studies conducted by Gadinabokao and Daw (2013), Mwambere and Kosimbei (2022), and Yussuf and Abdul (2022), which similarly underscore the positive effects of financial control reforms on enhancing accountability.

These findings can be supported by Agency Theory, illustrating how such reforms align the interests of management (agents) with those of stakeholders (principals) by providing regulatory tools and frameworks that enhance oversight mechanisms (Eisenhardt, 1989). The beneficial impacts of procurement laws on promoting transparency and competition are especially notable for reducing moral hazard and curbing opportunistic behaviours by enforcing strict compliance and limiting opportunities for financial mismanagement and corruption (Mwambere & Kosimbei, 2022; Yussuf & Abdul, 2022).

6. Conclusion and Recommendations

The study concludes that anti-graft reforms are crucial for enhancing financial accountability in federal universities. Specifically, the anti-graft legal framework plays a significant role in improving financial oversight, while procurement laws also enhance transparency. The positive statistical coefficients associated with these reforms underscore their effectiveness in addressing agency issues, as described by the theory, as they impose legal consequences for non-compliance, incentivizing administrators to act in the government's best interest. Strengthening these frameworks and enforcing procurement laws are thus critical strategies for mitigating agency risks and ensuring transparency and accountability within north-central Nigeria's federal universities (Shapiro, 2005). Based on the findings from this study the following recommendations are made:

- i. Given the positive significant influence of anti-graft agencies on financial accountability, universities need to strengthen collaboration between these agencies and university internal audit departments. Also, regular audits and

- financial reviews should be mandated, with findings reported directly to anti-graft agencies to ensure that any financial misconduct is promptly addressed.
- ii. Also, considering that financial control reforms have a positive significant influence, on the financial accountability of universities, it should implement more rigorous procurement audits and establish a centralized procurement monitoring system. Universities should also establish periodic financial reporting reviews, where internal auditors assess the accuracy and transparency of financial statements before submission to external regulators.

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