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Impact of Internal Control System on Prevention of Fraud in the Public Sector in North Central Nigeria

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Abstract

This paper investigates the impact of internal control systems in limiting fraud within Nigeria's public sector, with a special focus on critical features such as asset protection, segregation of duties, and approval processes. The study also evaluates how these internal controls effect whistle-blowing initiatives, accountability initiatives, ethical standards, and management integrity. Data were collected from 300 participants across Nigeria's North Central area, and multiple regression analysis was utilized to examine the correlations between internal control mechanisms and fraud prevention techniques. The results demonstrate a strong influence of internal control systems on all dimensions of fraud deterrence. Notably, a high positive association was seen with whistle-blowing policies ($R = 0.931$, $p < 0.05$), accountability ($R = 0.930$, $p < 0.05$), ethics policy ($R = 0.934$, $p < 0.05$), and management integrity ($R = 0.947$, $p < 0.05$). These findings correlate with prior literature, emphasizing the crucial importance of internal control mechanisms in minimizing fraud and increasing accountability within the public sector. The study continues by underlining the significance of enhancing internal control mechanisms to ensure transparency, ethical conduct, and accountability. It suggests boosting control resources, promoting ongoing professional development, providing strong whistle-blower protections, and fostering a culture of honesty. Additionally, regular audits and evaluations of these systems are proposed to further safeguard against fraud and maintain public confidence in government.

Keyword: Internal control systems, fraud prevention, public sector, governance, accountability.

Introduction

Fraud in the public sector undermines governance, erodes trust, and diverts resources from essential services. It often involves financial misconduct such as embezzlement, inflated contracts, and misappropriation of funds, significantly hindering Nigeria's economic growth (Oke & Offoha, 2021). While fraud exists globally, its impact is especially severe in emerging economies like Nigeria, where weak enforcement fosters a culture of impunity (Onuora, 2018).

Nigeria loses an estimated ₦1 trillion annually to public sector fraud, with the North Central region being among the worst affected. Reports indicate that over 30% of fraud cases investigated between 2015 and 2020 occurred in this region, highlighting the urgent need for stronger internal controls (ICPC, 2021). Despite anti-corruption efforts, weak accountability and enforcement continue to enable financial misconduct (Maulidi & Ansell, 2021).

Internal control systems play a crucial role in safeguarding assets, ensuring compliance, and preventing fraud (Akhmetshin et al., 2018). However, their effectiveness in Nigeria's public sector, particularly in the North Central region, remains inadequate. This study examines how internal controls can be strengthened to curb fraud, filling a gap in research that has largely overlooked public sector dynamics in this region.

Research Objectives

The main objective of this study is to examine Impact of internal control system on prevention of fraud in the public sector in north central Nigeria. And the specific objectives of this study are to:

i. To investigate the impact of internal control system on whistle blowing policy of North Central Nigeria's Public Sectors.

ii. To evaluate the effect of internal control system on accountability of Nigeria's Public Sectors.

iii. To examine the impact of internal control system on ethics policy of Nigeria's Public Sectors.

iv. To determine the effect of internal control system on management integrity of Nigeria's Public Sectors.

Citation: Aminat Arike ARIYO-EDU. Impact of Internal Control System on Prevention of Fraud in the Public Sector in North Central Nigeria 1(2), 66-83.

Research Hypotheses

Ho_1:- Internal control system have no significant impact on whistle blowing policy of Nigeria's Public Sectors.

H_{o2} :- Internal control system have no significant effect on accountability of Nigeria's Public Sectors.

H_{o3} :- Internal control system have no significant impact on ethics policy of Nigeria's Public Sectors.

H_{o4} :- Internal control system have no significant impact on management integrity of Nigeria's Public Sectors.

Internal Control Systems

Internal control systems are extensive frameworks implemented by firms to guarantee the precision of financial reporting, adherence to legal and regulatory standards, and the attainment of operational goals. These systems comprise an ongoing series of protocols aimed at risk management, protection of both physical and intangible assets, and promotion of transparency. According to COSO, effective internal controls comprise several interconnected components: control environment, risk assessment, information and communication, control activities, and monitoring. Collectively, these elements establish a framework that reduces process variability and improves accountability (Bekele, 2018; Abiodun, 2020). This methodical technique guarantees that organizational resources are effectively monitored and allocated, therefore playing a vital role in fraud prevention and operational efficiency.

Fraud

Fraud entails deliberate deception or misrepresentation designed to get unauthorized advantages, whether monetary or otherwise. It can emerge in multiple forms—financial statement fraud, occupational fraud, investment fraud, and commodities fraud—each exploiting distinct vulnerabilities such as information asymmetry and inadequate oversight (James, 2024; Young, 2020). Fraud in the public sector leads to financial losses, erodes public trust, and obstructs the efficient provision of important services. Public sector fraud manifests in various forms, such as procurement fraud, payroll fraud, asset theft, and cybercrime, each illustrating the intricate issues faced by government-controlled institutions (Husin, 2023).

Internal Control and Fraud Prevention

Internal control systems are crucial to both preventing and detecting fraud. Key processes such as the segregation of roles, authorization and approval procedures, and continual monitoring ensure that no single people or process can undermine the integrity of financial transactions. For example, splitting tasks across multiple personnel decreases the danger of illegal actions, while regular audits and performance reviews assist discover anomalies and potential fraudulent activities at an early stage (Kim et al., 2020). Additionally, the deployment of whistleblower systems provides an anonymous conduit for reporting questionable activity, thus boosting the organization's defense against fraud (Ceva & Bocchiola, 2020).

Public Sector

Public Sector public sector, often referred to as the state sector, is the backbone of a nation's infrastructure and governance, consisting of firms and institutions supported by the government to supply key services and achieve social and economic goals. Since fraud prevention directly affects governance, public trust, and resource allocation, the stakes are especially high in the public sector. Government institutions and state-owned enterprises operate under a mission to supply key services—such as healthcare, education, and infrastructure—making the integrity of their operations critical to national growth and social welfare (Rosenbloom, 2022; Arockiasamy et al., 2022). Weak internal controls in these situations can lead to major financial theft and erosion of accountability, underlining the requirement of specific internal control systems that address the unique issues faced by public enterprises.

Theoretical Review

This study integrates two complimentary theories—the Fraud Triangle Theory and Agency Theory—to create a comprehensive framework for understanding fraud prevention in Nigeria's public sector.

Fraud Triangle Theory

Developed by Donald R. Cressey (1953), the Fraud Triangle Theory states that fraud arises when three factors—pressure, opportunity, and rationalization—converge. Pressure occurs from financial hardship or excessive expectations, opportunity exists when poor internal controls allow wrongdoing, and rationalization enables individuals to rationalize unethical activity. In Nigeria's public sector, where financial restrictions and performance pressures are frequent, insufficient internal controls offer chances for fraud. Strengthening these controls—through role segregation, monitoring, and risk management—can diminish both the desire and ability to rationalize fraudulent conduct. Thus, the theory underscores the need for proactive measures to mitigate fraud risks.

Agency Theory

Jensen and Meckling's (1976) Agency Theory stresses disputes between principals (government and taxpayers) and agents (public officials). When agents prioritize personal interests over public duty, difficulties like moral hazard and knowledge asymmetry occur, raising fraud risks. Effective internal controls help bridge this gap by enforcing oversight, aligning incentives, and ensuring accountability. Regular monitoring and risk assessments act as preventive measures, ensuring public officials act in the best interests of the state and its citizens. While the theory implies self-interest, it underlines the significance of ongoing supervision and ethical governance.

Fraud Triangle and Agency Theory gives a complete framework for assessing fraud prevention in Nigeria's public sector. The Fraud Triangle highlights behavioral causes of fraud, highlighting the need to reduce pressure, limit opportunity, and discourage reasoning. Meanwhile, Agency Theory encourages matching public officials' incentives with ethical standards through monitoring and incentive-based regulations.

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Empirical Review

Taufik (2019) evaluated the impact of internal controls on governance and fraud prevention in Bengkalis District using Partial Least Squares (PLS) analysis with 93 respondents from 34 government entities. The study indicated that robust internal controls greatly minimize fraud while promoting good governance. It determined that ongoing investment in control methods is needed for effective fraud prevention.

Onyefulu (2020) evaluated internal control performance in Anambra State's public sector using a survey of accounting staff. Findings found that inadequate staffing and skills inhibited fraud detection. The study concluded that enhancing accounting systems and record-keeping will boost fraud prevention.

Setyaningsih (2020) studied internal controls, organizational culture, and accounting systems in Indonesia's agriculture industry using observations, interviews, and document analysis of 70 respondents. The study indicated that effective controls and a strong business culture significantly reduced fraud. It advised investing in technological and cultural reforms to increase fraud prevention.

Doka et al. (2021) investigated internal control mechanisms in public tertiary institutions in Taraba State by a descriptive survey of 64 audit and bursary staff. The study concluded that risk assessment, monitoring, and independent reviews greatly curb fraud. It concluded that institutions should increase these procedures for greater fraud prevention.

Joseph and Isiaka (2022) investigated listed financial organizations in Nigeria using Partial Least Squares Structural Equation Modeling (PLS-SEM) with data from 284 respondents. Results showed that the control environment and monitoring positively increased fraud prevention, while information flow and control activities had smaller effects. The report recommends enhancing monitoring and regulatory structures.

Ibanga and Etim (2022) performed a study at Akwa Ibom State Polytechnic with 92 respondents to examine internal control efficiency. Findings demonstrated that all control components—

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environment, risk assessment, control activities, and communication—play a crucial role in fraud prevention. The study indicated that regular audits and stricter personnel selection are critical for minimizing fraud.

Daninya et al. (2024) evaluated fraud management in Nigeria's Accountant General Office using a survey of 184 respondents, assessed via regression approaches. Findings suggested that risk assessment and control actions greatly impact fraud prevention, whereas management compliance was limited. The study advocated keeping independent internal audit activities.

Vutumu et al. (2024) investigated internal control efficiency in Nigerian ministries using a cross-sectional survey with 385 respondents and PLS-SEM analysis. Results showed that risk assessment, information flow, and monitoring positively influence fraud prevention, whereas control actions faced implementation issues. The study recommends enhancing control mechanisms and communication protocols to strengthen fraud management.

Methodology

This study employed a quantitative survey design to examine the impact of internal control systems on fraud prevention in the public sector in North Central Nigeria. The survey method was chosen because it enables the collection of original data from a large population, as advocated by Story and Tait (2019) and Mweshi and Sakyi (2020), and is well-suited for descriptive analysis of complex social phenomena.

The target population comprised from accounting, upper management, and auditing personnel from selected public sector ministries across the North Central region of Nigeria. Specifically, ten respondents were purposively selected from each of the five ministries in every state within the region, resulting in a total sample size of 350 respondents. The purposive sampling technique was used to ensure that only knowledgeable individuals directly involved in internal control processes and fraud prevention were included, thereby enhancing the relevance and accuracy of the data.

Primary data were collected using a structured questionnaire designed to address the research objectives and provide detailed insights into the internal control mechanisms and fraud prevention practices. The questionnaire included a variety of question types—including rating scales and open-ended items—to capture comprehensive responses from the participants.

Data analysis was performed using SPSS (Version 23). Descriptive statistics, such as frequency distribution tables, means, and standard deviations, were used to summarize and present the quantitative data, ensuring that the findings were easily understandable. Additionally, ANOVA was employed to establish the level of significance of the established regression models, while a multiple linear regression model was applied to test the study's hypotheses and examine the relationships between internal control components and fraud prevention outcomes. The research findings were interpreted based on the evidence provided by these statistical analyses, which collectively ensure that the study's conclusions are robust, scientifically sound, and replicable.

Model Specification

This study employs a multiple regression model to assess the impact of key internal control components on fraud prevention in the public sector. The dependent variable is "Prevention of Fraud in the Public Sector," which is operationalized through four dimensions: Whistle Blowing Policy (WBP), Accountability (ACC), Ethics Policy (ETP), and Management Integrity (MGI). Each dimension will be analyzed separately as a dependent variable.

The independent variables are defined as follows: Safeguarding of Assets (SOA), Segregation of Duties (SOD), Approval and Authorization (AA), and Organizational Structure (OS). The general form of the regression model is specified as:

$Y= \beta 0+ \beta 1X1+\beta 2X2+\beta 3X3+ \varepsilon$

In this equation,

Y represents one of the dependent variables (WBP, ACC, ETP, or MGI);

β_0 is the intercept; β_1, β_2, β_3, and β_4 are the coefficients that measure the effect of each independent variable on Y;

ε is the error term.

This model specification is designed to quantify how each internal control component contributes to the prevention of fraud in Nigeria's public sector, directly addressing the study's objectives

Results and Discussion

Objective 1: To investigate the Impact of Internal Control Systems on the Whistle-Blowing Policy in Nigeria's Public Sector

H_{01}: Internal control system has no significant impact on whistle blowing policy of North Central Nigeria's public sectors.

Table 4.1a: Model Summary of Internal control system and whistle blowing policy of North Central Nigeria's public sectors.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.931	.866	.864	.297

Using a multiple regression analysis, the relationship between internal control systems and whistle-blowing policy was investigated; Table 4.1a shows the findings. The findings show a significant positive correlation (R = 0.931) between internal control systems and whistle-blowing policies, therefore proving that a well-organized control system considerably increases whistle-blowing efficacy. With $R^2 = 0.866$, the regression model explains 86.6% of the variance in whistle-blowing policy, therefore highlighting the major role that internal control systems including risk assessment, segregation of duties, and monitoring play in encouraging whistle-blowing activity.

Table 4.1b: Anova of internal control system and whistle blowing policy of North Central Nigeria's public sectors.

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	92.409	4	23.102	261.004	.000
1	Residual	14.295	345	0.041		
	Total	106.704	349			

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Table 4.1c: Coefficient of Internal control system and whistle blowing policy of North Central Nigeria's public sectors.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.110	.109		-1.009	.000
	SOA	.502	.025	.580	20.000	.000
	SOD	.305	.025	.354	12.200	.000
	AA	.207	.026	.238	7.962	.000
	OS	.125	.026	.143	4.808	.000

Reporting in Table 4.1b, the ANOVA test yielded an F-statistic of 261.004 ($p < 0.05$), therefore confirming the statistical relevance of the model. These conclusions are further supported by the coefficient analysis in Table 4.1c, which shows that safeguarding of assets ($\beta = 0.502$, $p < 0.05$), segregation of duties ($\beta = 0.305$, $p < 0.05$). These results refute the null hypothesis (H_{01}) that internal control mechanisms have no appreciable influence on whistle-blowing policies. These results underscore the need of improving internal controls to support public sector fraud reporting policies in Nigeria.

Objective 2: To evaluate the Effect of Internal Control Systems on Accountability in Nigeria's Public Sector

H_{02}: Internal control system have no significant impact on the accountability of North Central Nigeria's public sectors.

Table 4.2a: Model Summary of Internal control system and accountability of North Central Nigeria's public sectors.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.930	.865	.864	.290

The second objective evaluated how internal control systems affected public sector accountability for North Central Nigeria. With the model explaining 86.5% ($R^2 = 0.865$), the regression analysis in Table 4.2a shows a strong positive correlation ($R = 0.930$) of the variability in public sector responsibility. This result suggests that development of responsibility in financial operations and governance depends much on internal control strategies.

Table 4.2b: Anova of internal control system and accountability of North Central Nigeria's public sectors.

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	87.866	4	21.966	260.221	.000
1	Residual	14.591	345	.042		
	Total	102.457	349			

Table 4.2c: Coefficient of internal control and accountability of North Central Nigeria's public sectors.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.023	.109		-0.211	.000
	SOA	.392	.025	.455	15.680	.000
	SOD	.398	.025	.462	16.061	.000
	AA	.108	.026	.124	4.170	.000
	OS	.209	.026	.243	7.923	.000

The ANOVA test in Table 4.2b shows the third objective focuses on the function of internal controls in developing ethical policies. As demonstrated in Table 4.3a, a regression analysis produced a R value of 0.934, with a R^2 of 0.872, showing that internal control mechanisms explain 87.2% of the variation in ethical policies. These findings show that robust internal controls directly contribute to the reinforcing of ethical ideals and professional conduct in public institutionsed an

F-statistic of 260.221 ($p < 0.05$), indicating a significant model fit. The regression coefficients in Table 4.3c reveal that safeguarding of assets ($\beta = 0.392$, $p < 0.05$), segregation of duties ($\beta = 0.398$, $p < 0.05$), and organizational structure ($\beta = 0.209$, $p < 0.05$) greatly improve responsibility. However, approval and authorization process ($\beta = 0.108$, $p = 0.07$) suggested a reduced but still positive influence. Given these findings, the null hypothesis (H_{02}) that internal control mechanisms have no significant effect on accountability is rejected. These results underscore the need of implementing tight internal controls to ensure transparency and smart financial management in the public sector.

Objective 3: To Examine the Impact of Internal Control Systems on Ethics Policy in Nigeria's Public Sector

H_{03}: Internal control system have no significant impact on the ethics policy of North Central Nigeria's public sectors.

Table 4.3a: Model Summary of Internal control system and ethics policy of North Central Nigeria's public sectors.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.934	.872	.871	.287

The third objective is focused on the function of internal controls in formulating ethical policies. As demonstrated in Table 4.3a, a regression analysis produced a R value of 0.934, with a R^2 of 0.872, showing that internal control mechanisms explain 87.2% of the variation in ethical policies. These findings show that efficient internal controls directly contribute to the reinforcing of ethical polices and professional conduct in public Sector.

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Table 4.3b: Anova of Internal control system and ethics policy of North Central Nigeria's public sectors.

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	93.194	4	23.298	282.740	.000
1	Residual	13.742	345	.040		
	Total	106.936	349			

Table 4.3c: Coefficient of Internal control system and ethics policy of North Central Nigeria's public sectors.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.055	.108		0.509	.000
	SOA	.293	.024	.356	12.204	.000
	SOD	.172	.025	.208	6.800	.000
	AA	.309	.026	.374	11.731	.000
	OS	.410	026	.496	15.385	.000

The ANOVA test in Table 4.3b, with an F-statistic of 282.740 ($p < 0.05$), verifies the statistical significance of the model. Table 4.3c reveals that safeguarding of assets ($\beta = 0.293$, $p < 0.05$), approval and authorization ($\beta = 0.309$, $p < 0.05$), and organizational structure ($\beta = 0.410$, $p < 0.05$) significantly influence ethical standards. However, segregation of duties ($\beta = 0.172$, $p = 0.08$) demonstrated a smaller effect. Consequently, the null hypothesis (H_{03}) that internal control mechanisms have no significant impact on ethics policy is rejected. These findings underline the importance for solid ethical frameworks supported by internal control systems to avoid fraudulent activity and maintain integrity in public administration.

Objective 4: To Determine the Effect of Internal Control Systems on Management Integrity in Nigeria's Public Sector

H_{04}: Internal control system have no significant impact on the Management Integrity of North Central Nigeria's public sectors.

Table 4.4a: Model Summary of internal control system and Management Integrity of North Central Nigeria's public sectors.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.947	.898	.897	.278

The fourth objective analyzed the influence of internal control measures on management integrity. Table 4.10 presents the regression results, revealing a significant correlation (R = 0.947), with the model accounting for 89.8% of the variation in managerial integrity ($R^2 = 0.898$). These results show that a well-established internal control system considerably promotes ethical leadership and decision-making in the public sector.

Table 4.4b: Anova of Internal control system impact on the Management Integrity of North Central Nigeria's public sectors.

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	97.838	4	24.460	316.688	.000
	Residual	11.173	345	.032		
	Total	109.011	349			

Table 4.10c: Coefficient of Internal control system and Management Integrity of North Central Nigeria's public sectors.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.005	.099		0.048	.000
	SOA	.201	.022	.237	9.136	.000
	SOD	.296	023	.349	12.870	.000
	AA	.396	024	.466	16.468	.000
	OS	.410	025	.484	16.588	.000

The ANOVA test in Table 4.4b offers an F-statistic of 316.688 ($p < 0.05$), indicating the model's relevance. Table 4.4c reveals that safeguarding of assets ($\beta = 0.201, p < 0.05$), segregation of duties ($\beta = 0.296, p < 0.05$), approval and authorization ($\beta = 0.396, p < 0.05$), and organizational structure ($\beta = 0.410, p < 0.05$) all significantly contribute to management integrity. Based on these findings, the null hypothesis (H_{04}) that internal control mechanisims have no significant impact on managerial integrity is rejected. This underscores the significance of internal controls in fostering ethical leadership and responsible governance in Nigeria's public institutions.

Discussion of Findings

This study demonstrated a significant correlation between internal control systems and effective whistle-blowing in Nigeria's public sector. Key aspects such as asset safeguarding, segregation of duties, and authorization processes greatly improved whistle-blowing systems. This correlates with Ceva and Bocchiola (2020), who noted that effective internal controls create safe reporting routes, and Doka et al. (2021), who underlined the relevance of monitoring and risk assessment in minimizing fraud. To boost whistle-blowing efficacy, public institutions should strengthen internal controls, implement secure anonymous reporting channels, and legally protect whistle-blowers.

The study also indicated that internal control mechanisms play a vital influence in public sector accountability. Asset safeguarding, segregation of roles, and organizational structure had the significant impact, whereas authorization and approval processes had a weaker but still favorable impact. This supports Daninya et al. (2024), who observed that well-implemented controls prevent financial mismanagement, and Vutumu et al. (2024), who underlined that strict monitoring assures compliance with financial requirements. Strengthening independent oversight committees and routinely updating internal controls will promote transparency and prevent corruption.

Additionally, internal controls were found to be vital in creating ethical policies within public institutions. Asset safeguarding, approval processes, and organizational structure played major roles, while segregation of duties had a lesser influence. These findings correlate with Setyaningsih (2020) and Joseph & Isiaka (2022), who showed that strong internal controls encourage ethical conduct and prevent fraud. Integrating internal controls with ethical training programs and continual monitoring will assure compliance with financial regulations and reinforce professional conduct.

Lastly, the study demonstrated the important impact of internal controls on management integrity. All essential elements—safeguarding of asset, segregation of duties, approval processes, and organizational structure—positively influenced ethical leadership. This complements Onyefulu (2020), who connected robust internal controls to managerial integrity, and Ibanga & Etim (2022), who found that well-structured controls promote responsibility. To sustain ethical leadership, public organizations must have independent audit functions and clear accountability frameworks to avoid wrongdoing among senior officials.

Conclusion and Recommendation

This study indicates that robust internal control systems are crucial for boosting whistle-blowing, accountability, ethical standards, and management integrity in Nigeria's public sector. Effective controls help prevent fraud, maintain transparency, and reinforce ethical leadership. To retain these benefits, institutions must tighten whistle-blower protections, implement independent audits, and encourage ethical training. A commitment to these measures will encourage accountability, improve government, and build public trust.

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