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Daninya Michael Zeinaba, Joseph Femi Adebisi, Sani, A.B. & Margaret Ejima Akoje, 2024, 6(6):24-40

Effect of Internal Control Systems on Fraud Management in Nigerian Public Sector

Daninya Michael Zeinaba[1]
Department of Public Sector Accounting, School of Postgraduate Studies Anan University, Kwall, Jos, Nigeria
abaniez2012@gmail.com **+2348035970991**

Joseph Femi Adebisi[2]
Department of Public Sector Accounting, School of Postgraduate Studies Anan University, Kwall, Jos, Nigeria

Sani, A.B.[3]
Department of Public Sector Accounting, School of Postgraduate Studies Anan University, Kwall, Jos, Nigeria

Margaret Ejima Akoje[4]
Department of Accounting, School of Postgraduate Studies, Veritas University Abuja, Nigeria
mergakoje@yahoo.com

Abstract

This study examined the effect of the internal control systems on fraud management in Nigeria's public sector. Data relating to fraudulent practices, control environment, risk assessment, control activities, and top management compliance were obtained primarily from a random sample of 222 Heads of Units in the Account and Audit Departments in the Accountant General Office of the federation. These participants were directly involved in the management, financial planning, and controls. Survey design was adopted, the population of the study was one thousand two hundred and five (1205) with the sample size was two hundred and twenty-two respondents. The 184 fully completed and returned questionnaires which were coded and analyzed using descriptive regression techniques with the aid of SPSS 23 software. The results of the study revealed that control environment, risk assessment and control activities had a significant effect on fraud management in Nigeria public sector, and top management compliance has no significant effect on fraud management in Nigeria public sector. Therefore, the study concluded that the internal control system put in place in the public sector is well established and adequate for effective and efficient fraud management with adequate use of all channels of communication and information flow for proper fraud management. The study recommends among others that the internal control unit should be encouraged to maintain its independent role, such that the internal auditor should be adequately independent of those responsible for the financial operation, as well as be able to provide additional assurance on cost efficiency and effectiveness of the internal control system.
Keywords: *Internal Control Systems, Fraud Management, Risk assessment, Finance, Accounting*

1. Introduction

The concept of internal control systems has a long history, dating back to ancient civilizations. For instance, in the Republic of China, a supervisory authority monitored government branches, and in Hellenistic Egypt, tax collectors were supervised to ensure accountability (Rezaee, 2022). Initially, internal control was narrowly viewed as part of auditors' tasks, primarily focused on ensuring reliable financial reporting (Dimitrij et al., 2019). However, the role of internal controls has evolved, especially in detecting fraud. Ancient Egypt, for example, assigned scribes to monitor grain and gold inventories to prevent theft (Rezaee, 2022).

In the public sector, noncompliance with internal controls has led to poor predictability of government expenditure and lack of analytical capacity (Okmi, 2027). Recognizing the importance of setting up internal controls, organizations worldwide strive to detect and prevent irregularities, thus safeguarding assets and ensuring smooth operations (Aziz, 2019). Financial controls, which manage finances, and administrative controls, which indirectly impact financial activities, both play a vital role. Managers are responsible for these controls, but the entire organization plays a role in ensuring accountability (Gbegi & Adebisi, 2015).

Misuse of public resources, particularly in government institutions, has raised concerns about internal controls and how fraud is managed. Corruption and political interference are common in public sectors, undermining the effectiveness of financial controls (Ali, 2022). To counter these challenges, strong internal control characteristics, such as accurate record-keeping, proper asset management, and adherence to policies and regulations, are essential for achieving organizational goals and managing risks (Moses, 2020). Effective internal controls also support audits by identifying and correcting irregularities, contributing to organizational success (Chuke, 2019).

Despite the importance of internal controls, many developing countries face deficiencies in their governmental financial control systems (Maina et al., 2017). For instance, Zambia struggles with inadequate financial reporting and auditing systems, while Botswana's public sector falls short in providing sufficient rewards to its employees compared to the private sector (El-Nafbi, 2022). Corruption in Nigeria, Africa's largest economy, impedes growth, with public officers often involved in fraudulent activities like kickbacks and inflated contracts (Onu, 2022). This has led to a decline in financial performance in state-owned enterprises (Capital Markets Authority, 2022).

The evolution of internal control concepts is shaped by changes in economic conditions. Fraud and misappropriation of government funds have been increasing in Nigeria, with some attributing this to unreliable or poorly functioning internal control systems. These issues often stem from insufficient staffing, lack of training, unqualified personnel, and outdated manual record-keeping methods. Corruption, fraud, and bribery are widespread, undermining financial integrity, governance, and public trust. Weak internal controls allow errors, irregularities, and financial indiscipline to thrive.

Despite the importance of internal controls in safeguarding organizations, studies have shown that these systems are often inadequate or not properly enforced in Nigeria's public sector. The failure of weak internal controls has been highlighted globally, leading to the development of frameworks like COSO to improve organizational control systems. While internal controls are in place, they have not effectively curbed fraud within Nigeria's public organizations.

To address this gap, a deeper investigation into the characteristics of internal controls that influence fraud management is necessary. Research focused on the public sector in Nigeria is limited, creating a need for targeted strategies to enhance fraud detection and prevention. Strengthening internal controls will be key to improving transparency, accountability, and the overall governance of public funds. The main objective of this study is to determine the effect of the Internal Control Systems on Fraud Management in Nigeria's Public Sector, while the specific objectives were to:

i. determines the effect of control environment on the fraud management in Nigeria's public sector,
ii. establish the effect of risk assessment on the fraud management in Nigeria's public sector,
iii. examine the effect of control activities on fraud management in Nigeria's public sector, and

iv. evaluate the effect of top management compliance on fraud management in Nigeria's public sector.

2. Literature Review

Concept Fraud Management

Fraud has been defined in various ways by scholars, with common themes including deception, misrepresentation, and theft for personal or financial gain. Agwor (2017) explains fraud as knowingly presenting false information to cause harm or financial loss, while Idowu (2019) adds that it includes acts like embezzlement and misuse of assets. Fraud affects both the public and private sectors, with the public sector being especially vulnerable due to internal weaknesses. Fraud threatens economic growth, infrastructure, and trust in governance, especially in developing countries like Nigeria, where it is sometimes seen as a normal way of life.

Public sector fraud in Nigeria includes activities such as bribery, embezzlement, payment to ghost workers, and over-invoicing. The Nigerian Police Force and other institutions have been repeatedly implicated in corruption. Scholars like Duffield and Grabosky (2023) define fraud as deceit aimed at securing personal gain, often by exploiting loopholes in systems or manipulating financial statements.

The KPMG Fraud Survey (2021) identifies weak internal controls as a primary cause of fraud. Fraud management in the Nigerian public sector requires strong internal controls, such as segregation of duties, regular audits, and risk assessments. Agencies like the EFCC and ICPC play critical roles in prosecuting fraud, but financial management and accountability systems must be strengthened. Proper fund management and a commitment to transparency are key to ensuring public resources are used effectively and responsibly. Effective fraud management and accountability are vital to restoring public trust and ensuring financial integrity.

Concept of Internal Control Systems

Internal control systems are vital for the orderly and efficient operation of organizations, safeguarding assets, and ensuring accurate record-keeping. Babatunde and Fandango (2022) emphasize that successful institutions rely on robust internal controls to maintain accuracy, prevent fraud, and protect assets. Internal control systems include pre-audit checks to verify fund availability before expenditures and post-audits to assess management’s diligence and financial accuracy (Adepoju, 2019; Lee et al., 2004).

According to Tunji (2022), internal control involves both financial and administrative measures to achieve organizational objectives. It includes processes such as auditing and monitoring to prevent irregularities and detect fraud (Murti & Kurniawan, 2019). A strong internal control system is key to detecting errors and protecting organizations from bad financing practices and fraud (Agwor & Akani, 2017).

The COSO framework, a globally recognized standard, outlines five components of internal control: control environment, risk assessment, information and communication, control activities, and monitoring. These components collectively help organizations manage risks, ensure compliance, and achieve objectives. However, weaknesses in internal control create opportunities for fraud, making continuous improvement essential (Spira & Page, 2022). In public sector organizations, internal controls are crucial for economic development, combating corruption, and ensuring proper fund management. Effective systems can detect fraud early and guide corrective actions (Purnomo, 2017; Onyefulu & Ofor, 2016).

Control Environment

According to COSO (2022), the control environment forms the foundation upon which the other components of control systems are established. It influences the aspect of control consciousness in all the employees of an organization. According to ACCA (2022), "Control environment includes the governance and management functions and the attitudes, awareness and actions of those charged with governance and management concerning the entity's internal control and its importance in the entity. Generally, the entire control system in an organization is not just ensured by control environment but also involves other factors. However, this environment is a significant factor when assessing risks of material misstatement. If the control environment is weak, it will jeopardize the effectiveness of the overall control system. The management of an organization is responsible for determining the control environment. This environment provides a framework inside which all other parts of internal control operate.

Risk Assessment

The organization establishes objectives with sufficient clarity to allow the identification and assessment of risks associated with objectives. The organization identifies risks to the achievement of entity-wide objectives and analyzes risks as a basis for determining how risks should be managed. The organization considers potential fraud in assessing the risks to achieving objectives. The organization identifies and assesses significant changes that can affect the internal control system. The Committee of Sponsoring Organization (COSO) pioneered the concept of Enterprise Risk Management (ERM) to find solutions to risks affecting organizations. COSO (2011) emphasizes that corporations should set objectives and conduct a risk assessment as a precondition. An internal control framework will provide reasonable confidence of achieving the set objectives. Internal control systems should make provisions for the assessment of risk originating from internal and external sources.

Control Activities

Control activities are the directives and guidelines from the management of an organization to ensure orderly operations (Whittington and Pany, 2011). The control activities range from performance appraisal, analysis of actual expenditure against budgets, and past and expected performance; information processing is about checking the accuracy, completeness, and authorization of transactions; physical controls deal with securing both records documents, and assets, and segregation of duties where several tasks should not be under one individual from inception to completion.

Barra (2022) researched the impact of internal controls and penalties on fraud. Both managerial and non-managerial employees participated in the study. The results of the study showed that the presence of control activities coupled with the separation of duties increased the cost of committing fraud. Therefore, for an employee to commit fraud, the benefit of committing fraud should be higher than the cost of engaging in fraud. Further, the study established that segregation of duties is the least-cost fraud deterrent for the non-managerial staff. However, for managerial staff, maximum penalties are the least-cost deterrents for fraud. The study findings suggest that the effectiveness of preventive control activities like segregation of duties is dependent on the established detective controls.

Top Management Compliance

Wisdom, (2020), top management sets the tone for operational processes, behavior, and practices throughout the entire organization. As such, it is important to establish their role towards organizational culture, the influence this has on employee behavior, and its consequential impact on the success or failure of internal controls. While top management is aware of the influence that organizational culture has on shaping employee behavior, some fail to realize their direct involvement (Kane-Urrabazo 2022). The categorical imperative suggests doing the right thing at all times regardless of how much it may cost (Johnson 2015). This view suggests that top management behaviorally depicts company values at all times since their actions are scrutinized by subordinates and may be emulated by them in behavioral practice.

According to Deal and Kennedy (2023), managers can deliberately work towards the development of particular value systems regarded as symbolic, since they spend time evaluating the values, beliefs, and attitudes that should be encouraged in the workplace. Kane-Urrabazo (2016) argues that managers work towards developing organizational culture through trustworthiness, consistency, empowerment, and delegation, mentorship, and reward. Similarly, Onnell and Boyle (2022) highlight the need for managerial exemplification, training of employees, and rewarding and recognition of employee effort. The authors emphasize that employee engagement and empowerment is necessary for maintaining good management at all levels throughout the organization.

Empirical Review

Kakucha, (2023) examines the effectiveness of the internal controls levels for small businesses operating in Nairobi. The research adopted quantitative design and a sample of 30 small businesses at the NSSF listing between September 2007 and June 2020 was used for the study. The interview technique was used in the collection of 23 Primary data from managers of the small enterprises using examination of documents and interviews. Several limitations were found in internal control systems with varying degrees of deficiencies. The missing internal control components in the majority of the surveyed businesses were: risk analysis and poor information flow. The study also established the ignorance of the sample population regarding the components of an internal control effective system. It was also noted from the study that a negative link exists between the enterprise size and the effectiveness of the internal control characteristics while a negative association exists between enterprise-owned resources and the weaknesses in the internal control system. The study recommended that there is a need to enlighten small business operations to attain effective and efficient internal control systems was drawn from the study.

Wainaina, (2023) in his study on internal control function evaluation at the Kenya Polytechnic University College indicates that substituting its presence on the operational scene forces the management to depend on the techniques of internal control in the implementation of its decisions and regulation of all business activities. This argument makes the use of effective internal control systems a vital aspect in managing the resources of a business. Thus, each organization designs its procedures to allocate, control and ensure resource utilization so as to achieve its goals. It was therefore concluded that ICS's perform a crucial task in the prevention and detection of fraud and protection of both physical and tangible resources of an organization. The study recommended that there is need to enlighten small business operations to attain effective and efficient internal control systems was drawn from the study.

Odunayo, (2023) in his study; "Internal control system A Managerial Tool for proper accountability" stated that an" Internal Control system involves internal auditing, administrative and other accounting controls set-up by the management to ensure achievement of its planned objective" he went further to say that "these objectives entail keeping of appropriate records, ensuring adherence to the management policies and ensuring that actions are in line with plan". One of the recommendations he made was that "there should be adequate motivation such as bonuses and incentives to the employees/officers to avoid financial fraud.

Ademola et al (2023) in their study on "the effect of internal control system In Nigeria's public sector" concluded in the study that "the establishment of internal control plays a vital role in the prevention of fraud and irregularities" after testing two hypotheses to analyze "the effectiveness of internal control on the prevention and detection of fraud in the public-sector organization. They went further to say that, "management and relevant authorities should focus on more strategic ways of internal control establishment as a way to preventing fraud in the public sector. More so, even though there is an inefficient internal control, such as public-sector reform etc., effective internal control is most effective for fraud prevention". In the study of internal control and fraud detection in the Nigerian public sector.

Ndiwa (2023) studied the assessment of Internal Control System on Financial Performance in tertiary training institutions in Nigeria. Many federal parastatals in Nigeria are faced with poor financial performance which in extreme cases has led to the closure of some of them, despite having the necessary resources to run them. The study, therefore, endeavored to investigate the persistent poor financial performance from the perspective of internal controls which had hitherto been ignored. The general objective of the study was to establish the relationship between internal control and financial performance in federal parastatals with emphasis on educational institutions. The study was limited to the African Institute of Research and Development Studies. The findings indicated that most respondents were of the view that indeed there was a relationship between internal control and financial management. In this light, therefore, the federal parastatal that had entrenched prudent internal control strategies were most likely to manage their finances better hence meeting their financial and other pertinent obligations almost seamlessly. The study concludes that most federal parastatas had an internal audit department which was largely understaffed. The researcher concluded that staffing of the internal audit department determined financial performance of the parastatal in question.

Theoretical Framework

Edwin Sutherland introduced the concept of white-collar crime in 1939, arguing that such crimes are often committed by affluent, educated individuals in positions of power rather than by the poor. White-collar crime, as Sutherland (1983) defined, involves illegal acts by individuals of high social status in their professional roles. These crimes are typically financial, aimed at monetary gain, and affect various victims, including governments, taxpayers, and businesses. Theories like Routine Activity Theory suggest that the perpetrators' jobs provide them easy access to commit crimes, while Conflict Theory argues that societal elites shape the laws to their advantage, often committing these crimes to maintain or enhance their social status (Feeley, 2006).

White-collar crimes can be categorized into occupational crimes, such as embezzlement for personal gain, and corporate crimes, which benefit the firm but may also provide individual rewards like promotions and bonuses (Price & Norris, 2019). Critics argue that Sutherland's theory lacks empirical evidence and mainly explains crime initiation rather than the crime itself. However, the theory is relevant in understanding the selfish motives behind many frauds, particularly greed (Popkin & Stroll, 1993). In the Nigerian public sector, the prevalence of fraud is attributed to corrupt political and governmental institutions, where weak internal controls provide opportunities for crime. The study connects white-collar crime theory to fraud management practices, emphasizing the need for robust internal controls to prevent fraudulent activities.

3 Methodology

This study employed a descriptive survey design to examine the relationship between internal control characteristics and fraud management in Nigeria's public sector. Quantitative methods were used, with descriptive research focusing on the characteristics of respondents, internal control, and fraud management. The study targeted 1,205 employees working in the Office of the Auditor General of the Federation, Abuja, particularly those who had worked for at least five years. A sample of 291 respondents was determined using Morgan's table and selected through simple random sampling to ensure all levels of employees were represented.

A questionnaire, divided into two sections (internal control characteristics, and fraud management), was used for data collection. The questionnaire consisted of close-ended, Likert-scaled questions to gather quantifiable data for accurate correlation of research variables. A pilot survey was conducted to test the questionnaire's reliability, distributing ten copies to staff at the Office of the Accountant General of the Federation. The reliability of the instrument was evaluated using Cronbach's Alpha test, with a benchmark of 0.70, and validated by three expert lecturers. Data analysis involved frequency and percentage distributions to describe respondent demographics, and mean averages to assess internal control characteristics and fraud management levels. Pearson linear correlation coefficient determined the relationship between internal control and fraud management, while multiple regression analysis assessed the combined impact of the variables. SPSS 13 software was used to analyze the data, providing insights into the strengths, weaknesses, and recommendations of the study.

4. Results and Discussion

The main objective of this study is to examine the effect of the internal control system on fraud management in Nigeria's public sector. The chapter focuses on presenting data, analyzing results, testing hypotheses, and discussing findings. Fraud management (FM) is the study's dependent variable, while the independent variables include control environment (CE), risk assessment (AS), control activities (CA), and top management compliance (TMC). Out of the 291 questionnaires distributed, 184 were completed and returned, yielding a response rate of about 55%. This response rate is significantly higher than the minimum acceptable threshold of 30%, according to general research guidelines.

Table 1 Descriptive Statistics of Control Environments

	N	Min	Max	Mean		Std. Dev.
The Nigeria public sector has established and adequately communicated policies on matters as acceptable practices	184	1	5	4.60		.632
The treasury dealings are based on honesty and fairness	184	1	5	4.14		.847
The treasury demonstrates the right "tone at the top" that includes explicit moral guidance on what is right or wrong	184	1	5	4.39		.810
All employees have job descriptions that include specific duties	184	1	5	4.59		.746
Employees' reporting structure and relationships are established and communicated	184	1	5	4.46		.867
Overall Mean				4.436	0.8636	0.7804

Source: SPSS 23 Authors' Output

The table 1 highest mean of control environment is (4.6) and it indicates that majority of respondents agreed that control environment affect fraud management in Nigeria public sector. Conversely, the lowest score for managerial attributes (4.14) reflects the weakest argument regarding the influence of control environment on fraud management in Nigeria public sector based on responses computed from Likert scale. The results of the descriptive statistics further show that there was a wide dispersion between the overall mean of 4.436 and standard deviation value of 0.78. The implication of this is that there was no complete consensus agreement by the respondents regarding the influence of control environment on fraud management in Nigeria public sector.

Table 2 Descriptive Statistics of Risk Assessment

	N	Minimum	Maximum	Mean	Std. Deviation
The Nigeria public sector has a well-documented policy on risk management	184	1	5	4.21	1.256
The Nigeria public sector has a risk monitoring system that identifies potential risks	184	1	5	3.46	1.332
The Nigeria public sector encourages reporting of events and happenings in order to identify risks	184	1	5	4.31	1.712
The risk register is updated regularly	184	1	5	3.62	1.343
The Nigeria public sector has adequate capacity to perform risk assessment	184	1	5	3.73	1.422
Overall Mean				**3.866**	**1.413**

Source: SPSS 23 authors' Output

The highest mean of managerial attributes (4.21) indicates that majority of respondents agreed that of risk assessment on fraud management in Nigeria public sector. On the contrary, the lowest score for risk assessment (3.31) reflects the weakest argument regarding the influence of risk assessment on fraud management in Nigeria public sector based on responses computed from likert scale. The results of the descriptive statistics further show that there was a wide dispersion between the overall mean of 3.866 and standard deviation value of 1.413. The implication of this is that there was no complete consensus agreement by the respondents regarding the influence of risk assessment on fraud management in Nigeria public sector.

Table 3 Descriptive Statistics of Control Activities

	N	Minimum	Maximum	Mean	Std. Deviation
The treasury has effective policies and procedures that facilitate effective communication of funds management information	184	1	5	4.11	1.661
The treasury policies on information and communications provide well-established techniques and mechanisms to address non-compliance in financial matters.	184	2	5	3.76	0.720
The Nigeria public sector has well-established information and communication channels	184	2	5	3.70	0.814
The treasury has mounted suggestion boxes for obtaining sensitive and confidential information for effective management	184	1	5	3.58	1.167
The Nigeria public sector has clearly segregated duties for the various financial functions	184	1	5	3.67	0.817
Overall Mean				**3.764**	**1.035**

Source: SPSS 23 Authors' Output

The highest mean of control activities (4.11) indicates that majority of respondents agreed that control activities affect fraud management in Nigeria public sector. On the other hand, the lowest score for control activities (3.58) reflects the weakest argument regarding the influence of control activities affect fraud management in Nigeria public sector based on responses computed from likert scale. The results of the descriptive statistics further show that there was a wide dispersion between the overall mean of 3.764 and standard deviation value of 1.035. The implication of this is that there was no complete consensus agreement by the respondents regarding the influence of control activities affect fraud management in Nigeria public sector.

Table 4. Descriptive Statistics of Top Management Compliance

	N	Minimum	Maximum	Mean	Std. Deviation
All personnel possess adequate knowledge, competence, and experience to discharge their responsibilities	184	2	5	4.02	0.701
Employee performance evaluation techniques are implemented to identify incompetent and ineffective employees	184	2	5	4.11	0.656
Decision funds management in the Nigeria public sector are not dominated by a few individuals	184	2	5	4.17	0.645
The treasury has mechanisms to anticipate, identify, and react to events or activities that affect achieving its funds management objectives	184	2	5	3.14	0.711
There is adequate supervision and monitoring of decentralized operations regarding public funds at the Nigeria public sector	184	2	5	4.02	0.764
Overall Mean				**3.892**	**0.6954**

Source: SPSS 23 Authors' Outputs

The highest mean of external attributes (4.17) indicates that majority of respondents agreed that top management compliance has influence on fraud management in Nigeria public sector. Conversely, the lowest score for external attributes (3.14) reflects the weakest argument regarding the influence of top management compliance has influence on fraud management in Nigeria public sector, based on responses computed from Likert scale. The results of the descriptive statistics further show that there was a wide dispersion between the overall mean of 3.892 and the standard deviation value of 0.695. The implication of this is that there was no complete consensus agreement by the respondents regarding the influence of top management compliance has influence on fraud management in Nigeria's public sector.

Table 5 Descriptive Statistics of Fraud Management

	N	Minimum	Maximum	Mean	Std. Deviation
All staff are trained effectively on the use of integrated financial management information system (IFMIS)	184	2	5	4.60	0.445
The Nigeria public sector effectively controls the expenditure of all departments	184	2	5	4.35	0.637
Financial regulations are implemented effectively in the management of funds at the Nigeria public sector	184	1	5	4.19	0.750
Implementation of financial regulations have brought about transparency in financial management at the Nigeria public sector	184	2	5	4.16	0.641

The Nigeria public sector ensures the involvement of all stakeholders in financial decision making	184	2	5	4.13	0.744
The organization of the Nigeria public sector is clearly defined in terms of lines of responsibility and authority	184	2	5	4.18	0.844
The treasury determines the level of knowledge and skills needed to perform a particular job and this information is used in the hiring process	184	2	5	3.86	1.147
Overall Mean				4.21	0.744

Source: SPSS 23 Authors' Outputs

The highest mean of fraud management (4.60) indicates that majority of respondents agreed that there are determinants of fraud management in Nigeria public sector. Conversely, the lowest score in support of the determinants for fraud management (3.86) reflects the weakest argument regarding the influence of fraud management in Nigeria's public sector, based on responses computed from the Likert scale. The results of the descriptive statistics further show that there was a wide dispersion between the overall mean of 4.21 and the standard deviation value of 0.74. The implication of this is that there was no complete consensus agreement by the respondents regarding the effect of the internal control system on fraud management in Nigeria's public sector.

Table 6 Descriptive Statistics

Variables	Obs	Minimum	Maximum	Mean	Std Deviation
FM	184	2.61	5.00	3.855	.32542
CE	184	2.90	5.00	3.9501	.41557
RA	184	1.40	5.00	3.2001	.73052
CA	184	2.30	4.80	4.5121	.46811
TMC	184	2.20	5.00	3.6101	.45128

Source: SPSS 23 Authors' Output

Table 6 shows that fraud management (FM) in Nigeria's public sector has a mean value of 3.855 with a standard deviation of 0.32542, and minimum and maximum values of 2.61 and 5 respectively. This suggests a wide dispersion of fraud management and the implication of this is that there was no unanimous agreement as to the determinants of fraud management amongst the respondents in Nigeria's public sector. It also implies that the respondents in Nigeria's public sector do not have a uniform pattern of applying various methods in fraud management in Nigeria's public sector. Table 6 also indicates that the mean value of control environment is 3.9501 with a standard deviation of 0.41557 and minimum and maximum values of 2.9 and 5 respectively. This suggests a wide dispersion of the mean of control environment from the standard deviation. This suggests a wide dispersion of the influence of control environment on fraud management in Nigeria public sector and the implication of this is that there was no unanimous agreement as to the influence of control environment on fraud management in Nigeria public sector. It also implies that not all respondents agree that control environment enhance fraud management in Nigeria public sector.

In addition, Table 6 presents a mean value of risk assessment of 3.2001 with standard deviation of 0.73052, the minimum and maximum are 1.4 and 5 respectively. The standard deviation value suggests a wide dispersion of the influence of risk assessment on fraud management and the implication of this is that there was no unanimous agreement as to the risk assessment on fraud management in Nigeria public sector. It also implies that the respondents do not have a uniform pattern of applying risk assessment to enhance fraud management in public sector.

Furthermore, Table 6 shows a mean value of control activities of 4.5121 with standard deviation of 0.46811, and minimum and maximum of 2.30 and 4.004 respectively for control activities. This shows a wide dispersion of the influence of control activities on fraud management and the implication of this is that there was no unanimous agreement as to the influence of control activities on fraud management in Nigeria public sector. It also implies that the respondents in Nigeria public sector do not have a uniform pattern in their control activities to enhance fraud management.

Similarly, the results in Table 6 proved that top management compliance has a mean value of 3.6101 with standard deviation of 0.45128 and minimum and maximum values of 2.20 and 5.00 respectively. The results show that there is a wide dispersion between the mean of top management compliance and fraud management. The implication of this is that there was no unanimous agreement as to the influence of top management compliance on fraud management in Nigeria public sector. It also implies that the respondents in Nigeria public sector do not have a uniform pattern of top management compliance to enhance fraud management.

Table 7 Correlation Matrix of variables

Variables	Coefficients	FM	CE	RA	CA	TMC
FM	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
CE	Correlation Coefficient	.611**	1.000			
	Sig. (2-tailed)	.000	.			
RA	Correlation Coefficient	.463**	.272**	1.000		
	Sig. (2-tailed)	.000	.000	.		
CA	Correlation Coefficient	.533**	.472**	.501**	1.000	
	Sig. (2-tailed)	.000	.000	.000	.	
TMC	Correlation Coefficient	.322**	.252**	.459**	.492**	1.000
	Sig. (2-tailed)	.000	.000	.000	.000	.

Source: SPSS 23 Authors' Output

The Table shows that fraud management had positive and significant association with all the independent variables of control environment, risk assessment, control activities and top management compliance as indicating that as these independent variables increase, fraud management also increase. This can be confirmed with their coefficients of 0.611, 0.463 and 0.533 and 0.322 respectively while they had p-values of 0.000 each. Also, the Table shows that control environment (CE) had positive co-efficient with all the other independent variables of risk assessment, control activities and top management compliance indicating that as control environment increase, so also does risk assessment, control activities and top management compliance increase at a significant level indicating that control environment greatly influence risk assessment, control activities and top management compliance with coefficients of 0.272, 0.472 and 0.252 respectively while they had corresponding p-values 0.000, 0.000 and 0.000.

Also, risk assessment (RA) had a positive and significant correlation coefficient of 0.501 and 0.459 respectively with control activities and top management compliance. This means that as the risk assessment in public sector increase, these independent variables also increased significantly at 1% level of significance. Top management compliance has positive and significant statistical correlation coefficients and P-value of 0.492 and 0.000 respectively with control activities. The implication of this correlation coefficients is that as top management compliance increases, control activities also increase at a significant level.

Onu, (2017) suggest that multicolinearity may be a problem when the correlation between independent variables is 0.9 and above where as Emory (1982) considers more than 0.80 to be problematic. Therefore, it is evident from the above Table that the magnitude of the correlation amongst the explanatory and explained variables generally indicate no severe multicolinearity problems in the study because the highest correlation coefficient is 64.8 between fraud management and control environment.

Table 8 ***Regression Results of the Study***

Variables	Coefficients	T-Values	P-Values
Constants	1.79	6.138	.011
CE	.441	8.635	.013
RA	.304	5.363	.000
CA	.144	2.243	.026
TMC	.066	1.136	.243
R^2	0.624		
Adj. R^2	0.712		
F-Stat.	50.745		
F- Sig			0.000

Source: SPSS 23 Authors' Outputs

Findings from the regression analysis results as shown in Table 4.13 reveal that under the model FM (fraud management) the R-squared often referred to as the coefficient of determination of the variables was 0.624. The R-squared which is also a measure of the overall fitness of the model indicates that the model is capable of explaining about 62% of the variability of the fraud management in Nigeria public sector. This in other words also, indicates that the model explains about 62% of the systematic variations in the dependent variable. This result is equally complimented by the adjusted R-squared which reveals that 71% of the variation in the dependent variable of the model is explained by variations in the independent variables. This is also confirmed by the Fisher's (F) statistics of 50.7 which is statistically significance at 1% level of significance with a p-value of 0.000.

Discussion

The first objective was to determine the effect of a control environment on fraud management. The study established that the control environment has a positive and significant effect on fraud management, a position which is similar to that of another study (Mawanda, 2008) which revealed that internal controls and fraud management have a significant relationship. Moreover, Khamis (2021) found that a positive relationship existed between the internal control environment and the performance of financial institutions. The findings also concur with those of Doyle and McVay (2007) which uncovered that the internal control environment in an organization is positively related to its funds management practices and the success of such practices.

The correlation analysis showed that a significant and positive relationship exists between the control environment and funds management. The results of the analysis revealed that control environment and funds management are positively related. Given the findings, the study revealed that the Nigerian public sector has a good control environment because they have entrenched ethical values and integrity in their systems. Moreover, the tone at the top is appropriate, policies on appropriate practices are adequately communicated, and the treasuries' dealings are based on fairness and honesty. The findings show that Nigerian public-sector employees have job descriptions and that the treasury sets the skills and experience required for a particular job. The findings suggest that the Nigerian public sector ensures an effective control environment in its internal control systems, which significantly improves the management of public funds.

The second objective was to find out the effectiveness of risk assessment on fraud management. The study found that risk assessment has a significant and positive impact on funds management, a position shared by Kargi (2011) who established that risk identification and monitoring processes have a direct impact on financial management. The findings are in agreement with (Rejda, 2008) who maintains that risk assessment should be implemented using well-defined strategies that are in line with the goals and objectives of an organization. The findings also concur with (Okello, 2020) that financial institutions have multiple risks, and risk registers must be created and updated often to enable the sifting of risks that have a significant impact on the achievement of their objectives. The findings support Bessis and O'Kelly (2015) who maintain that risk assessment is a process that establishes mechanisms for identifying risks and preventing them to avoid losses. Moreover, the findings are in congruence with those of (Khan & Ahmed, 2011) which revealed that efficient risk management has a major influence on the survival and success of financial institutions.

The correlation analysis revealed that effect risk assessment has a positive and significant relationship with fraud management in Nigeria's public sector. The correlation analysis results showed that risk assessment and funds management are positively related. The findings showed that stakeholders of Nigeria's public sector were well-informed about risks and that risk inspection plans were sufficiently implemented. However, the findings of the study also revealed that most of Nigeria's public sector lacks well-documented policies on risk assessment and that risk monitoring systems were not in existence. The treasuries did not update their risk registers regularly, an indication that such registers may not exist. The capacity to assess risks and adequacy in the evaluation and documentation of risks is a major challenge in Nigeria's public sector. In addition, risk management committees were not in existence in Nigeria's public sector. Thus, the findings indicate that risk assessment is not well-established in Nigeria's public sector. Since risk assessment influences funds management, the breaches related to risk assessment in Nigeria's public sector pose a major threat to the effective management of public funds.

The third and last objective was to examine the effect of control activities on fraud management. The study revealed that control activities have a positive and significant effect on fraud management. This position is similar to that of Tunji's (2021) findings which showed that control activities including policies, procedures, and rules have a major influence on how an entity's finances are managed. The findings agree with Ray and Pany (2020) who assert that control activities, a component of internal controls, include procedures and policies through which management's directives are implemented. The findings also concur with (Kinyua, 2016) who stated that the top management ought to ensure that the right structures are established in an organization to support the internal control environment and risk assessment practices. Kinyua insists that having the right structures would enable the nurturing of a positive culture that would translate to healthy financial performance.

The correlation analysis indicated that internal control activities had a positive significant association with funds management in Nigeria's public sector. Correlation analysis results showed that control activities and fraud management are positively related. The findings of the study revealed that treasuries have policies and procedures that facilitate funds management. The findings suggest that control activities are an essential component of the internal control environment, and they constitute procedures and policies that ensure that directives on funds management in Nigeria's public sector are implemented. The findings therefore imply that effective control activities have a significant positive impact on funds management.

Similarly, the study also found that top management compliance has positive and significant effect on fraud management in Nigeria public sector. These findings are consistent with those of Sunday (2018), Tan and Lin (2012); Hla and Teru (2015) that found a positive and insignificant effect of management compliance on fraud management.

5. Conclusion and Recommendations

In conclusion from the findings, the study concludes that managers of Nigerian public sector should pay attention to internal control systems to enhance the management of public funds since internal control systems have a positive effect on fraud management. Control activities had the largest effect on fraud management, followed by risk assessment, control activities and top management compliance. The findings in this study support previous research findings. Moreover, it can be concluded that an effective control environment, risk assessment, and control activities must be incorporated into internal control systems to enhance public funds management. The study draws out the primary determinants of internal control systems that can be fostered by Nigeria's public sector to improve the management of public funds. The study broadens the scope of identification of measures that enhance organizational funds management such as control environment, control activities, and risk assessment. Thus, government institutions should invest in creating sound internal control systems to enhance funds management. This model can be utilized by managers of various organizations to address the main factors of internal control systems to improve funds management practices. Therefore, managers must entrench strong internal control systems in all levels of the organization to enhance fraud management. Having established that there is a significant positive relationship between independent variables - control environment, control activities, and risk assessment - and the dependent variable – funds management, all the null hypotheses were rejected and instead, alternative hypotheses were adopted.

The following recommendations were based on the study results, findings, and conclusions to management and government.

i. The Nigerian public sector should strive to identify and invest in the ideal combination of efficient and effective internal control systems that match their financial management needs to reduce incidents of fraudulent practices in the public sector by public officers as a result of a weak internal control system.

ii. Besides, the treasuries should have strong control environment in form of procedures, rules and policies. The control environment should be evaluated regularly by internal auditors to provide the treasuries' management with assurance on the effectiveness and adequacy of the existing mitigation controls.

iii. The Nigeria public sector should embrace sound risk assessment practices to realize the benefits of internal control systems in fraud management. The public-sector treasuries should have well-documented policies on risk assessment. They should establish risk monitoring systems to help identify potential risks. Risk registers should be introduced and they should be updated regularly. In addition, risk management committees should be established in all Nigeria public sector treasuries, which would help with proactive assessment and identification of risks and taking appropriate action to mitigate them.

iv. Besides, the treasuries should have strong control activities in form of procedures, rules and policies. The control activities should be evaluated regularly by internal auditors to provide the treasuries' management with assurance on the effectiveness and adequacy of the existing mitigation controls. The Nigeria public sector should ensure total compliance by the top management which will allow the right structure in place to support internal control systems. This will help to foster a positive institutional culture that ensures that internal control systems are not overridden.

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