

# Internal Control System, Risk Management Practice and Fraud Prevention Among Selected State Governments In Southwestern Nigeria

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## Abstract

The study examined the effect of internal control systems and risk management practices on fraud prevention among selected state governments in Southwestern Nigeria. A descriptive research design was adopted. Primary data were used for the study. The population of the study comprises all staff of the office of the Accountant General and Auditor General of Oyo, Ondo and Lagos States. Four hundred and fifty respondents were purposively sampled from 150 accounting officers, auditors and directors in each state and 414 copies of the questionnaire were returned and analyzed. Data were analyzed using an ordinal logit regression method. The result revealed that Control Activities, Information and Communication, Monitoring, and Risk Management Practices significantly influenced fraud prevention among the selected state governments in southwestern Nigeria. The study concluded that internal control systems and risk management practices enhanced fraud prevention among selected state governments in Southwestern Nigeria. The study recommended that measures and policies preventing fraud risks, such as control activities, information and communication and monitoring mechanisms, should be addressed effectively and efficiently. Risk management programs should be practised for better performance in government sectors.

## Keywords

Internal Control, Internal Control System, Risk Management, Risk Management Practice, Fraud Prevention, State Government Operations

## INTRODUCTION

Fraud has become a global hazard threatening the survival of organizations, including the public sector (Okoye & Gbegi, 2013; Dba & Egbe, 2016) and has unfavourably influenced the sector. ACFE (2021), in their report to nations, recorded that fraud cases persistently increased globally year after year. Likewise, fraud cases increased to 49 in Nigeria in the past 24 months. ACFE (2021) also reported that misappropriation of assets through misuse of control systems is the most frequently occurring fraud case of 86%, while fraud risk is also prevalent in every global region. Nwanyanwu (2018) described fraud as the concealment of truth, deceit, pretence, and misrepresentations to cause loss of money, property, and other valuables. Fraud is any purposeful action or inaction to deceive people that causes harm to the victim or results in financial benefit for the offender (KPMG Forensics, 2014). Fraud as a syndrome can crumble economic growth (Adelana & Toba, 2018), and over decades now, sectors of the economy, both public and private, have been shaken by it. Inaya and Isito (2016) also observed rampant fraud in all businesses in developed and developing countries. KPMG's global fraud and misconduct survey in 2021 observed that Nigeria is more vulnerable to fraud than before the COVID-19 pandemic, and there is no indication that risk is subsidizing (Dougall, 2021). During this period, the focus of organizations was taken away from control systems and new business practices were adopted, which brought exposure to emerging risks and

significant potential losses. Therefore, organizations, especially government sectors, need to focus on how control systems can be redefined and how the risk of fraud can be prevented.

In previous related works such as Abiola, 2013 Gbegi & Adebisi, 2013 Lyinomen & Nkechi, 2016 Udeh and Nwadiolor, 2016 Efiang *et al.*, 2016 Agwor & Akani, 2017 Adelana & Toba 2018 Adebayo & Ilesanmi, 2020; Nyakarimi, Kariuki & Kariuki 2020; Izedonmi & Olateru-Olagbegi, 2021, most of these studies focused on the internal control components and their effect on fraud prevention, leaving a gap in the literature as the studies did not assess the combined effect of internal control system and risk management practices on fraud prevention. In addition, the study assessed these internal control systems using the five components of the control system (control environment, risk environment, control activities, information and communication, monitoring and risk management practices) and their effect on fraud prevention. Based on the problems identified in the study, the study aimed to examine the effect of internal control systems and risk management on fraud prevention among Selected State Governments in Southwestern Nigeria.

## **LITERATURE REVIEW**

### **Conceptual Review**

#### ***Internal Control System***

Internal Control System is the action taken by an organization to help enhance the likelihood that the objectives of the organization will be achieved. The definition of internal control has evolved as different internal control models have been developed (Lyinomen & Nkechi, 2016). Internal control is a process, affected by an entity's board of directors, management and other personnel, designed to provide reasonable assurance That information is reliable, accurate and timely, of compliance with applicable laws, regulations, contracts, policies and procedures. Internal controls are intended to prevent errors and irregularities, identify problems and ensure corrective action. Process owners within the department often perform controls and interact with the control structure daily, sometimes without even realizing it because controls are built into operations (Bayyoud & Sayyad, 2015). The internal control system is introduced to control business activities systematically. The plan of organization and all of the coordinated methods adopted within a business safeguard its assets, check the accuracy and reliability of its accounting data, promote operational efficiency and encourage adherence to preserved managerial policies (Lyinomen & Nkechi, 2016).

#### ***Risk Management Practice***

Risk must be identified, managed, and addressed throughout the business in order for the business to be successful. Risk management is important in maintaining business stability and efficiency throughout the business life cycle. It proactively addresses potential obstacles hindering business success and the team from achieving its goals (Nyakarimi *et al.*, 2020). Risk can threaten or limit a business's goals, objectives, or deliverables. Business risk is present in all businesses and may have one or more causes and, if it occurs, one or more impacts. Business risk management includes the processes for conducting risk management planning, identification, analysis, responses, and monitoring and control of a business (Rehman & Hashim, 2020). The objectives of business risk management are to increase the probability and impact of positive events and decrease the probability and impact of events adverse to business objectives. Business issue management includes utilizing the outputs from the business risk management planning if the issue was identified as a risk during the risk planning processes.

#### ***Fraud Prevention***

Fraud definitions vary throughout the private and public sectors, as well as in academia. Black's Law Dictionary defines fraud as a knowing misrepresentation of the truth or concealment of a material fact to induce another to act to his or her detriment. Similarly, ACFE12 defines fraud as any intentional act or omission designed to deceive others, resulting in the victim suffering a loss and the perpetrator achieving a gain. The International Standards on Auditing (ISA) defines an intentional act by one or more individuals among management, those charged with governance, employees, or third parties, involving deception to obtain an unjust or illegal advantage. The Panel of External Auditors of the United Nations, the Specialized Agencies and the International Atomic Energy Agency addressed the term fraud in an audit guide issued in 1996 as an intentional act by one or more individuals among management, employees, or third parties, which results in a misrepresentation of financial statements. While other bodies define fraud in similar terms to the above, it is generally acknowledged that underlying the definition of fraud is the notion of intention and deception as the principle modus operandi when a fraudulent act is committed. Fraud covers a wide range of behaviour that includes, among other things, manipulation, falsification or alteration of records or documents; misappropriation of assets; suppression or omission of the effects of transactions from records or documents; recording of transactions without substance; and misapplication of accounting policies (Adelana& Toba2018).

Understanding the many factors contributing to the risk of fraud is the first step in defining a strategy to prevent fraud. It is necessary to implement policies to reduce threats of fraud. According to Lyinomen and Nkechi (2016), between these policies, the most important and, at the same time, the most common is the existence of a good internal control system. Based on other discussions on why people commit fraud, an organization must adopt effective ways of dealing with the problem of fraud, which will reduce stimuli and opportunity restriction and lower the potential ability of the perpetrators to rationalize their actions. Removal of fraud temptation and opportunity reduction from would-be fraudsters is the aim in the case of deliberately committed fraud. Fraud and loss prevention are profitable and can help

ensure stability and growth (Kamaliah *et al.*, 2018). It seems many companies do not have a formal fraud prevention approach. Once fraud has occurred, it is not easy to recover such losses; it is quite advisable to prevent them, and the old saying "prevention is better than cure". Prevention of fraud needs a system of policies and procedures which, in their aggregate, minimize the likelihood of fraudulent activities that may occur (Mwangi & Ndegwa, 2020). The possibility of being caught mostly persuades the potential fraudsters not to commit fraud. As a result of this principle, a thorough control system is necessary for fraud programs. Any effective fraud program constitutes the critical aspects of the "potential of being caught and the existence of a thorough control system". It is equally important to be proactive rather than reactive.

The attitude within an organization lays a good foundation for a high and low risk of fraud environment. Overlooking minor unethical practices such as petty cash theft and expense fraud would mean that even the bigger frauds committed at higher management levels might also be treated leniently (Tarjo *et al.*, 2022). Of late, there may be a risk of a complete collapse of business entities either via a lone dangerous fraud or a combination of several smaller frauds. A trustworthy organization is built from the realization by the suppliers, customers, employees and the community at large that it stands on high ethical standards and has taken time to consider its position on ethical issues (Adetiloye *et al.*, 2016). Also, the stakeholders mentioned above would realize that dubious ethical or fraudulent activities would cause critical unfavourable consequences to the people and organizations concerned when exposed.

### **Empirical Review**

Gbegi and Adebisi (2013) conducted a study to analyze the incidence of fraud in Nigeria's public service and the strategies to manage such fraud successfully. The research was subject to sample questionnaires from MDAs in Kogi state, and it was discovered that ICS and management integrity have no strong effect on FP in NPS. They suggested that the public sector develop strong management policies and a controversial suggestion of using new auditing and accounting applications to amplify the effectual and quick uncovering of fraud as against prevention.

Bayyoud (2015) analyzed the impact of internal Control and RM on banks in Palestine. He identified the impact of new bank reformation in the country on banks' risk identification, assessment, and mitigation. They reported that internal Control and RM have positively affected the bank, but challenges realized to be vital is the autonomy of internal controllers. These are seen as one of the components of FRM, which talks on governance. The study concluded that though Internal Control and RM exist, organizational commitment and internal audit independence are at stake.

Lynomen and Nkechi (2016) studied the impact of internal audit measures on FP and detection in NPS, looking at the Anambra state government with respondents in the account section of the state government. They reviewed the adequacy of staff, their qualifications and how well-equipped they are as proxies to detect and prevent fraud in the sector. The study showed a high positive correlation among the variables, showing that there has not been adequate qualified and well-equipped personnel to avoid and discover fraud. The study recommended addressing the risk associated with financial management and articulating internal accountabilities for managing the risk.

Adetiloye *et al.* (2016) identified internal Control and FP implications in the banking industry using primary and secondary data. Internal control was tested with primary data, while FP was tested with secondary data. The findings revealed that internal control is effective against fraud in itself. However, not all employees are obligated to do it. The regressed variable indicates that internal control of separation of duties seems to be the most positive factor that reduces fraud effectively. At the same time, process control and monitoring are highly significant, too. The overall results show a strong inverse relationship between internal control and fraud, though banks are not committed to these internal processes.

Agwor and Akani (2017) studied the effect of ICS on FP in the public service of Bayelsa State. It was found that there is a strong correlation between the variables considered. The variables considered in their work include management ethical values and asset safeguarding concerning asset misappropriation and employees' embezzlement. They concluded that attaining organizational objectives depends largely on how strong and effective the ICS is in place, which this study will look into with the use of COSO's five components of internal control.

Adeyemi and Olarewaju (2018) examined how internal control affects financial accountability with the financial operation, regulatory compliance, financial reporting, openness, and dissemination of information in NPS. The study sampled ministries in southwestern Nigeria with respondents from the Account and Audit department using questionnaires to units' heads in the Audit and Account departments of MDAs in southwestern Nigeria using descriptive statistics and regression techniques. The result showed a positive impact of internal control on financial accountability. Though the ICS in place is well established, it needs implementation in the public sector, and the audit department should be maintained independently of those responsible for financial operations, which should offer an acceptable level of certainty about internal control efficiency.

The study carried out by Okoye *et al.* (2019) examined how FRM affects the corporate performance of deposit money banks using an international fraud report/checklist and return on asset and return on equity as a proxy for FRM and corporate performance, respectively. It was revealed that FRM control activities will increase the organization's performance. In light of this, it was recommended that the practices, which include internal controls, board audit committee, fraud risk assessment, anti-fraud policy and surprise audit, should be encouraged at all levels of the organization.

Ojo (2019), in his paper article, investigated the connection between internal audit and RM in NPS with respondents from ten MDAs in the river state. The findings made us understand that internal audit has a significant relationship with risk control and financing as measures for RM. Though limited to validated primary data for analysis, the study recommended a culture of RM in MDAs to ensure effective RM. Akinkoye and Adewumi (2019) investigated the level of risk exposure and roles of internal auditing and RM process in Oyo State public entities, how internal auditing affects project execution and the effects of internal auditing on FP. The results revealed that improving the RM process is crucial in Nigeria's public sector in enhancing project execution and a positive and significant effect of internal auditing on FP through emerging risk identification.

Mwangi and Ndegwa (2020) studied detective, preventive and corrective controls to establish how FRM practices can influence the level of fraud incidence of listed firms in Kenya with the use of segregation of duties, fraud risk assessments, corporate code of conduct, enhanced audit committees, fraud reporting program, code of sanction against contractors/ suppliers, verifying references on employees, positive staff recognition, staff rotation policy, anti-fraud training program, proper due diligence on customers, ICS, and internal audit department. The discovery revealed that corrective and preventive controls alone have a weighty, undesirable impact on fraud occurrence. These findings imply that management commitment makes the anti-fraud measures effective.

Ariyanto and Hariman (2022) evaluated auditors' and non-auditor's fraud awareness of civil servants and their responsibilities on prevention and detection. They gave weak ICS and lack of ethical values as the sources of fraud risk in government agencies, hence the need for the evaluation of the effectiveness of ICS. Atta (2020), in his study of the relationship between performance and FRM practices using a case study of the Universal Bank in Ghana, revealed a positive relationship with a recommendation for implementing ICS and effective risk mitigation strategies.

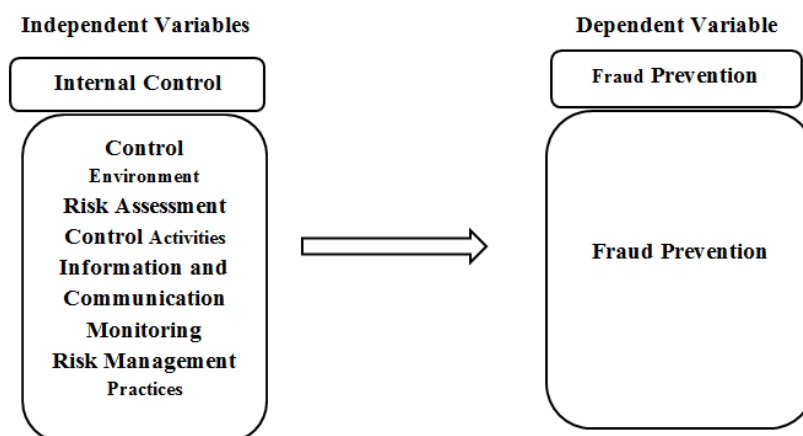
### Theoretical Review

Triangle theory (FTT) discusses three factors that motivate people to commit fraud: financial pressure, opportunity, and rationalization. Jonson and Geis (2012) stated that financial pressure workers face encourages them to commit fraud; this pressure includes debt, dependence on drugs and others, and the pleasure of living a luxurious lifestyle. People also, through the presence of weakness in the ICSs, tend to commit fraud.

Triangle theory was criticized for being inadequate for deterring, preventing and detecting fraud. Introducing a fourth element, 'Capability', enhanced fraud diamond theory (FDT) as it is being distinctly looked into in managing fraud risk. Wolfe and Hermanson (2014) saw the need to include one other factor to Cressey's three elements in his Fraud Triangle Theory and propounded FDT. According to him, many frauds would not have happened without the right ability to execute the fraud. To carry out a fraud, someone must have the capability to use the opportunity; this led to the introduction of a fourth element to the triangle theory called capability, which transformed it into the fraud diamond theory. Abdullahi and Mansor (2015) stated that these traits and abilities appropriately play key functions in ascertaining whether fraud will occur. We see capability as when someone is in a position or has adequate knowledge. He said opportunity gives access to fraud while pressures and rationalization draw people towards it, and recognition of capability opens the doorway to exploit opportunity and walk the doorway. The fraud diamond theory underpins the study.

### Conceptual Framework

This study uses COSO's (2014) components and principles of ICS in checking the strength and effectiveness of ICS established and how it has helped curb and mitigate fraud to prevent such fraud from occurring. COSO/ACFE (2016) FRM framework is used to assess the implementation of FRM for FP in the sector. KPMG Forensics' (2014) framework on FRM gave six elements of a comprehensive ethics and compliance program designed to prevent fraud and misconduct. The elements will be used as techniques to proxy FP. The diagram below demonstrates a reduction in the risk of fraud when prevention techniques are implemented with effective and strong internal control and FRM is properly implemented.



**Fig. 1** Fraud Risk Management  
Sources: Author's Conceptualization, 2022

**METHODOLOGY**

The study adopted a descriptive survey research design. Primary data were used for the study. The population of the study comprises all staff of the office of the Accountant General and Auditor General of Oyo, Ondo and Lagos States. Four hundred and fifty respondents were purposively sampled from 150 accounting officers, auditors and directors in each state and 414 copies of the questionnaire were returned and analyzed.

**Model Specification**

The study modified the COSO internal control framework of Adeyemi and Olarewaju (2018). It examined the four components of ICS: Control environment, control activities, information and communication, risk assessments, and risk management practice.

$$FRPR = f(ICOEN, IRIAS, ICOAC, INCO, ERMP) \dots \dots \dots (i)$$

$$FRPR_i = \alpha_i + \beta_1 ICOEN_i + \beta_2 IRIAS_i + \beta_3 ICOAC_i + \beta_4 INCO_i + \beta_5 ERMP_i + e_i \dots \dots \dots (ii)$$

where:

- FRPR = Fraud Prevention
- ICOEN = Control Environment
- IRIAS = Risk Assessment
- ICOAC = control Activities
- IINCO = Information and Communication
- ERMP= Risk Management Practices
- e = Error Term.

**Monitoring components of ICS on fraud prevention**

The model examined the monitoring components of ICS

$$FRPR = f(IMON) \dots \dots \dots (i)$$

$$FRPR_i = \alpha_i + \beta_1 IMON_i + e_i \dots \dots \dots (ii)$$

Where,

- FRPR = Fraud Prevention
- IMON= Monitoring
- e = Error Term.

A priori expectation  
 $\beta_1, \beta_2, \beta_3, \beta_4$  and  $\beta_5 > 0$

The study employed the ordinal logit regression method and examined the effects of internal control systems and risk management practices on fraud prevention among Selected State Governments in Southwestern Nigeria. The outcome variable for fraud prevention was measured on an ordered, categorical, and five-point Likert scale: 'no existence', 'low existence', 'moderate existence', 'high existence', and 'very high existence'.

**RESULT AND DISCUSSION**

**Socio-Demographic Characteristics of the Respondents**

Table 1 shows that 51.2% of respondents were male and 48.8% were female. The study drew male and female respondents, with a sizable proportion of men participating. According to the age distribution, 2.2% of respondents were under the age of 20, 18.1% were between the ages of 20 and 29, 35.3% were between the ages of 30 and 39, 30.2% were between the ages of 40 and 59, and 14.3% were over the age of 50. According to the educational credentials, 7.0% of the participants held a school certificate, 15.2% held an ND/NCE, 68.1% held a first degree/HND, and 9.7% held a master's/PhD. Approximately 11.4% of responses came from the administrative department, while 53.1% came from accounts and finance, 15.5% from internal audit, and 20.0% from other departments. According to the number of years spent in the department, 12.8% had spent 16 to 20 years in the department, 12.1% had spent more than 20 years in the department, 20.5% had spent 11 to 15 years in the department, and 29.0% had spent between one and five years there. According to the respondents' management level, top-level managers comprised 22.7% of the respondents, middle-level managers made up 57.5%, and lower-level managers made up 19.8%. Regarding the respondents' years of experience, 34.5% had 1 to 10 years of office experience, 30.0% had 11 to 20 years, 27.3% had 21 to 30 years, 7.7% had 31 to 40 years, and 0.5% had experience spanning more than 40 years.

**Table 1** Respondent's Socio-demographic Characteristics

Variables	Frequency	Percentage (%)
<b>Gender</b>		
Male	212	51.2
Female	202	48.8

Table 1 continued.....

**Age**

Less than 20 Years	9	2.2
20 - 29 Years	75	18.1
30 - 39 Years	146	35.3
40 - 49 Years	25	30.2
50 years and more	59	14.3

**Educational Qualification**

School Certificate	29	7.0
ND/NCE	63	15.2
First Degree/HND	282	68.1
Master/PhD	40	9.7

**Department**

Administration	47	11.4
Accounts and Finance	220	53.1
Internal Audit	64	15.5
Others	83	20.0

**Numbers of Years in the Department**

1 - 5 Years	120	29.0
6 - 10 Years	106	25.6
11 - 15 Years	85	20.5
16 - 20 Years	53	12.8
Over 20 Years	50	12.1

**Level of Management**

Top Management	94	22.7
Middle Management	238	57.5
Lower Management	82	19.8

**Years of Experience**

1 - 10 Years	143	34.5
11 - 20 Years	124	30.0
21 - 30 Years	113	27.3
31 - 40 Years	32	7.7
Over 40 Years	2	0.5

**414** **100%**

Source: Field Survey, 2023

**Examination of Internal Control System, Risk Management and Fraud Prevention among Selected State Governments in Southwestern Nigeria**

The results are represented in Table 2 to Table 11. Table 2 shows the model fitting information; it provides information about the model's goodness of fit. The model was fitted using the logit link function. The -2 log-likelihood of the model is 401.101, indicating a good fit between the model and the data. The model has 19 degrees of freedom, and the chi-square test for the model is statistically significant ( $p < 0.001$ ), indicating that the model as a whole is a good fit.

**Table 2 Model Fitting Information**

Model	-2 Log likelihood	Chi-Square	df	Sig.
Intercept Only	712.165			
Final	401.101	311.064	19	0.000

Link function: logit

Source: Authors' Computation, 2023

The Goodness-of-Fit is given in Table 3. The goodness-of-fit tests provide information about the fit of the model. The chi-square test for Pearson residuals is 406.819, and the chi-square test for Deviance residuals is 299.335. Both tests have one degree of freedom and are statistically significant, indicating that the model has some misfit. However, pseudo-R-squares in Table 4 Cox and Snell (0.528) and Nagelkerke (0.582) indicated that the model explains a substantial amount of the variance in the data. Nagelkerke (0.582), which has the greatest R-square, is considered the best fit.

**Table 3** Goodness of Fit

	Chi-Square	df	Sig.
Pearson	406.819	561	1.000
Deviance	299.335	561	1.000

Link function: logit

**Source:** Authors' Computation, 2023**Table 4** Pseudo R square

Cox and Snell	0.528
Nagelkerke	0.582
McFadden	0.315

Link function: logit

**Source:** Authors' Computation, 2023

Table 5 shows the parameter estimates, which include the estimated coefficients, their standard errors, the Wald test and the corresponding p-values (Significance), and the 95% confidence interval of the coefficients. The coefficients represent the change in the log odds of being in a higher category of the dependent variable associated with a one-unit increase in the independent variable, holding all other variables constant. The odds ratio for each coefficient indicates the multiplicative change in the odds of being in a higher category of the dependent variable associated with a one-unit increase in the corresponding predictor variable, holding all other variables constant. The standard errors indicate the precision of the estimates, and the Wald chi-square statistics and p-values test the null hypothesis that the coefficient is equal to zero. The significance of each coefficient indicates whether the corresponding predictor variable's effect is statistically significant. A significant coefficient (with a p-value < 0.05) indicates that the effect is likely not due to chance, while a non-significant coefficient suggests that the effect may be due to chance.

The parameter estimates indicate the effects of the independent variables on the outcome variable, which in this case is an ordinal variable with five levels. The outcome variable is divided into four thresholds (FRPR = 1 to FRPR = 4), and the parameter estimates are provided for each threshold. The intercept-only model has a -2 log-likelihood of 712.165. The results show that the estimates become less negative as the threshold increases, indicating that the probability of falling under a higher category increases. For the independent variable, ICOEN=5 is set to 0 due to the reference category, IRIAS=5 is set to 0 due to the reference category, ICOAC=5 is set to 0, indicating the reference category, IINCO=5 is set to 0, indicating the reference category, and ERMP=5 is set to 0, indicating the reference category is ERMP=5.

The estimate is interpreted thus: as the state government move from having a low existence of control environment to a moderate existence, the likelihood of preventing fraud increases by 1.644 compared with the state government with a very high level of existence of control environment. At a 5% degree of significance ( $t=0.838$ ,  $p=0.403$ ), this suggests that a rise in the low-control environment will reduce fraud. As the state government move from having a moderate existence of control environment to a high existence, the likelihood of fraud decreases by 0.632 compared with the state government with a very high level of existence of control environment. At a 5% significance level, ( $t=0.836$ ,  $p=0.402$ ) showed no significance. It implies that an increase in the level of moderate control environment will result in a decrease in fraud. As the state government moves from having a high existence of control environment to a very high existence, the likelihood of fraud decreases by 0.634 compared with the state government with a very high control environment. At a 5% significance level, ( $t=0.847$ ,  $p=0.397$ ) showed no significance; this demonstrates that an increase in the high-control environment will lead to a decline in fraud. It shows that state governments can minimize fraud through the control environment.

As the state government moves from having no risk assessment to a low existence, the likelihood of fraud decreases by 0.264 compared with the state government having a very high level of risk assessment. A 5% significance level showed that ( $t=1.025$ ,  $p=0.305$ ) is insignificant. Thus, improving risk assessment will lead to more effective fraud. As the state government moves from having a low existence of internal risk assessment to a moderate existence, the likelihood of fraud decreases by 0.356 compared with the state government with a very high level of risk assessment. A 5% significance level showed that ( $t=1.436$ ,  $p=0.151$ ) is insignificant. It implies that an increase in risk assessment will improve fraud prevention. As the state government moves from having a moderate existence of risk assessment to a high existence, the likelihood of fraud decreases by 0.635 compared with the state government with a very high level of risk assessment. A 5% significance level showed that ( $t=0.690$ ,  $p=0.490$ ) is insignificant, indicating that improved fraud prevention will result from increasing risk assessment. As the state government moves from having a high existence of risk assessment to a very high existence, the likelihood of fraud decreases by 1.113 compared with the state government with a very high level of risk assessment. A 5% significance level showed that ( $t=0.175$ ,  $p=0.862$ ) is insignificant, suggesting that increased risk assessment will improve fraud prevention. The implication is that the state government needs to keep increasing risk identification and assessment to prevent fraud.

As the state government moves from having no control activities to a low existence, the likelihood of fraud decreases by 0.737 compared with the state government with very high control activities. A 5% level of significance showed ( $t=0.175$ ,  $p=0.861$ ) not significant. It suggests that greater fraud prevention will result from higher control activities. As the state government moves from having a low existence of control activities to a moderate existence, the

likelihood of fraud decreases by 0.119 compared with the state government with a very high level of control activities. At a 5% significance level ( $t= 2.736, p=0.006$ ), improving control activities will improve fraud prevention. As the state government moves from having a moderate existence of control activities to a high existence, the likelihood of fraud decreases by 0.159 compared with the state government with a very high level of control activities. At a 5% significance level ( $t= 2.738, p=0.006$ ), this implies that control activities significantly affect fraud prevention. As the state government moves from having a high existence of control activities to a very high existence, the likelihood of fraud decreases by 0.510 compared with the state government with a very high level of control activities. A 5% significance level showed that ( $t= 1.111, p=0.267$ ) is insignificant. It means that fraud prevention improved as a result of an increase in control activities. It signifies the efficiency of designed information systems and technology infrastructure to achieve objectives and respond to risks. Documentation of responsibilities and periodic reviews are put in place through policies.

As the state government moves from having no information and communication to a low existence, the likelihood of fraud decreases by 0.083 compared with the state government with a very high level of information and communication. At a 5% significance level ( $t= 2.181, p=0.029$ ), this implies a significant effect of information and communication on fraud prevention. As the state government moves from having a low existence of information and communication to a moderate existence, the likelihood of fraud decreases by 0.311 compared with the state government with a very high level of information and communication. A 5% level of significance showed ( $t= 1.915, p=0.056$ ) is not significant. It indicates that the proper dissemination of information and communication reduces fraud. As the state government moves from having a moderate existence of information and communication to a high existence, the likelihood of fraud decreases by 0.430 compared with the state government with a very high level of information and communication. A 5% significance level showed that ( $t= 1.576, p=0.115$ ) is insignificant, indicating that information and communication will reduce fraud. As the state government moves from having a high existence of information and communication to a very high existence, the likelihood of fraud decreases by 0.972 compared with the state government with a very high level of information and communication. At a 5% level of significance ( $t= 0.057, p=0.955$ ) is insignificant. It signifies that effective information and dissemination will result in reduced fraud. The study suggests that, at all levels, there should be effective information movement up, down, across, and around reporting lines.

As the state government move from having no risk management practice to a low level, the likelihood of fraud decreases by 0.021 compared with the state government with a very high level of risk management practice. A 5% significance level ( $t=3.278, p=0.001$ ) implies a negative significant effect of risk management practices on fraud prevention. As the state government move from having a low level of risk management practice to a moderate level, the likelihood of fraud decreases by 0.020 compared with the state government with a very high level of risk management practice. At a 5% significance level ( $t= 5.093, p=0.000$ ), this also implies a negative significant effect of risk management practices on fraud prevention. As the state government move from having a moderate level of risk management practice to a high level, the likelihood of fraud decreases by 0.144 compared with the state government with a very high level of risk management practice. At a 5% significance level ( $t= 2.765, p=0.006$ ), this also implies a negative significant effect of risk management practices on fraud prevention. As the state government move from having a high level of risk management practice to a very high level, the likelihood of fraud decreases by 0.727 compared with the state government with a very high level of risk management practice. At a 5% level of significance ( $t= 0.489, p=0.625$ ) is not significant. An increase in risk management practices will reduce fraud in the state governments.

**Table 5** Parameter Estimates

Variable	Estimate	Odds Ratio	Standard Error	Wald	df	t-test	Sig.	95 % Confidence Interval	
								Lower Bound	Lower Bound
<b>Threshold</b>									
[FRPR = 1]	-12.173	0.000	1.366	79.418	1	8.911	0.000	-14.85	-9.496
[FRPR = 2]	-7.342	0.001	0.894	67.428	1	8.213	0.000	-9.095	-5.59
[FRPR = 3]	-3.81	0.022	0.853	19.937	1	4.467	0.000	-5.483	-2.138
[FRPR = 4]	0.192	1.212	0.784	0.06	1	0.245	0.807	-1.345	1.728
<b>Location</b>									
[ICOEN=2]	0.497	1.644	0.594	0.699	1	0.838	0.403	-0.668	1.662
[ICOEN=3]	-0.459	0.632	0.549	0.701	1	0.836	0.402	-1.534	0.616
[ICOEN=4]	-0.455	0.634	0.537	0.718	1	0.847	0.397	-1.509	0.598
[ICOEN=5]	0a	.	.	.	0	.	.	.	.
[IRIAS=1]	-1.333	0.264	1.3	1.052	1	1.025	0.305	-3.881	1.214
[IRIAS=2]	-1.034	0.356	0.72	2.06	1	1.436	0.151	-2.445	0.378
[IRIAS=3]	-0.454	0.635	0.658	0.477	1	0.690	0.490	-1.744	0.835



Table 5 continued

[IRIAS=4]	0.107	1.113	0.613	0.03	1	0.175	0.862	-1.094	1.308
[IRIAS=5]	0a	.	.	.	0	.	.	.	.
[ICOAC=1]	-0.305	0.737	1.739	0.031	1	0.175	0.861	-3.713	3.103
[ICOAC=2]	-2.131	0.119	0.779	7.489	1	2.736	0.006*	-3.657	-0.605
[ICOAC=3]	-1.84	0.159	0.672	7.503	1	2.738	0.006*	-3.157	-0.523
[ICOAC=4]	-0.673	0.510	0.606	1.235	1	1.111	0.267	-1.861	0.514
[ICOAC=5]	0a	.	.	.	0	.	.	.	.
[IINCO=1]	-2.484	0.083	1.139	4.758	1	2.181	0.029*	-4.716	-0.252
[IINCO=2]	-1.168	0.311	0.61	3.662	1	1.915	0.056	-2.365	0.028
[IINCO=3]	-0.845	0.430	0.536	2.488	1	1.576	0.115	-1.895	0.205
[IINCO=4]	-0.028	0.972	0.49	0.003	1	0.057	0.955	-0.988	0.933
[IINCO=5]	0a	.	.	.	0	.	.	.	.
[ERMP=1]	-3.884	0.021	1.185	10.733	1	3.278	0.001*	-6.207	-1.56
[ERMP=2]	-3.891	0.020	0.764	25.916	1	5.093	0.000**	-5.388	-2.393
[ERMP=3]	-1.938	0.144	0.701	7.638	1	2.765	0.006*	-3.312	-0.564
[ERMP=4]	-0.319	0.727	0.652	0.239	1	0.489	0.625	-1.597	0.959
[ERMP=5]	0a	.	.	.	0	.	.	.	.

Sig. <0.000\*\*

Sig. >0.01<0.05\*

Source: Authors' Computation, 2023

Table 6 shows the test of parallel lines. It shows that the assumption of proportional odds has been met, indicating that the effect of the independent variables on the outcome variable is the same across all thresholds.

Table 6 Test of Parallel Lines

Model	-2 Log likelihood	Chi-Square	df	Sig.
Null Hypothesis	401.101			
General	374.823	26.278	57	1.000

Link function: logit

Source: Authors' Computation, 2023

### Model 2 Effect of Monitoring on Fraud Prevention

Table 7 shows the model fitting information. The chi-square statistic indicated a significant improvement over the baseline intercept-only model. It showed a significant improvement in the null model (Sig. = 0.000,  $p < 0.05$ ). Hence, the model showed a good fit.

Table 7 Model Fitting Information

Model	-2 Log likelihood	Chi-Square	df	Sig.
Intercept Only	199.569			
Final	54.348	145.221	4	0.000

Link function: logit

Source: Authors' Computation, 2023

The Goodness-of-Fit is given in Table 8. This table examines whether the fitted model and the observed data are consistent and covers Pearson's Chi-square test statistic for the fitted model and the deviance. The result showed that the observed data were consistent with the fitted model (Sig = 1.000,  $p > 0.05$ ).

Table 8 Goodness of Fit

	Chi-Square	df	Sig.
Pearson	11.065	12	1.000
Deviance	11.932	12	1.000

Link function: logit

Source: Authors' Computation, 2023

Table 9 shows the pseudo  $R^2$ . The coefficient of determination ( $R^2$ ) is used in evaluating the fitted regression model, which concludes the variance proportion of respondent variable associated with the explanatory variables, with a greater

proportion revealing that the model describes more variation. Therefore, there is a 32.6% (variation) improvement in the prediction of fraud prevention based on monitoring compared to the null model.

**Table 9** Pseudo R square

Cox and Snell	0.296
Nagelkerke	0.326
McFadden	0.147

Link function: logit

Source: Authors' Computation, 2023

Table 10 revealed the estimates, their standard errors, associated p-values (Sig.), the Wald test, and the 95% confidence interval. The estimate is interpreted thus: as the state government move from having no Monitoring to a low existence, the likelihood of fraud decreases by 0.036 compared with the state government with a very high level of monitoring. At a 5% significance level, (t= 1.669, p=0.095) is insignificant. It implies that increasing monitoring will reduce fraud in the state governments. As the state government move from having a low existence of monitoring to a moderate existence, the likelihood of fraud decreases by 0.010 compared with the state government with a very high level of monitoring. At a 5% significance level (t= 9.541, p=0.000), this implies a negative significant effect of monitoring on fraud prevention. As the state government move from having a moderate existence of monitoring to a high existence, the likelihood of fraud decreases by 0.040 compared with the state government with a very high level of monitoring. At a 5% significance level (t= 8.508, p=0.000), this also implies a negative significant effect of monitoring on fraud prevention. As the state government moves from having a high existence of monitoring to a very high existence, the likelihood of fraud decreases by 0.195 compared with the state government with a very high level of monitoring. At a 5% significance level (t= 4.664, p=0.000), this also implies a negative significant effect of monitoring on fraud prevention.

**Table 10** Parameter Estimates

Variable	Estimate	Odds Ratio	Standard Error	Wald	df	t-test	Sig.	95 % Confidence Interval	
								Lower Bound	Upper Bound
<b>Threshold</b>									
[FRPR =1]	-9.06	0.000	1.069	71.848	1	8.475	0.000	11.155	-6.965
[FRPR = 2]	-4.684	0.009	0.382	150.222	1	12.26	0.000	-5.433	-3.935
[FRPR = 3]	-1.97	0.139	0.334	34.7	1	5.898	0.000	-2.625	-1.314
[FRPR = 4]	0.996	2.707	0.3	10.99	1	3.32	0.001	0.407	1.584
<b>Location</b>									
[IMON=1]	-3.327	0.036	1.993	2.787	1	1.669	0.095	-7.232	0.579
[IMON=2]	-4.589	0.010	0.481	91.044	1	9.541	0.000**	-5.531	-3.646
[IMON=3]	-3.216	0.040	0.378	72.222	1	8.508	0.000**	-3.957	-2.474
[IMON=4]	-1.637	0.195	0.351	21.775	1	4.664	0.000**	-2.325	-0.95
[IMON=5]	0a	.	.	.	0	.	.	.	.

Sig. <0.000\*\*

Sig. >0.01<0.05\*

Source: Authors' Computation, 2023

A test of parallel lines, as shown in Table 11, was carried out to evaluate the model's appropriateness. The test of parallel lines, also known as the proportional odds assumption test, is carried out using SPSS. Since there was no significant variation for the corresponding slope coefficients across the response categories, the model's parallelism assumption was supported by the significance p value=0.451 > 0.05. According to the null hypothesis, the model's slope coefficients are similar for all response categories.

**Table 11** Test of Parallel Lines

Model	-2 Log likelihood	Chi-Square	df	Sig.
Null Hypothesis	54.348			
General	42.416	11.932	12	0.451

Link function: logit

Source: Authors' Computation, 2023

## DISCUSSION OF FINDINGS

The regression result of the effect of the internal control system and risk management practice on preventing fraud risks is displayed in Tables 4.4 and 4.13. The odds ratio for each coefficient indicates the multiplicative change in the odds of being in a higher category of the dependent variable associated with a one-unit increase in the corresponding predictor variable, holding all other variables constant. The significance of each coefficient indicates whether the corresponding

predictor variable's effect is statistically significant. A significant coefficient (with a p-value < 0.05) indicates that the effect is likely not due to chance, while a non-significant coefficient suggests that the effect may be due to chance.

The odd ratio and the statistical significance (5%) of control activities revealed (low existence 0.119;  $p < 0.006$  and moderate existence 0.159;  $p = p < 0.006$ ), this showed that control activities have a significant likelihood of affecting fraud prevention compared to the reference category (very high existence). It implies that improving the principles of control activities will improve the state government's fraud prevention. Saleh (2016) and Agwor & Akani (2017), their study explained that the principle of control activities improves fraud prevention. Okoye et al. (2019) also confirmed using control activities to assist fraud risk management in organizations. The odd ratio and the statistical significance (5%) of information and communication revealed (no existence 0.083;  $p < 0.029$ ), this showed that information and communication had a significant likelihood of influencing fraud prevention than the reference category. It implies that the higher the presence of information and communication in state government entities, the lower programs are being implemented to prevent fraud. The result is supported by Adetiloye et al. (2016) and Nyakarimi et al. (2020) in their studies that establishing this principle aids fraud mitigation.

The odd ratio and the statistical significance (5%) of monitoring activities (low existence 0.010;  $p < 0.000$ , moderate existence 0.040;  $p < 0.000$ , and high existence 0.195;  $p < 0.000$ ) showed that monitoring has a significant likelihood of affecting fraud prevention than the reference category. It implies that as monitoring activities increase, fraud decreases and preventing it becomes minimal in the state government entities. The result is supported by Saleh (2016) and Kamaliah et al. (2018). The odd ratio and the statistical significance (5%) of the level of risk management practices (no existence 0.021;  $p < 0.001$ , low existence 0.020;  $p < 0.000$ , and moderate existence 0.144;  $p < 0.006$ ) showed that risk management practices have a significant likelihood of influencing fraud prevention than the reference category. It implies that an increase in risk management practices will reduce fraud and lead to lower efforts put into preventing fraud in state government entities. The result is in agreement with Kong et al. (2018), Tarjo et al. (2022), and Al-azzabi et al. (2023).

## CONCLUSION

This study examined how internal control and risk management practices affected fraud prevention among state governments in Southwestern Nigeria. It concluded that internal control using elements like control activities, information and communication, and monitoring negatively influenced fraud prevention among state governments in Southwestern Nigeria. The study, therefore, recommended that measures and policies preventing fraud risks, such as control activities, information and communication, and monitoring mechanisms, be addressed effectively, efficiently, and adequately implemented in the state governments to aid stronger accountability in public services and also that risk management programs be considered for practices for better performance in government sectors.

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## DECLARATION OF CONFLICT

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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