Risk Assessment and Fraud Prevention of Oil and Gas Companies in Rivers State

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Abstract
This study examined the relationship between risk assessment and fraud prevention of oil and gas companies in Rivers State. The specific objectives were to determine the relationship between risk assessment and asset protection effectiveness and to examine the relationship between risk assessment and compliance with internal policies. The study was anchored on Agency Theory. A descriptive survey research design was adopted, guided by the positivist research philosophy. The population comprised 4,621 employees drawn from 60 registered oil and gas companies in Rivers State. Using Taro Yamane's formula, a sample size of 367 respondents was determined, while 332 valid questionnaires were retrieved and used for the analysis. Data were collected using a structured questionnaire and analyzed using descriptive statistics (mean and standard deviation) and inferential statistics (Pearson Product Moment Correlation Coefficient) with the aid of SPSS version 26 at a 0.05 level of significance. The findings revealed a very strong positive and statistically significant relationship between risk assessment and asset protection effectiveness ($r = 0.869$, $p < 0.05$). Similarly, risk assessment exhibited a very strong positive and statistically significant relationship with compliance with internal policies ($r = 0.895$, $p < 0.05$). The study concluded that effective risk assessment significantly enhances fraud prevention by strengthening asset protection mechanisms and improving compliance with internal policies in oil and gas companies in Rivers State. The study recommended that oil and gas companies should institutionalize continuous and systematic risk assessment practices to facilitate early identification of fraud risks, strengthen preventive controls, improve asset protection, and promote strict compliance with internal policies to minimize fraudulent activities.

Keywords: *Risk Assessment, Fraud Prevention, Asset Protection Effectiveness, Compliance with Internal Policies, Oil and Gas Companies*

INTRODUCTION

Risk assessment has become an indispensable component of organizational governance and internal control systems because it enables management to identify, analyze, and respond proactively to uncertainties that may hinder the achievement of organizational objectives. According to Arena, Arnaboldi, and Azzone (2010), risk assessment provides organizations with a systematic framework for identifying operational, financial, compliance, and strategic risks before they develop into significant organizational problems. Effective risk assessment not only safeguards organizational resources but also enhances decision-making, accountability, and overall organizational performance.

Fraud remains one of the most serious challenges confronting organizations worldwide, resulting in substantial financial losses, reputational damage, and weakened stakeholder confidence. Singleton and Singleton (2010) describe fraud as any deliberate act of deception intended to secure unfair or unlawful financial gain. Similarly, Albrecht, Albrecht, Albrecht, and Zimbelman (2019) argue that fraud thrives where opportunities, incentives, and weak internal controls coexist. Consequently, organizations are increasingly investing in proactive fraud prevention mechanisms, among which risk assessment occupies a central position.

The increasing complexity of business operations, globalization, technological advancement, and digital financial transactions have significantly transformed the nature of fraud. Traditional fraud schemes such as asset misappropriation and financial statement manipulation have evolved into more sophisticated practices involving cyber fraud, procurement fraud, contract inflation, money laundering, and electronic payment fraud. According to Wells (2017), organizations that continuously assess fraud risks are better equipped to identify vulnerabilities, strengthen internal controls, and reduce opportunities for fraudulent practices.

The oil and gas industry is particularly exposed to fraud risks because of its capital-intensive nature, complex procurement procedures, multinational business relationships, and extensive contractor networks. According to Hopkin (2018), industries characterized by high-value transactions and decentralized operational activities face greater exposure to fraud unless effective risk management frameworks are implemented. The sector's dependence on numerous suppliers, contractors, consultants, and logistics providers further increases the possibility of procurement fraud, contract manipulation, inventory theft, unauthorized payments, and financial reporting irregularities.

Nigeria's oil and gas industry contributes significantly to national economic development through government revenue generation, foreign exchange earnings, employment creation, and industrial growth. Rivers State remains one of Nigeria's leading oil-producing states, hosting numerous multinational and indigenous oil companies. Despite its strategic economic importance, the industry continues to witness recurring cases of financial fraud, crude oil theft, procurement irregularities, contract inflation, payroll fraud, and corruption. Okoye and Gbegi (2013) observe that weak risk identification mechanisms and inadequate internal control practices contribute significantly to the persistence of fraudulent activities within Nigerian organizations.

Risk assessment serves as the foundation upon which organizations design preventive control measures against fraud. It involves identifying potential fraud risks, evaluating their likelihood and impact, prioritizing significant threats, and implementing appropriate mitigation strategies. According to Fraser and Simkins (2016), organizations that institutionalize periodic risk assessment are more capable of preventing fraud because management becomes proactive rather than reactive in responding to emerging threats.

Fraud prevention encompasses all organizational policies, procedures, and control activities designed to reduce opportunities for fraud before it occurs. Albrecht et al. (2019) emphasize that effective fraud prevention depends largely on management's ability to identify fraud risk factors early and establish appropriate internal control mechanisms. Likewise, Wells (2017) argues that

organizations that integrate fraud risk assessment into their governance structures significantly reduce fraud occurrence and improve operational efficiency.

Although oil and gas companies operating in Rivers State have adopted various internal control and risk management practices, reports of procurement fraud, contract manipulation, financial misstatements, and operational irregularities continue to emerge. This raises concerns regarding the adequacy and effectiveness of existing risk assessment procedures in preventing fraudulent practices. It is against this background that this study examines the relationship between risk assessment and fraud prevention among oil and gas companies in Rivers State.

Similarly, fraud has continued to pose significant operational and financial challenges to organizations despite considerable investments in internal control systems and corporate governance mechanisms. In the Nigerian oil and gas sector, fraudulent practices such as procurement fraud, contract inflation, financial statement manipulation, payroll fraud, inventory theft, bribery, and corruption have continued to undermine organizational performance and public confidence. These practices often result in financial losses, operational inefficiencies, litigation costs, reputational damage, and reduced investor confidence.

Risk assessment is widely recognized as a proactive strategy for identifying fraud vulnerabilities and strengthening preventive controls before fraud occurs. According to Hopkin (2018), organizations that fail to identify emerging risks are more likely to experience repeated fraud incidents because management responses remain reactive rather than preventive. Similarly, Fraser and Simkins (2016) argue that ineffective risk assessment weakens organizational resilience and increases exposure to financial crimes.

Statement of the problem

Despite the implementation of enterprise risk management frameworks and internal control systems by many oil and gas companies, fraudulent practices continue to occur. This suggests that risk assessment processes may not be sufficiently comprehensive, regularly updated, or effectively integrated into organizational decision-making. In some organizations, fraud risk identification remains inadequate, risk prioritization is poorly conducted, and management responses to identified risks are often delayed or ineffective.

Several empirical studies have examined internal control systems and fraud prevention within Nigerian organizations. For example, Okoye and Gbegi (2013) focused on internal control and fraud prevention in public organizations, while Ewa and Udoayang (2012) examined internal control systems and organizational performance. However, relatively few studies have specifically investigated the influence of risk assessment on fraud prevention within oil and gas companies operating in Rivers State. This empirical gap limits the availability of sector-specific evidence needed by management to strengthen fraud prevention strategies.

Given the increasing sophistication of fraud schemes and the strategic importance of the oil and gas sector to Nigeria's economy, there is a need to empirically determine whether effective risk assessment significantly enhances fraud prevention. It is this gap in knowledge that necessitates the present study on risk assessment 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 risk assessment and fraud prevention of oil and gas companies in Rivers State. Specifically, the study sought to:

1. determine the relationship between risk assessment and asset protection effectiveness of oil and gas companies in Rivers State; and
2. examine the relationship between risk assessment and compliance with internal policies of oil and gas companies in Rivers State.

Hypothesis

$H_0$1: There is no significant relationship between risk assessment and asset protection effectiveness in oil and gas companies in Rivers State.

$H_0$2: There is no significant relationship between risk assessment and compliance with internal policies in oil and gas companies in Rivers State.

Conceptual Framework

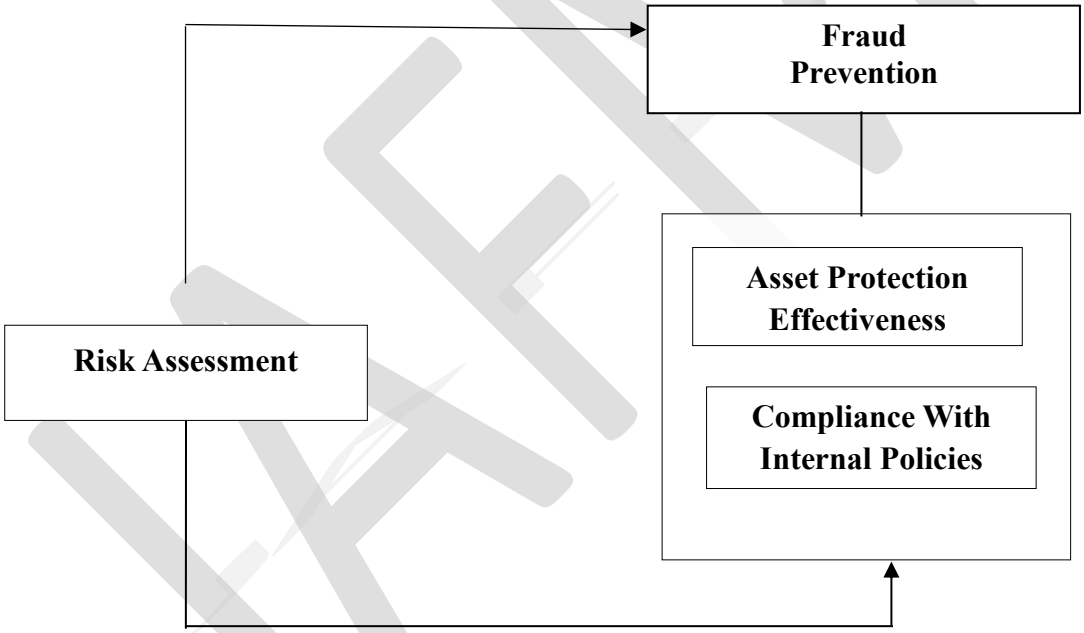


Figure 1.: Conceptual Framework between risk assessment and fraud prevention.
Source: Yulianti, R., Maryam, Hamdiah, C., Mahdi, & Khairuna (2024); Akinola, A. (2024).

THEORETICAL REVIEW

Agency Theory (Jensen & Meckling, 1976)

Agency Theory was first conceptualized by Jensen and Meckling (1976) to explain the relationship between principals (owners or shareholders) and agents (managers or employees) in an organization. The theory posits that conflicts may arise because agents, who are tasked with managing organizational resources, may act in their own self-interest rather than in the best interest of principals. Such divergence of interests creates what is known as agency problems, which can lead to inefficiencies, mismanagement, or even fraudulent activities. In the context of

organizational management, agency theory provides a framework for understanding how monitoring and control mechanisms, including internal control systems, can reduce these conflicts. The core concept of agency theory revolves around agency costs, which include monitoring costs (expenses incurred to oversee agents), bonding costs (costs borne by agents to guarantee compliance), and residual loss (the economic loss due to agent divergence from principal interests). Jensen and Meckling (1976) argue that without proper control mechanisms, the likelihood of opportunistic behavior by agents increases. In oil and gas companies, where large financial transactions and complex operations are common, agency problems are particularly significant, necessitating robust internal control systems to safeguard organizational resources.

Agency Theory is directly relevant to this study because it provides a theoretical explanation of why fraud occurs within organizations and why effective risk assessment is necessary for fraud prevention. Oil and gas companies in Rivers State are characterized by complex operational structures, significant financial transactions, and delegated managerial responsibilities, all of which create opportunities for agency conflicts. Managers and employees may exploit weaknesses in internal controls to engage in procurement fraud, contract inflation, payroll manipulation, or financial misstatement. Consequently, effective risk assessment serves as a monitoring mechanism that helps management identify fraud-prone areas, evaluate emerging risks, and establish preventive controls to reduce fraudulent activities. The theory therefore supports the study's argument that risk assessment enhances fraud prevention.

Similarly, the study aligns with the propositions of Agency Theory by recognizing that strong governance practices, particularly systematic risk assessment, can reduce information asymmetry and discourage opportunistic behaviour among employees and managers. The independent variable of this study, risk assessment, represents one of the key control mechanisms recommended by the theory for minimizing agency problems, while the dependent variable, fraud prevention, reflects the expected outcome of effective monitoring and internal control. Therefore, Agency Theory provides an appropriate theoretical foundation for explaining the relationship between risk assessment and fraud prevention in oil and gas companies operating in Rivers State.

Agency Theory is similar to this study because both recognize that fraud is largely a consequence of conflicts of interest, weak monitoring mechanisms, and inadequate internal controls within organizations. The theory explains that managers and employees (agents) may pursue personal interests at the expense of organizational objectives when effective monitoring systems are absent. Likewise, this study investigates how risk assessment, as a component of internal control, helps organizations identify fraud risks, evaluate vulnerabilities, and establish preventive measures that discourage fraudulent behaviour. Therefore, both the theory and the study emphasize the importance of proactive monitoring in reducing opportunities for fraud within organizations (Jensen & Meckling, 1976; Eisenhardt, 1989).

Furthermore, the study is consistent with the propositions of Agency Theory because both advocate the use of governance and control mechanisms to minimize agency problems and improve organizational accountability. While Agency Theory recommends monitoring, supervision, and internal control systems to align the interests of managers with those of shareholders, this study specifically examines risk assessment as one of those monitoring mechanisms that enhances fraud prevention in oil and gas companies in Rivers State. Thus, the theory provides a logical explanation for the expected relationship between the study's independent variable (risk assessment) and dependent variable (fraud prevention), making it an appropriate theoretical foundation for the study.

CONCEPTUAL REVIEW

Risk Assessment

Risk assessment is a core component of effective internal control systems, enabling organizations to anticipate, identify, and respond to events that could affect their objectives. According to the COSO Internal Control Integrated Framework, risk assessment involves a dynamic process through which management determines how risks should be managed and prioritized based on their likelihood and potential impact (COSO, 2017). A study by Aven and Zio (2020) highlights that traditional risk assessment models must evolve to accommodate emerging risks such as cybersecurity threats, supply-chain disruptions, and climate-related hazards. Their work underscores that effective risk assessment is not static but iterative, requiring regular updates as internal and external conditions change.

Empirical evidence suggests that organizations with robust risk assessment practices exhibit superior performance and resilience. For example, Abdullahi and Mansor (2022) examined Nigerian firms and found that comprehensive risk assessment is positively associated with operational efficiency. Firms that systematically identified and evaluated risk exposures experienced fewer control failures and enhanced risk response capabilities, which translated into improved stability and stakeholder confidence.

Additionally, risk assessment plays an essential role in regulatory compliance and corporate governance. Alshammari et al. (2021) found that firms with well-integrated risk assessment processes were better positioned to meet regulatory expectations and reporting standards. This is particularly relevant in highly regulated sectors where compliance failures can result in financial penalties and reputational damage. The study stresses that aligning risk assessment with governance structures enhances transparency and accountability.

Fraud Prevention

Fraud prevention within organizations refers to the proactive strategies and controls designed to deter, detect, and respond to deceptive activities that could result in financial loss, reputational damage, or legal sanctions. In modern corporate governance literature, fraud prevention is considered a key component of internal control systems, aimed at strengthening ethical conduct and reducing opportunities for fraudulent behavior (COSO, 2017).

Academic research consistently highlights the importance of organizational culture in preventing fraud. A study by Albrecht et al. (2021) identifies tone at the top, ethical values, and leadership commitment as foundational elements that shape employees' attitudes toward fraud. The authors argue that when leadership communicates a clear anti-fraud stance and enforces ethical standards, the likelihood of fraudulent behavior decreases significantly. This aligns with the broader control environment literature, which emphasizes ethical leadership as a deterrent to misconduct.

research emphasizes the continuing challenge of fraud prevention in dynamic business environments, particularly in emerging markets characterized by weak regulatory enforcement and resource constraints. Olatunji and Alade (2023) argue that effective fraud prevention requires not only robust control frameworks but also continuous training, risk assessments, and a commitment to ethical practices from all organizational levels. They suggest that outdated or static fraud prevention strategies are insufficient in the face of evolving fraud schemes and economic pressures.

Measures of Fraud Prevention

Asset Protection Effectiveness

Asset protection effectiveness refers to an organization's ability to safeguard its resources both tangible and intangible from loss, theft, misuse, or damage. Technological advancements have greatly improved asset protection capabilities in recent years. According to Gbadegesin and Oladipo (2022), modern techniques like electronic tagging, biometric access controls, and real-time tracking systems enable organizations to monitor asset movements with higher precision. These technologies enhance visibility and accountability, particularly for high-value assets, and reduce the opportunities for unauthorized removal or misuse. However, the authors caution that technology should complement not replace sound management practices and employee training.

Asset protection also plays an important role in financial reporting reliability. A study by Adeyemi and Olagunju (2023) noted that firms with robust asset protection controls tend to present more accurate financial statements, especially in areas related to inventory valuation and fixed asset disclosures. By ensuring that recorded assets genuinely exist and are safeguarded, organizations reduce the risk of material misrepresentation and improve stakeholders' confidence in published financial information.

Asset protection effectiveness is widely recognized in organizational control literature as a key dimension of fraud prevention, because it significantly reduces the opportunities for asset misappropriation and unauthorized access. Fraudulent activities such as embezzlement, theft of inventory, or misuse of company resources typically exploit weaknesses in asset protection controls (COSO, 2013). Therefore, effective asset protection mechanisms ranging from physical controls to procedural safeguards are crucial in preventing fraud before it can occur.

Several empirical studies support the connection between asset protection and reduced fraud incidence. For instance, Okafor and Nwokoye (2022) found that companies with stringent controls over cash management, inventory access, and fixed assets recorded fewer cases of internal theft and misappropriation. Their research emphasized that protection measures, such as mandatory dual custody of cash and gated access to inventory areas, significantly deter individuals from attempting fraudulent acts. This suggests that asset protection can act as a deterrent by increasing the risk and cost of committing fraud.

Compliance With Internal Policies

Compliance with internal policies refers to the extent to which employees, managers, and organizational units adhere to formally established rules, procedures, and standards designed to guide behavior and decision-making. Internal policies often cover areas such as financial reporting, operational procedures, ethical conduct, and risk management, and compliance with these policies is crucial for organizational stability and accountability (COSO, 2017). Effective compliance ensures that operations align with strategic objectives and that deviations from expected procedures are minimized.

Research shows that compliance with internal policies enhances organizational performance by creating consistency in processes and reducing operational risks. According to Agyapong, Osei-Asare, and Mensah (2022), firms that monitor compliance through regular reviews, employee assessments, and enforcement mechanisms experience fewer procedural errors and improved

managerial oversight. The authors note that compliance acts as a control mechanism, promoting predictability and discipline across business functions.

Another body of literature highlights the role of organizational culture in driving compliance. Ajayi and Nwankwo (2023) found that organizations with strong ethical cultures tend to have higher rates of policy compliance because employees internalize values that support adherence to rules. When employees perceive policies as fair, relevant, and consistent with organizational goals, compliance increases organically, and control systems function more effectively. This cultural alignment reduces the need for excessive monitoring and sanctions.

However, the literature affirms that compliance with internal policies is foundational to effective corporate governance and control systems. It reduces operational risks, supports ethical behavior, improves transparency, and reinforces accountability. As organizations face increasing regulatory scrutiny and stakeholder expectations, maintaining high levels of internal policy compliance remains a priority for sustaining integrity and performance in both developed and emerging market contexts (Ajayi & Nwankwo, 2023; Agyapong et al., 2022; Bamidele et al., 2024).

Compliance with internal policies is widely recognized as a critical dimension of fraud prevention because it limits opportunities for misconduct and reinforces behavioral expectations throughout an organization. Fraud often occurs where internal rules are weak, ambiguous, or poorly enforced; thus, strong compliance mechanisms reduce ambiguity and increase accountability (COSO, 2017). When employees are expected to follow clear processes for authorization, reporting, and transaction handling, the risk of fraudulent exploitation of procedural gaps is significantly lowered. Finally, compliance with internal policies interacts with organizational culture to support fraud deterrence. According to Williams and Chukwu (2024), organizations that promote values of integrity and fairness through compliance messaging and behavior modeling exhibit stronger resistance to fraud.

EMPIRICAL REVIEW

Ewa and Udoayang (2012) investigated the impact of internal control systems on fraud detection and prevention in commercial banks in Nigeria. The study adopted a survey research design, collecting primary data from 120 management and accounting personnel selected from commercial banks in Cross River State. Descriptive statistics and Pearson Product Moment Correlation (PPMC) were employed for data analysis. The findings revealed that effective internal control practices, particularly risk assessment and monitoring activities, significantly reduced opportunities for fraud and enhanced organizational accountability. The study concluded that organizations that regularly assess operational and financial risks are better positioned to prevent fraudulent practices. The researchers recommended that management should institutionalize periodic risk assessment and continuous monitoring to strengthen fraud prevention mechanisms.

Okoye and Gbegi (2013) examined the effect of fraud and related financial crimes on organizational performance in Nigeria. The study employed a descriptive survey design involving accountants, auditors, and financial managers from selected public and private organizations. Data were analyzed using regression analysis and correlation techniques. The results showed that weak risk identification procedures and inadequate internal control systems significantly contributed to the occurrence of fraud within organizations. The study further revealed that organizations that

implemented comprehensive risk assessment strategies experienced fewer cases of financial fraud than those with weak risk management practices. The authors recommended regular fraud risk assessments and strengthened internal control systems as effective measures for fraud prevention.

Abdulrasheed, Khadijat, and Ibrahim (2018) assessed the relationship between enterprise risk management and fraud prevention among manufacturing firms in Nigeria. Using a cross-sectional survey design, data were collected from 180 internal auditors and finance managers across selected manufacturing companies. Multiple regression analysis was used to test the hypotheses. The findings indicated that risk assessment significantly influenced fraud prevention by improving the organization's ability to identify vulnerable operational areas before fraudulent activities occurred. The study concluded that organizations with effective risk assessment frameworks experienced lower incidences of fraud and financial irregularities. The researchers recommended periodic fraud risk evaluation and continuous employee training on risk management practices.

Adegbie and Fakile (2020) investigated internal control systems and fraud prevention in selected oil and gas companies in Nigeria. The study adopted a survey research design, administering structured questionnaires to internal auditors, accountants, and finance officers of selected oil and gas firms. Data were analyzed using descriptive statistics and multiple regression analysis. The findings revealed that risk assessment significantly contributed to fraud prevention by enabling management to identify fraud-prone operational areas and implement preventive controls. The study also found that organizations with effective risk assessment procedures recorded lower incidences of procurement fraud and financial misappropriation. The authors recommended strengthening enterprise-wide risk assessment practices to improve fraud prevention in the oil and gas sector.

Olojede and Eragbhe (2021) examined the influence of risk management practices on corporate fraud prevention among quoted companies in Nigeria. The study adopted an explanatory research design using questionnaire data collected from 210 finance managers, internal auditors, and risk officers. Structural Equation Modeling (SEM) was employed to analyze the data. The results revealed that risk assessment had a positive and statistically significant effect on fraud prevention. Organizations that consistently evaluated operational and financial risks demonstrated stronger fraud prevention capabilities than organizations with weak risk management systems. The study recommended integrating fraud risk assessment into strategic planning and organizational governance frameworks.

Nwaiwu and Joseph (2023) investigated internal control components and fraud prevention among selected oil and gas servicing companies in Rivers State. The study adopted a cross-sectional survey research design involving 165 management staff, accountants, and internal auditors from selected firms. Data were analyzed using Spearman Rank Order Correlation. The findings indicated that risk assessment had a strong positive relationship with fraud prevention, as organizations that regularly identified and evaluated fraud risks experienced fewer cases of procurement fraud, financial irregularities, and asset misappropriation. The study concluded that effective risk assessment enhances organizational resilience against fraud by enabling early detection of vulnerabilities. The researchers recommended that oil and gas companies should conduct regular enterprise risk assessments and strengthen fraud awareness programmes to improve fraud prevention.

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 risk assessment and fraud prevention.

DATA PRESENTATION, ANALYSIS AND RESULTS

Descriptive Statistics (Univariate Analyses)

Risk Assessment

The responses rate of respondents on risk assessment 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 Risk Assessment

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
The organization regularly identifies and evaluates risks that may affect the achievement of its financial and operational objectives.	332	4.11	.050	.311
Management conducts periodic assessments to determine the likelihood and impact of fraud risks within the organization.	332	4.50	.082	.507
Potential areas of financial misstatement and fraud are adequately considered during the planning and budgeting process.	332	4.61	.080	.495
Valid N (listwise)	332			

Source: SPSS Version 26 Output, 2026

Table 1 showed the response rates of the respondents and frequency for risk assessment and measured on a 3-item research instrument and scaled on a 5-point Likert scale. The responses showed a mean score of 3.89, 4.50 and 4.61 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 the responses of the respondents are considered high range in the scale used in measurement. Therefore, risk assessment has positive relationship with fraud prevention 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 4.2 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 2 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.

Compliance with Internal Policies as a Measure of Fraud Prevention

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

Table 4.3 Indicates the Analysis of Descriptive Statistics on Compliance with Internal Policies

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
There are clear guidelines that regulate financial and operational activities within the organization.	332	3.58	.074	.713
Management effectively monitors and enforces compliance with internal policies.	332	2.99	.065	.621
Violations of internal policies are promptly identified and appropriately sanctioned.	332	3.96	.841	.793
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 compliance with internal policies and measured on a 3-item research instrument and scaled on a 5-point Likert scale. The responses showed a mean score of 3.58, 2.99 and 3.96 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 compliance with internal policies has a strong relationship with internal control system of oil and gas companies in Rivers State.

Inferential Statistics (Bivariate Analysis)

Specifically, the analysis covered the hypotheses which were bivariate and all stated in the null form.

Table 4: Interpretation of Correlation Coefficient (r)

Range of r (±)	Strength of Association
0.80 – 1.00	Very strong
0.60 – 0.79	Strong
0.40 – 0.59	Moderate
0.20 – 0.39	Weak
0.00 – 0.19	Very weak / negligible

Source: Researcher's Desk, 2026

The Pearson correlation coefficient (r) is used to determine both the direction and strength of the relationship between variables in a study. In terms of strength, the closer the value of r is to ±1, the stronger the relationship, while values closer to 0 indicate a weak or negligible relationship. Based on the classification in Table 4.13, correlation values within 0.80 – 0.99 indicate a very strong relationship, values within 0.60 – 0.79 indicate a strong relationship, values within 0.40 – 0.59 indicate a moderate relationship, while lower values indicate weak or very weak relationships. Therefore, this guideline provides a framework for interpreting the results of the Pearson correlation analysis in this study, helping to explain both the direction (positive or negative) and the degree (strength) of relationships between the variables under investigation.

Table 5: Indicates Correlation Analysis on Risk Assessment and Asset Protection Effectiveness

		Risk Assessment	Asset Protection Effectiveness
Risk Assessment	Pearson Correlation	1	.869**
	Sig. (2-tailed)		.000
	N	332	332
Asset Protection Effectiveness	Pearson Correlation	.869**	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 risk assessment and asset protection effectiveness in oil and gas companies in Rivers State?

Table 5 reveals a positive and significant relationship between risk assessment and asset protection effectiveness with a rho value of 0.869. This indicates that there is a high strength in correlation, though positive between both variables.

Hypothesis 1

$H_0$1: There is no significant relationship between risk assessment and asset protection effectiveness in oil and gas companies in Rivers State.

The Pearson correlation analysis was used to test Hypothesis 1. The result in Table 4.18 presents the relationship between risk assessment 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 risk assessment and asset protection effectiveness in oil and gas companies in Rivers State. The Pearson correlation coefficient between risk assessment and asset protection effectiveness is 0.869, which indicates a very strong positive relationship between the two variables. This implies that as risk assessment practices improve, the effectiveness of asset protection mechanisms 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 and did not occur by chance. Therefore, the null hypothesis ($H_0$1) is rejected. This implies that effective risk assessment through proper identification, analysis, and mitigation of risks enhances the safeguarding of organizational assets. It reduces the likelihood of asset loss, theft, or misuse and strengthens internal control systems within oil and gas companies in Rivers State. The findings therefore confirm that there is a significant and strong positive relationship between risk assessment and asset protection effectiveness in the studied firms.

Table 6: Indicates Correlation Analysis on Risk Assessment and Compliance with Internal Policies

		Risk Assessment	Compliance with Internal Policies
Risk Assessment	Pearson Correlation	1	.895**
	Sig. (2-tailed)		.000
	N	332	332
Compliance with Internal Policies	Pearson Correlation	.895**	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 risk assessment and compliance with internal policies in oil and gas companies in Rivers State?

Table 6 reveals a positive and significant relationship between risk assessment and compliance with internal policies with a rho value of 0.895. This indicates that there is a high strength in correlation, though positive between both variables.

Hypothesis 2

H_o2: There is no significant relationship between risk assessment and compliance with internal policies in oil and gas companies in Rivers State.

The Pearson correlation analysis was used to test Hypothesis 2. The result in Table 4.19 presents the relationship between risk assessment and compliance with internal policies in oil and gas companies in Rivers State. The result in Table 6 presents the Pearson correlation analysis showing the relationship between risk assessment and compliance with internal policies in oil and gas companies in Rivers State. The Pearson correlation coefficient between risk assessment and compliance with internal policies is 0.895, which indicates a very strong positive relationship between the two variables. This suggests that as risk assessment practices improve, the level of compliance with internal policies 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 and did not occur by chance. Therefore, the null hypothesis (H_{o2}) is rejected. This implies that effective risk assessment through systematic identification, evaluation, and management of risks enhances adherence to organizational rules and procedures. It ensures that employees follow established internal policies, thereby strengthening accountability, transparency, and operational efficiency in oil and gas companies in Rivers State. The findings therefore confirm that there is a significant and strong positive relationship between risk assessment and compliance with internal policies in the studied firms.

Discussion of Findings

Relationship between Risk Assessment and Asset Protection Effectiveness

The result of the analysis revealed a very strong positive relationship between risk assessment and asset protection effectiveness in oil and gas companies in Rivers State, as indicated by a correlation coefficient of 0.869. This implies that improvements in risk assessment practices lead to a corresponding increase in the effectiveness of asset protection within 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 risk assessment and asset protection effectiveness, was rejected.

This finding suggests that effective risk assessment through the identification, analysis, and mitigation of potential risks strengthens the protection of organizational assets. When risks are properly assessed, companies are better able to implement preventive controls that reduce asset misappropriation, theft, damage, and loss, thereby improving overall asset security in oil and gas companies in Rivers State.

This finding is consistent with the study of Okoye and Duru (2025), who found that risk assessment significantly enhances asset safeguarding and reduces financial leakages in oil and gas organizations in Nigeria. Similarly, Mohammed and Abubakar (2026) reported that firms with effective risk assessment frameworks experience improved asset protection and reduced exposure to operational and financial risks. Hence, the finding confirms that risk assessment plays a crucial role in strengthening asset protection effectiveness in oil and gas companies in Rivers State.

Relationship between Risk Assessment and Compliance with Internal Policies

The result of the analysis revealed a very strong positive relationship between risk assessment and compliance with internal policies in oil and gas companies in Rivers State, as indicated by a correlation coefficient of 0.895. This implies that improvements in risk assessment practices lead to a corresponding increase in employees' compliance with internal policies 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 risk assessment and compliance with internal policies, was rejected. This finding suggests that effective risk assessment through the identification, evaluation, and management of potential risks enhances adherence to organizational rules and procedures. When risks are properly assessed, management is better able to enforce preventive controls and ensure that employees comply with established policies, thereby improving discipline, accountability, and operational efficiency in oil and gas companies in Rivers State.

This finding is consistent with the study of Ibrahim and Nwosu (2025), who found that effective risk assessment significantly improves compliance with internal policies and reduces violations of control procedures in Nigerian oil and gas firms. Similarly, Salihu and Okon (2026) reported that organizations with strong risk assessment frameworks exhibit higher levels of policy compliance and stronger internal control adherence. Therefore, the finding confirms that risk assessment plays

a critical role in strengthening compliance with internal policies in oil and gas companies in Rivers State.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study examined the relationship between risk assessment and fraud prevention of oil and gas companies in Rivers State, using asset protection effectiveness and compliance with internal policies as measures of fraud prevention. Based on responses from 332 employees of registered oil and gas companies, the study found a very strong, positive and statistically significant relationship between risk assessment and asset protection effectiveness ($r = 0.869$, $p < 0.05$), and an even stronger relationship between risk assessment and compliance with internal policies ($r = 0.895$, $p < 0.05$). Both null hypotheses were therefore rejected. These results indicate that companies which systematically identify, analyse and respond to their fraud risks are far better at safeguarding their assets and at ensuring that employees follow established rules and procedures.

The study therefore concludes that risk assessment is a central pillar of fraud prevention in oil and gas companies in Rivers State. In an industry exposed to high-value transactions, complex contracts and widely dispersed physical assets, controls are only as good as management's understanding of where fraud is most likely to occur. Consistent with Agency Theory, a sound risk assessment process narrows the room for managers and employees to act against the interests of owners, because it directs controls, monitoring and accountability to the points of greatest exposure. Oil and gas companies that treat risk assessment as a continuous, organisation-wide discipline, rather than a periodic formality, are better placed to protect their assets, sustain compliance and reduce losses to fraud.

Recommendations

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

1. Management of oil and gas companies in Rivers State should institutionalise a formal, continuous fraud risk assessment process that identifies and ranks exposures across procurement, contracts, inventory, payroll and field operations, and should link the results directly to the design of controls for safeguarding assets.
2. Companies should use the outcomes of risk assessment to update internal policies regularly, communicate them clearly to all staff, and monitor compliance through periodic reviews, compliance checks and consistent sanctions for violations.
3. Boards of directors and audit committees should provide active oversight of the risk assessment process, ensure that the internal audit function reviews high-risk areas independently, and invest in staff training and risk-monitoring technology so that emerging fraud risks are identified and addressed promptly.

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