Control Environment and Fraud Prevention of Oil and Gas Companies in Rivers State

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Abstract
This study examined the relationship between control environment and fraud prevention of oil and gas companies in Rivers State. Specifically, the study investigated the relationship between control environment and detection and reporting effectiveness as well as asset protection effectiveness. The study was anchored on the Fraud Triangle Theory. A positivist research philosophy and descriptive survey research design were adopted. The population comprised 60 registered oil and gas companies operating in Rivers State with a total staff strength of 4,621. Using Taro Yamane's formula, a sample size of 367 respondents was determined. Primary data were collected through a structured questionnaire, of which 332 valid copies were retrieved and analyzed. Descriptive statistics comprising mean and standard deviation were used to analyze the research questions, while Pearson Product Moment Correlation (PPMC) was employed to test the hypotheses at a 0.05 level of significance. The findings revealed a very strong positive and statistically significant relationship between control environment and detection and reporting effectiveness ($r = 0.891$, $p = 0.000$). The study also found a very strong positive and statistically significant relationship between control environment and asset protection effectiveness ($r = 0.876$, $p = 0.000$). These results indicate that improvements in the control environment through ethical leadership, effective governance, accountability, and sound organizational structures significantly enhance fraud prevention in oil and gas companies. The study concluded that a strong control environment is fundamental to effective fraud prevention because it improves the timely detection and reporting of fraudulent activities while strengthening the protection of organizational assets. The study therefore recommended that management of oil and gas companies in Rivers State should strengthen ethical leadership, corporate governance, and accountability systems to improve fraud detection and reporting. It further recommended that organizations reinforce internal control policies, clearly define authority and responsibility, and establish effective asset safeguarding mechanisms to minimize fraud, theft, and asset misappropriation.

Keywords: *Control environment, fraud prevention, detection and reporting effectiveness, asset protection effectiveness, oil and gas companies, Rivers State.*

INTRODUCTION

Fraud has become one of the most critical challenges confronting organizations across the world, particularly in industries characterized by high-value financial transactions and complex operational activities such as the oil and gas sector. Fraud encompasses acts such as financial statement manipulation, asset misappropriation, procurement fraud, payroll fraud, bribery,

corruption, and unauthorized diversion of organizational resources. These practices reduce organizational profitability, weaken public confidence, damage corporate reputation, and hinder sustainable business growth (Albrecht et al., 2019).

The increasing sophistication of fraudulent activities has made organizations place greater emphasis on effective internal control systems as a mechanism for safeguarding assets and ensuring operational efficiency. According to Romney and Steinbart (2021), an effective internal control system minimizes opportunities for fraud by ensuring that organizational policies, procedures, and ethical standards are consistently followed. Likewise, Arens et al. (2020) argued that organizations with strong internal controls are more capable of preventing and detecting fraud than organizations with weak control systems.

Among the various components of internal control, the control environment is regarded as the foundation upon which every other control component depends. The control environment reflects management's philosophy, ethical values, organizational culture, governance practices, commitment to competence, assignment of authority and responsibility, and human resource policies that influence employees' behaviour within an organization (Messier et al., 2019). When management demonstrates integrity and ethical leadership, employees are more likely to comply with organizational policies and internal control procedures. Conversely, weak ethical leadership encourages management override, abuse of authority, and fraudulent behaviour (Hayes et al., 2020).
According to Owojori and Asaolu (2009), organizations with sound governance structures and effective internal control environments experience lower incidences of fraud because employees understand the consequences of violating organizational policies. Similarly, Adebayo, Olagunju and Bankole (2022) observed that effective fraud risk management practices, particularly strong internal controls, significantly reduce fraudulent activities within Nigeria's oil and gas sector. Their findings indicate that internal control remains one of the most effective mechanisms for reducing occupational fraud in organizations.

Nigeria's oil and gas industry remains the backbone of the nation's economy, contributing significantly to government revenue, foreign exchange earnings, employment generation, and economic development. Rivers State serves as one of the major oil-producing states in Nigeria, hosting numerous multinational and indigenous oil and gas companies. Despite the enormous financial resources generated by the industry, cases of procurement fraud, contract inflation, financial misappropriation, oil theft, bribery, corruption, and financial reporting irregularities continue to threaten organizational performance and investor confidence (Adebayo et al., 2022).
The operational complexity of oil and gas companies, involving multiple contractors, extensive procurement systems, geographically dispersed facilities, and huge financial transactions, increases exposure to fraud risks. According to Wells (2017), organizations operating in environments characterized by weak ethical culture and inadequate oversight are more vulnerable to occupational fraud because employees often exploit weaknesses within the internal control system. Therefore, strengthening the control environment becomes imperative in reducing fraud opportunities.

Fraud prevention refers to proactive measures established by organizations to discourage fraudulent behaviour before it occurs. These measures include ethical leadership, segregation of

duties, employee training, effective supervision, accountability mechanisms, strong governance structures, and compliance with internal control policies (Singleton & Singleton, 2010). Effective fraud prevention therefore depends largely on the strength of the organization's control environment. Although previous studies have examined internal control systems, fraud risk management, forensic accounting, and corporate governance in relation to fraud prevention, relatively few studies have specifically investigated the influence of the control environment on fraud prevention within oil and gas companies operating in Rivers State. This gap provides the motivation for this study.

Statement of the study

Fraud has continued to pose serious financial and operational challenges to oil and gas companies in Nigeria despite increasing investments in internal control systems and corporate governance mechanisms. Cases involving procurement fraud, contract inflation, payroll manipulation, bribery, corruption, financial statement manipulation, asset misappropriation, and unauthorized diversion of company resources continue to occur, resulting in financial losses, reputational damage, reduced investor confidence, and declining organizational performance (Albrecht et al., 2019).

Several oil and gas companies have adopted internal control frameworks aimed at minimizing fraud. However, the effectiveness of these frameworks depends largely on the quality of the control environment. According to Hayes et al. (2020), organizations characterized by weak ethical leadership, ineffective governance, poor accountability, management override of controls, and inadequate supervision are more susceptible to fraudulent practices regardless of the sophistication of their internal control procedures.

Empirical studies have largely focused on internal control systems, forensic accounting, audit quality, corporate governance, and fraud risk management as determinants of fraud prevention. For instance, Adebayo et al. (2022) established that fraud risk management techniques significantly reduce fraud in Nigeria's oil and gas industry. Similarly, Kanu, Ugwudioha and Azu (2025) found that elements of the internal control system influence fraud prevention, although the effectiveness of specific components differs across organizations.

Despite these studies, limited empirical evidence exists on the specific role of the control environment as an independent predictor of fraud prevention among oil and gas companies in Rivers State. Most previous studies examined internal control as a composite construct without isolating the contribution of the control environment. Consequently, there remains inadequate evidence on how ethical values, management commitment, organizational structure, governance practices, and accountability mechanisms influence fraud prevention within the oil and gas industry in Rivers State. It is this identified knowledge gap that necessitated this study, which seeks to examine the relationship between control environment and fraud prevention of oil and gas companies in Rivers State.

Objective of the study

The main objective of this study is to examine the relationship between control environment and fraud prevention of oil and gas companies in Rivers State. Specifically, the study sought to:

1. examine the relationship between control environment and detection and reporting effectiveness of oil and gas companies in Rivers State; and

2. ascertain the relationship between control environment and asset protection effectiveness of oil and gas companies in Rivers State.

Hypothesis

H_{01}: There is no significant relationship between control environment and detection and reporting effectiveness in oil and gas companies in Rivers State.

H_{02}: There is no significant relationship between control environment and asset protection effectiveness in oil and gas companies in Rivers State.

Conceptual Framework

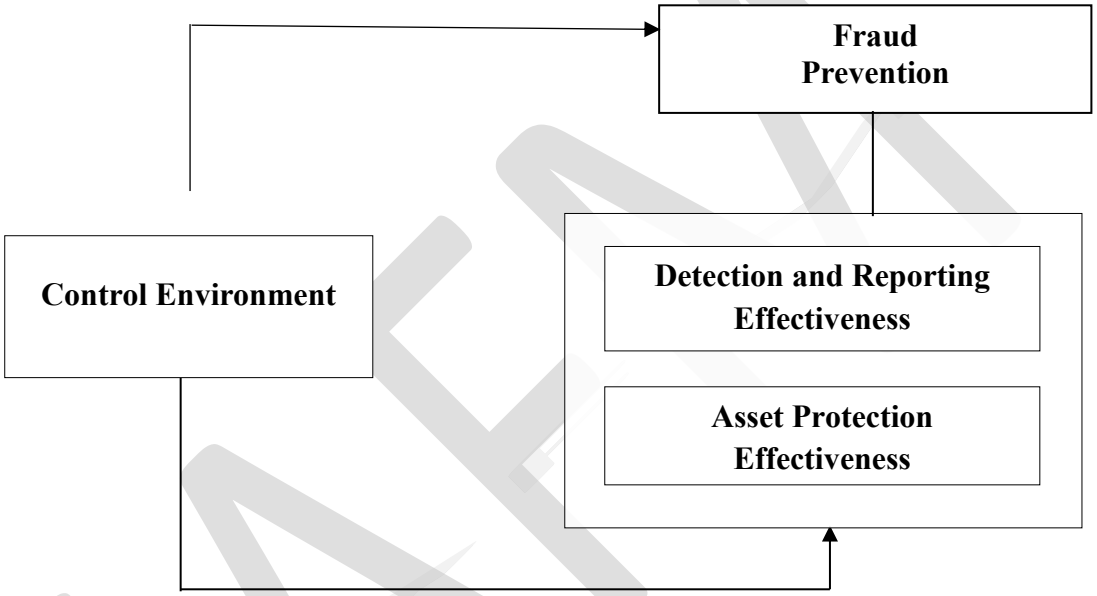


Figure 1.: Conceptual Framework between internal control environment and fraud prevention.
Source: Adebayo, Olagunju & Bankole, (2022).

THEORETICAL REVIEW

Fraud Triangle Theory (Cressey, 1953)

Fraud Triangle Theory was first proposed by Donald Cressey in 1953 to explain why individuals commit occupational fraud. The theory posits that fraud occurs when three key elements converge: pressure (or incentive), opportunity, and rationalization. Pressure refers to a personal or organizational need that motivates fraudulent behavior, such as financial difficulties, performance targets, or the desire for personal gain. Opportunity is the situation that enables fraud to occur, often due to weak internal controls or inadequate oversight. Rationalization involves the cognitive process through which the perpetrator justifies their unethical actions (Cressey, 1953; Albrecht et al., 2012).



Figure 2: The Fraud Triangle

The present study is particularly anchored on the opportunity element of the Fraud Triangle Theory because the control environment represents the foundation of an organization's internal control system. A strong control environment characterized by ethical leadership, integrity, effective governance, clear organizational structure, accountability, segregation of duties, and management's commitment to internal controls substantially reduces opportunities for employees to perpetrate fraud. Conversely, a weak control environment creates loopholes that encourage fraud by providing employees with opportunities to override controls, manipulate records, or misappropriate organizational assets (COSO, 2013; Albrecht et al., 2019). Thus, strengthening the control environment directly addresses one of the principal drivers of fraudulent behaviour identified by the Fraud Triangle Theory.

Furthermore, oil and gas companies in Rivers State operate in an environment involving high-value contracts, extensive procurement activities, multiple stakeholders, and complex financial transactions, making them particularly vulnerable to fraud if effective control mechanisms are absent. The Fraud Triangle Theory suggests that while management may not always eliminate employees' financial pressures or personal rationalizations, organizations can significantly reduce fraud by limiting opportunities through a robust control environment. Therefore, this theory provides a sound theoretical basis for examining how an effective control environment can enhance fraud prevention in oil and gas companies in Rivers State by discouraging unethical practices and strengthening organizational accountability (Singleton & Singleton, 2010; Wells, 2017).

The Fraud Triangle Theory is closely related to this study because both recognize that opportunity is a critical factor influencing the occurrence of fraud. While the theory explains that fraud becomes possible when individuals have opportunities created by weak internal controls, this study specifically investigates the control environment, which is the component of internal control responsible for establishing ethical values, management commitment, governance practices, and accountability. Since an effective control environment minimizes opportunities for fraudulent behaviour, the theory aligns directly with the study's objective of examining the relationship between control environment and fraud prevention in oil and gas companies.

Similarly, both the Fraud Triangle Theory and this study emphasize the importance of preventive rather than reactive measures in combating fraud. The theory advocates reducing opportunities before fraud occurs, while this study focuses on how a strong control environment can proactively prevent fraud through ethical leadership, effective supervision, organizational discipline, and compliance with established policies and procedures. Therefore, the theory provides an appropriate

conceptual foundation for understanding how strengthening the control environment contributes to effective fraud prevention within oil and gas companies in Rivers State.

CONCEPTUAL REVIEW

Control Environment

The control environment is widely recognized as the cornerstone of an organization's internal control system because it establishes the ethical climate, governance structure, and organizational culture that influence employees' attitudes toward compliance and accountability. It comprises the standards, processes, and structures that provide the foundation for carrying out internal control across an organization. According to the Committee of Sponsoring Organizations of the Treadway Commission (COSO, 2013), the control environment reflects management's commitment to integrity, ethical values, competence, oversight responsibility, organizational structure, and the assignment of authority and responsibility. A sound control environment promotes discipline, transparency, and accountability, thereby enhancing the effectiveness of other internal control components.

Scholars have emphasized that the control environment significantly influences employees' behaviour and organizational performance. Arens et al. (2020) describe the control environment as management's overall attitude, awareness, and actions regarding the importance of internal control within an organization. Similarly, Messier et al. (2019) argue that management's philosophy and operating style, ethical leadership, human resource policies, and governance practices determine whether employees comply with organizational rules and internal control procedures. Where management consistently demonstrates integrity and ethical conduct, employees are more likely to uphold organizational values, thereby reducing the likelihood of fraudulent practices and operational inefficiencies.

The control environment consists of several interrelated elements that collectively strengthen organizational governance. These elements include integrity and ethical values, commitment to competence, board of directors' independence and oversight, management's philosophy and operating style, organizational structure, assignment of authority and responsibility, and human resource policies and practices (Hayes et al., 2020). Effective implementation of these elements creates an environment where responsibilities are clearly defined, employees are properly supervised, ethical behaviour is encouraged, and deviations from organizational policies are promptly identified and corrected. Consequently, organizations with strong control environments are better positioned to achieve operational objectives, ensure reliable financial reporting, and comply with applicable laws and regulations.

Within the oil and gas industry, the importance of the control environment cannot be overstated because of the industry's high-value transactions, extensive procurement activities, and exposure to fraud risks. A robust control environment strengthens fraud prevention by promoting ethical leadership, enforcing accountability, ensuring effective supervision, and reducing opportunities for management override and employee misconduct. According to Albrecht et al. (2019), organizations that maintain a strong control environment experience lower incidences of occupational fraud because employees are less likely to exploit control weaknesses. Likewise, Romney and Steinbart (2021) maintain that a well-established control environment enhances the effectiveness of the entire internal control system by fostering a culture of integrity, compliance, and responsible stewardship of organizational resources.

Fraud Prevention

Fraud prevention refers to the proactive measures, policies, procedures, and control mechanisms implemented by an organization to deter fraudulent activities before they occur. Unlike fraud detection, which focuses on identifying fraudulent acts after they have been committed, fraud prevention emphasizes creating an environment that minimizes opportunities, motivations, and justifications for fraud. According to Wells (2017), fraud prevention involves establishing effective internal controls, promoting ethical conduct, enforcing accountability, and developing organizational systems that discourage employees from engaging in dishonest behaviour. Similarly, Albrecht et al. (2019) define fraud prevention as the systematic process of designing and implementing governance structures, internal controls, and risk management practices that reduce the likelihood of occupational fraud and protect organizational assets.

Effective fraud prevention depends largely on the strength of an organization's internal control system and corporate governance framework. Romney and Steinbart (2021) argue that organizations with robust internal controls including segregation of duties, proper authorization procedures, physical safeguards, independent verification, and continuous monitoring are less susceptible to fraudulent activities. Likewise, Singleton and Singleton (2010) assert that management's commitment to integrity, ethical leadership, employee training, whistleblowing mechanisms, and strict enforcement of organizational policies significantly enhance fraud prevention efforts. These preventive measures foster a culture of transparency and accountability, thereby reducing opportunities for employees to manipulate financial records, misappropriate assets, or engage in corrupt practices.

In the oil and gas industry, fraud prevention is particularly critical because of the sector's high-value contracts, complex procurement processes, extensive supply chains, and large volumes of financial transactions, which increase exposure to fraud risks. A comprehensive fraud prevention programme therefore requires strong ethical leadership, an effective control environment, periodic fraud risk assessments, regular internal and external audits, employee awareness programmes, and continuous monitoring of organizational activities. According to Kranacher et al. (2018), organizations that integrate fraud prevention into their governance and risk management frameworks are better equipped to reduce fraud losses, enhance operational efficiency, and maintain stakeholder confidence. Consequently, effective fraud prevention contributes not only to safeguarding organizational resources but also to improving financial performance, corporate reputation, and long-term organizational sustainability.

Measures of Fraud Prevention

Detection and Reporting Effectiveness

Detection and reporting effectiveness refers to an organization's ability to promptly identify fraudulent activities, irregularities, or violations of internal policies and accurately communicate such incidents to the appropriate authorities for timely corrective action. It encompasses the efficiency of internal control systems, audit mechanisms, whistleblowing channels, and reporting procedures in uncovering fraud before it causes significant financial or reputational damage. According to Wells (2017), effective fraud detection and reporting involve continuous monitoring, regular audits, data analysis, and the establishment of confidential reporting mechanisms that encourage employees to disclose unethical practices without fear of retaliation. Timely detection and reporting are essential for minimizing fraud losses and strengthening organizational accountability.

An effective detection and reporting system relies on several organizational mechanisms, including internal audits, external audits, forensic investigations, management reviews, automated monitoring systems, and whistleblower programmes. Albrecht et al. (2019) argue that organizations with strong reporting structures are better positioned to identify fraudulent transactions, investigate suspicious activities, and initiate appropriate disciplinary or legal actions. Similarly, Kranacher et al. (2018) maintain that detection effectiveness improves when organizations integrate technology-driven monitoring tools, establish clear reporting lines, encourage ethical behaviour, and ensure management responds promptly to reported fraud cases. These mechanisms increase the likelihood that fraudulent acts will be identified at an early stage before they escalate into significant financial losses.

Within the oil and gas industry, detection and reporting effectiveness is particularly important because of the industry's complex operations, large-scale procurement activities, and substantial financial transactions that expose organizations to various fraud risks. Effective detection and reporting systems enhance transparency, strengthen internal accountability, and facilitate regulatory compliance by ensuring that fraud incidents are promptly identified, documented, and investigated. Romney and Steinbart (2021) observed that organizations with efficient fraud detection and reporting systems experience lower fraud losses because employees recognize the high probability of detection and subsequent sanctions. Therefore, effective detection and reporting constitute a critical dimension of fraud prevention by discouraging fraudulent behaviour and promoting sound corporate governance.

Asset Protection Effectiveness

Asset protection effectiveness refers to the extent to which an organization safeguards its physical assets, financial resources, information systems, intellectual property, and other valuable resources against theft, misuse, loss, damage, or unauthorized access. It reflects the organization's ability to design and implement internal control measures that preserve the integrity, availability, and security of organizational assets. According to Romney and Steinbart (2021), asset protection involves establishing appropriate authorization procedures, segregation of duties, physical security measures, access controls, inventory management systems, and documentation processes that collectively reduce opportunities for asset misappropriation. Effective asset protection contributes significantly to operational efficiency and organizational sustainability.

Organizations employ various strategies to enhance asset protection effectiveness, including physical safeguards, periodic asset verification, inventory reconciliation, surveillance systems, computerized access controls, insurance coverage, and continuous monitoring of asset utilization. Albrecht et al. (2019) noted that organizations with comprehensive asset protection mechanisms experience lower incidences of asset misappropriation because employees have limited opportunities to access or manipulate organizational resources without authorization. Likewise, Arens et al. (2020) emphasized that effective asset protection depends on management's commitment to internal control, employee accountability, regular audits, and strict compliance with organizational policies governing the custody and use of assets.

In the oil and gas sector, asset protection effectiveness is particularly critical because organizations manage high-value assets such as drilling equipment, pipelines, petroleum products, storage facilities, vehicles, machinery, and financial resources. Weak asset protection controls may expose organizations to theft, vandalism, inventory losses, unauthorized utilization of equipment, and diversion of petroleum products, resulting in substantial financial losses. Wells (2017) argues that organizations with strong internal controls and effective asset protection systems are better able to

safeguard resources, improve operational efficiency, reduce fraud risks, and maintain stakeholder confidence. Therefore, asset protection effectiveness remains a key indicator of the success of an organization's fraud prevention and internal control framework.

EMPIRICAL REVIEW

Albrecht et al. (2019) investigated the relationship between internal control systems and fraud prevention among large multinational corporations in the United States. The study sought to determine whether the effectiveness of the control environment influences the occurrence of occupational fraud within organizations. A descriptive survey research design was adopted, while data were obtained from internal auditors, accountants, compliance officers, and risk managers across 150 organizations. The data were analyzed using descriptive statistics and multiple regression analysis. The findings revealed that organizations characterized by strong ethical leadership, effective governance structures, clear organizational responsibilities, and management commitment to internal controls experienced significantly lower incidences of occupational fraud. The study further established that the control environment serves as the foundation for the effectiveness of all other internal control components and significantly improves fraud prevention outcomes. Although the study established a significant relationship between the control environment and fraud prevention, it was conducted in developed economies and focused on multinational corporations. The present study differs by concentrating on oil and gas companies operating in Rivers State, Nigeria, where organizational and regulatory environments differ considerably.

Adebayo et al. (2022) examined the effect of fraud risk management practices on fraud reduction in selected oil and gas companies in Nigeria. The study specifically assessed how internal control mechanisms, fraud awareness, risk assessment, and management commitment influence fraud prevention. A cross-sectional survey design was adopted, and primary data were collected from 312 management and accounting personnel using structured questionnaires. The hypotheses were tested using Structural Equation Modelling (SEM). The findings indicated that organizations with strong internal control systems, effective ethical policies, and proactive fraud risk management practices experienced significantly lower levels of occupational fraud. The study further revealed that management commitment and organizational ethical culture positively influenced fraud prevention within the oil and gas sector. However, the study considered fraud risk management as a broad construct without isolating the control environment as an independent predictor of fraud prevention. This study therefore seeks to fill this gap by specifically examining the influence of the control environment on fraud prevention in oil and gas companies located in Rivers State.

Kanu et al. (2025) investigated the effect of the internal control system on fraud prevention in the Central Bank of Nigeria. The study aimed to determine the extent to which the components of internal control contribute to minimizing fraudulent practices. The researchers adopted a descriptive survey design and collected data from 286 staff members through structured questionnaires. Data analysis was conducted using Pearson Product Moment Correlation and multiple regression techniques. The study found that a strong control environment, effective risk assessment, well-designed control activities, efficient information and communication systems, and continuous monitoring significantly enhanced fraud prevention. Specifically, the control environment was identified as one of the strongest predictors of fraud prevention because it promotes ethical behaviour, accountability, and management commitment to internal controls. Despite its contribution, the study focused on a public financial institution rather than private-sector organizations. Consequently, its findings may not adequately reflect the peculiar operational

characteristics of oil and gas companies. The present study therefore extends the literature by examining oil and gas companies in Rivers State.

Eke and Nwaiwu (2021) examined the influence of internal control systems on fraud prevention among manufacturing firms in South-South Nigeria. The study specifically evaluated the effect of the control environment, control activities, and monitoring on organizational fraud prevention. A survey research design was employed, and data were collected from 214 finance officers, internal auditors, and operational managers using structured questionnaires. The hypotheses were tested using multiple regression analysis. The findings showed that the control environment had a positive and statistically significant effect on fraud prevention. The study concluded that organizations with ethical leadership, effective governance structures, clearly defined responsibilities, and competent employees experienced fewer fraud incidents than organizations characterized by weak organizational cultures. The limitation of the study lies in its focus on manufacturing firms rather than oil and gas companies. Since fraud risks differ across industries, the findings cannot be fully generalized to the petroleum sector. This study addresses that limitation by focusing specifically on oil and gas companies in Rivers State.

Ogoun and Okoye (2023) investigated the relationship between corporate governance mechanisms and fraud prevention among petroleum marketing companies in the Niger Delta region of Nigeria. The study sought to determine whether ethical leadership, board oversight, organizational culture, and accountability influence fraud prevention. A correlational research design was adopted, while primary data were obtained from 265 senior management staff using structured questionnaires. Pearson Product Moment Correlation and multiple regression analyses were employed in testing the hypotheses. The results revealed that ethical leadership, organizational accountability, management commitment, and effective governance significantly enhanced fraud prevention within petroleum marketing companies. The study concluded that organizations with stronger control environments recorded lower incidences of procurement fraud, financial irregularities, and asset misappropriation. Although the study examined petroleum marketing companies within the Niger Delta, it focused primarily on corporate governance mechanisms without comprehensively assessing the broader dimensions of the control environment. Furthermore, it did not specifically investigate oil and gas companies operating in Rivers State. The present study therefore bridges this gap by examining the relationship between the control environment and fraud prevention among oil and gas companies in Rivers State.

METHODOLOGY

The study was anchored on the positivist research philosophy. Positivism assumes that social phenomena can be studied objectively using scientific methods and that relationships among variables can be measured and analyzed statistically. The study adopted a descriptive survey research design. This design was appropriate because it allows for systematic collection of data from multiple oil and gas companies in Rivers State to describe the current state of internal control systems and their impact on fraud prevention.

The population of this study comprised all the 60 oil and gas companies registered and operating in Rivers State with staff strength of 4621. Taro Yamane's sample size determination formula was used in determining the sample size that was used in this research work. Hence, a sample size of three hundred and sixty-seven (367) formed the sample size for the study. The primary data collection instrument was a structured questionnaire, designed based on the study's conceptual framework and relevant literature.

Data was collected through self-administered questionnaire delivered to respondents via email and physical visits, depending on availability and access to respondents. The collected data were analyzed using descriptive and inferential statistics. Descriptive statistics summarized respondents' demographic information and the level of internal control system implementation. Inferential statistics, particularly Pearson correlation analysis tested the relationship between control environment and fraud prevention.

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

Descriptive Statistics (Univariate Analyses)

Control Environment as a Dimension of Internal Control System

The responses rate of respondents on control environment as a dimension was analyzed and interprets using mean score and standard deviation, below is the empirical result obtained from the questionnaire items.

Table 1 Indicates the Analysis of Descriptive Statistics on Control Environment

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
The management of this organization demonstrates strong commitment to ethical values and integrity in financial operations.	332	4.03	.122	.753
The leadership of this organization promotes accountability and transparency in all financial activities.	332	4.66	.078	.481
Management ensures that competent and qualified personnel are assigned to key financial control positions.	332	4.32	.114	.702
Valid N (listwise)	332			

Source: SPSS Version 26 Output, 2026

Table 1 showed the response rates of the respondents and frequency for control environment and measured on a 3-item research instrument and scaled on a 5-point Likert scale. The responses showed a mean score of 4.03, 4.66 and 4.32 respectively which indicate a very high range in the scale. The result showed that all the items were accepted with mean scores higher than the criterion mean of 2.50; this indicates that the responses of the respondents are considered high range in the scale used in measurement. Therefore, control environment has a significant relationship with fraud prevention in oil and gas companies in Rivers State.

Detection and Reporting Effectiveness as a Measure of Fraud Prevention

The responses rate of respondents on detection and reporting effectiveness as a measure of fraud prevention was analyzed and interprets using mean score and standard deviation, below is the empirical result obtained from the questionnaire items.

Table 2: Indicates the Analysis of Descriptive Statistics on Detection and Reporting Effectiveness

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Fraudulent activities are promptly detected within the organization through effective monitoring systems.	332	4.08	.044	.273
There are clear and established procedures for reporting suspected fraud cases in the organization.	332	4.55	.111	.686
Detected fraud cases are accurately documented and communicated to appropriate authorities for action.	332	4.79	.067	.413
Valid N (listwise)	332			

Source: SPSS Version 26 Output, 2026

Table 2 showed the response rates of the respondents and mean and standard deviation for detection and reporting effectiveness and measured on a 3-item research instrument and scaled on a 5-point Likert scale. The responses showed a mean score of 4.08, 4.55 and 4.79 respectively which indicate a very high range in the scale. The result showed that all the items were accepted with mean scores higher than the criterion mean of 2.50 which indicates that detection and reporting effectiveness has a strong relationship with internal control systems in oil and gas companies in Rivers State.

Asset Protection Effectiveness as a Measure of Fraud Prevention

The responses rate of respondents on asset protection effectiveness as a measure was analyzed and interprets using mean score and standard deviation, below is the empirical result obtained from the questionnaire items.

Table 3: Indicates the Analysis of Descriptive Statistics on Asset Protection Effectiveness

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
The organization has effective measures in place to safeguard its physical and financial assets from misuse or theft.	332	4.02	.079	.721

Regular checks and verification procedures are conducted to ensure the security of assets.	332	3.99	.080	.710
Adequate systems are in place to monitor the use and movement of assets within the organization.	332	4.22	.811	.813
Valid N (listwise)	332			

Source: SPSS Version 26 Output, 2026

Table 3 showed the response rates of the respondents and mean and standard deviation for asset protection effectiveness and measured on a 3-item research instrument and scaled on a 5-point Likert scale. The responses showed a mean score of 4.02,3.99 and 4.22 respectively which indicate a very high range in the scale. The result showed that all the items were accepted with mean scores higher than the criterion mean of 2.50 which indicates that asset protection effectiveness has a strong relationship with internal control system of oil and gas companies in Rivers State.

Inferential Statistics (Bivariate Analysis)
Test of Hypotheses

Hypothesis 1
H_{01}: There is no significant relationship between control environment and detection and reporting effectiveness in oil and gas companies in Rivers State.

The Pearson correlation analysis was used to test Hypothesis One. The result in Table 4.14 presents the relationship between control environment and detection and reporting effectiveness in oil and gas companies in Rivers State.

Table 4: Indicates Correlations Analysis on Control Environment and Detection and Reporting Effectiveness

		Control Environment	Efficiency
Control Environment	Pearson Correlation	1	.922**
	Sig. (2-tailed)		.000
	N	332	332
Detection and Reporting Effectiveness	Pearson Correlation	.891**	1
	Sig. (2-tailed)	.000	
	N	332	332

**. Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS Version 26 Output, 2026

Research Question 1: What is the relationship between control environment and detection and reporting effectiveness in oil and gas companies in Rivers State?

Table 4 reveals a positive and significant relationship between control environment and detection and reporting effectiveness with a rho value of 0.922. This indicates that there is a high strength in correlation, though positive between both variables.

H_{01}: There is no significant relationship between control environment and detection and reporting effectiveness of oil and gas companies in Rivers State.

The result in Table 4 presents the Pearson correlation analysis showing the relationship between control environment and detection and reporting effectiveness in oil and gas companies in Rivers State. The Pearson correlation coefficient between control environment and detection and reporting effectiveness is 0.891, which indicates a very strong positive relationship between the two variables. This means that as the quality of the control environment improves, the effectiveness of detection and reporting systems in oil and gas companies also increases significantly.

The significance value (p-value) is 0.000, which is less than the 0.05 level of significance. This shows that the relationship is statistically significant, meaning it did not occur by chance. Therefore, the null hypothesis (H_{01}), which states that there is no significant relationship between control environment and detection and reporting effectiveness, is rejected. This implies that a strong control environment characterized by good governance, ethical leadership, clear policies, and effective oversight plays a crucial role in enhancing the ability of oil and gas companies in Rivers State to detect irregularities and report financial or operational issues effectively. The findings confirm that there is a significant and strong positive relationship between control environment and detection and reporting effectiveness in the studied firms.

Table 5: Indicates Correlation Analysis on Control Environment and Asset Protection Effectiveness

		Control Environment	Asset Protection Effectiveness
Control Environment	Pearson Correlation	1	.876**
	Sig. (2-tailed)		.000
	N	332	332
Asset Protection Effectiveness	Pearson Correlation	.876**	1
	Sig. (2-tailed)	.000	
	N	332	332

**. Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS Version 26 Output, 2026

Research Question 2: What is the relationship between control environment and asset protection effectiveness in oil and gas companies in Rivers State?

Table 5 reveals a positive and significant relationship between control environment and asset protection effectiveness with a rho value of 0.876. This indicates that there is a high strength in correlation, though positive between both variables.

Hypothesis 2

H_{02}: There is no significant relationship between control environment and asset protection effectiveness in oil and gas companies in Rivers State.

The Pearson correlation analysis was used to test Hypothesis Two. The result in Table 5 presents the relationship between control environment and asset protection effectiveness in oil and gas companies in Rivers State. The result in Table 5 presents the Pearson correlation analysis showing the relationship between control environment and asset protection effectiveness in oil and gas companies in Rivers State. The Pearson correlation coefficient between control environment and asset protection effectiveness is 0.876, which indicates a very strong positive relationship between the two variables. This implies that improvements in the control environment are associated with significant increases in the effectiveness of asset protection mechanisms within oil and gas companies.

The significance value (p-value) is 0.000, which is less than the 0.05 level of significance. This indicates that the relationship is statistically significant and did not occur by chance. Therefore, the null hypothesis (H_{02}) is rejected. This implies that a well-established control environment characterized by strong internal policies, ethical standards, proper supervision, and effective organizational structure plays a critical role in safeguarding company assets. It enhances the ability of oil and gas firms in Rivers State to prevent asset misappropriation, misuse, and loss. The findings therefore confirm that there is a significant and strong positive relationship between control environment and asset protection effectiveness in the studied firms.

Discussion of Findings

This study examined the relationship between control environment and fraud prevention of oil and gas companies. Based on the analysis, the findings of this study confirmed that there was a strong positive effect on the study variables.

Relationship between Control Environment, Detection and Reporting Effectiveness

The result of the analysis revealed a very strong positive relationship between control environment and detection, reporting effectiveness in oil and gas companies in Rivers State, as indicated by a correlation coefficient of 0.891. This implies that improvements in the control environment leads to a corresponding increase in the effectiveness of detection and reporting systems in the studied firms.

The result further showed a p-value of 0.000, which is less than the 0.05 level of significance. This indicates that the relationship is statistically significant and did not occur by chance. Consequently, the null hypothesis, which states that there is no significant relationship between control environment and detection and reporting effectiveness, was rejected. This finding suggests that a

strong control environment characterized by ethical leadership, clear policies, effective supervision, and sound governance systems enhances the ability of oil and gas companies to detect irregularities and ensure proper reporting of financial and operational issues. This finding is consistent with the study of Olorunfemi (2025), who found that a strong control environment significantly improves internal monitoring systems and enhances financial reporting quality in oil and gas firms in Nigeria. Similarly, Yahaya and Bello (2026) reported that organizations with effective internal control environments tend to exhibit stronger oversight mechanisms, leading to improved detection and reporting performance.

Relationship between Control Environment and Asset Protection Effectiveness

The result of the analysis revealed a very strong positive relationship between control environment and asset protection effectiveness in oil and gas companies in Rivers State, as indicated by a correlation coefficient of 0.876. This implies that improvements in the control environment led to a corresponding increase in the effectiveness of asset protection mechanisms in the studied firms. The result further showed a p-value of 0.000, which is less than the 0.05 level of significance. This indicates that the relationship is statistically significant and did not occur by chance. Consequently, the null hypothesis, which states that there is no significant relationship between control environment and asset protection effectiveness, was rejected.

This finding suggests that a strong control environment characterized by ethical leadership, clear organizational structure, effective supervision, and strong internal governance systems enhances the safeguarding of organizational assets. It reduces the likelihood of asset misappropriation, loss, theft, or misuse, thereby strengthening internal control systems in oil and gas companies in Rivers State.

This finding is consistent with the study of Okafor and Eze (2025), who reported that a strong control environment significantly improves asset safeguarding practices and reduces operational losses in manufacturing and extractive industries. Similarly, Akinyemi and Ibrahim (2026) found that organizations with strong governance structures and internal control environments experience higher levels of asset security and reduced vulnerability to fraud and mismanagement. Hence, the finding confirms that an effective control environment plays a crucial role in strengthening asset protection effectiveness in oil and gas companies in Rivers State.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study examined the relationship between control environment and fraud prevention of oil and gas companies in Rivers State, using detection and reporting effectiveness and asset protection effectiveness as measures of fraud prevention. Drawing on responses from 332 staff of registered oil and gas companies, the study found a very strong, positive and statistically significant relationship between control environment and detection and reporting effectiveness ($r = 0.891$, $p < 0.05$), as well as between control environment and asset protection effectiveness ($r = 0.876$, $p < 0.05$). Both null hypotheses were therefore rejected. These results show that the way a company is led, governed and held to account is closely tied to its ability to uncover irregularities early, report them accurately and keep its assets safe.

The study therefore concludes that the control environment is the foundation on which effective fraud prevention rests in oil and gas companies in Rivers State. Ethical leadership, management

commitment to integrity, a clear organisational structure, sound governance and firm accountability shape employees' attitudes and reduce the opportunities and rationalisations that, according to the Fraud Triangle Theory, give rise to fraud. Sophisticated control procedures cannot succeed on their own where the tone at the top is weak; companies that deliberately invest in their control environment are better placed to detect, report and deter fraud, and to protect the assets on which their operations depend.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Management and boards of oil and gas companies in Rivers State should strengthen the ethical tone at the top by adopting and enforcing a written code of conduct, demonstrating ethical leadership, and applying sanctions consistently, so that irregularities are detected promptly and reported accurately.
2. Oil and gas companies should establish clear lines of authority, segregation of duties and accountability systems, supported by regular asset verification, access controls and close supervision, in order to safeguard company assets against misuse, theft and loss.
3. Boards of directors should reinforce governance oversight through active audit committees, an independent internal audit function and protected whistleblowing channels, and should review the control environment periodically while training staff on fraud awareness and internal control policies.

REFERENCES

Adebayo, A. O., Olagunju, A., & Bankole, O. E. (2022). Fraud risk management and fraud reduction: Evidence from the Nigerian oil and gas sector. *Malaysian Management Journal, 26*, 145–168. https://doi.org/10.32890/mmj2022.26.6

Albrecht, W. S., Albrecht, C. C., Albrecht, C. O., & Zimbelman, M. F. (2019). *Fraud examination* (6th ed.). Cengage Learning.

Arens, A. A., Elder, R. J., Beasley, M. S., & Hogan, C. E. (2020). *Auditing and assurance services: An integrated approach* (17th ed.). Pearson.

Committee of Sponsoring Organizations of the Treadway Commission. (2013). *Internal control—Integrated framework*. COSO.

Cressey, D. R. (1953). *Other people's money: A study in the social psychology of embezzlement*. Free Press.

Hayes, R., Dassen, R., Schilder, A., & Wallage, P. (2020). *Principles of auditing: An introduction to international standards on auditing* (4th ed.). Pearson.

Kanu, N. O., Ugwudioha, O., & Azu, N. P. (2025). Effect of internal control system on the prevention of fraud in the Central Bank of Nigeria. *International Journal of Economics and Financial Issues, 15*(5), 407–415.

Kranacher, M. J., Riley, R. A., & Wells, J. T. (2018). *Forensic accounting and fraud examination* (2nd ed.). John Wiley & Sons.

Messier, W. F., Glover, S. M., & Prawitt, D. F. (2019). *Auditing and assurance services: A systematic approach* (11th ed.). McGraw-Hill Education.

Owojori, A. A., & Asaolu, T. O. (2009). The role of internal control system in fraud prevention in Nigerian organizations. *Journal of Business and Management*, 3(1), 49–59.

Romney, M. B., & Steinbart, P. J. (2021). *Accounting information systems* (15th ed.). Pearson.

Singleton, T. W., & Singleton, A. J. (2010). *Fraud auditing and forensic accounting* (4th ed.). John Wiley & Sons.

Wells, J. T. (2017). *Corporate fraud handbook: Prevention and detection* (5th ed.). John Wiley & Sons.