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Forensic accounting practices and performance: New empirical evidence of quoted oil and gas companies in Nigeria

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Abstract

This study examined the relationship between forensic accounting practices and organizational performance of quoted oil and gas companies in Nigeria, with organizational performance measured by the robustness of the internal control system. The study was anchored on the fraud triangle theory and adopted an ex-post facto research design. Secondary panel data were obtained from the published annual reports of eight (8) quoted oil and gas companies listed on the Nigerian Exchange (NGX) covering the period from 2019 to 2025. The entire population of the study was adopted using the census sampling technique, resulting in a balanced panel of 56 firm-year observations. Data were analyzed using descriptive statistics and panel econometric techniques, including the Levin-Lin-Chu panel unit root test, panel model selection tests, Pedroni panel cointegration test, and the Panel Error Correction Model (PECM). The stationarity results revealed that all variables became stationary after first differencing, indicating that they were integrated of order one, I(1). The panel cointegration test confirmed the existence of a long-run equilibrium relationship among the variables, while the Random Effects model was selected as the most appropriate estimation technique based on the Hausman specification test. The Panel Error Correction Model revealed that litigation support has a positive and statistically significant relationship with the robustness of the internal control system ($\beta = 0.2865$, $p < 0.05$). Similarly, whistle-blowing mechanisms exhibited a positive and statistically significant relationship with the robustness of the internal control system ($\beta = 0.3418$, $p < 0.05$). The error correction term was negative and statistically significant, indicating a relatively rapid adjustment toward long-run equilibrium following short-run disturbances. The study concluded that effective forensic accounting practices, particularly litigation support and whistle-blowing mechanisms, significantly enhance the robustness of internal control systems among quoted oil and gas companies in Nigeria. The study therefore recommended that management should institutionalize litigation support services within corporate governance structures, strengthen confidential whistle-blowing mechanisms and whistle-blower protection policies, and invest in continuous forensic accounting capacity development to improve fraud prevention, regulatory compliance, and the long-term effectiveness of internal control systems.

Keywords: Forensic Accounting; Internal Control; Litigation; Profitability

1. Introduction

Organizational performance has increasingly transcended the traditional emphasis on profitability, market share, and shareholder wealth maximization to encompass the effectiveness of governance structures, risk management practices, and internal control systems. In today's highly regulated and globally interconnected business environment, organizations are expected not only to generate financial returns but also to establish robust systems capable of preventing fraud, ensuring accountability, safeguarding corporate assets, and promoting compliance with legal and regulatory requirements. Consequently, the robustness of an organization's internal control system has emerged as one of the most important indicators of sustainable organizational performance because it determines the extent to which

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operational efficiency, financial reporting reliability, regulatory compliance, and asset protection are achieved. A robust internal control system provides reasonable assurance that organizational objectives are accomplished while minimizing exposure to operational, financial, and compliance risks (Oyedokun, 2024).

The importance of robust internal control systems has become increasingly evident following the proliferation of corporate fraud, financial scandals, cyber-enabled financial crimes, and governance failures witnessed across both developed and developing economies. Although organizations continue to invest significantly in internal audit functions, enterprise risk management, and corporate governance mechanisms, fraudulent financial reporting, asset misappropriation, procurement fraud, insider abuse, and management override of controls continue to challenge organizational sustainability. The increasing sophistication of financial crimes has exposed significant weaknesses in conventional accounting and auditing procedures, thereby necessitating the adoption of more proactive fraud prevention and investigative mechanisms. Contemporary organizations now recognize that effective internal control systems require not only preventive controls but also forensic capabilities capable of identifying, investigating, documenting, and resolving complex financial irregularities before they escalate into major corporate failures. The continued evolution of fraud techniques has therefore shifted attention toward forensic accounting practices as an indispensable component of modern organizational governance (Honigsberg, 2020; Kaur et al., 2023).

Within the framework of the Committee of Sponsoring Organizations of the Treadway Commission (COSO), an internal control system comprises policies, procedures, and organizational processes designed to provide reasonable assurance regarding the achievement of operational efficiency, reliable financial reporting, and compliance with applicable laws and regulations. The effectiveness of these controls depends largely on management commitment, ethical organizational culture, continuous monitoring, risk assessment, and the availability of appropriate investigative mechanisms capable of detecting and responding to irregularities. In practice, organizations with robust internal control systems are more capable of preventing fraudulent transactions, identifying control deficiencies, responding promptly to emerging risks, and maintaining stakeholder confidence. Conversely, weak internal control systems expose organizations to financial losses, litigation, regulatory sanctions, reputational damage, and declining investor confidence.

The Nigerian corporate environment presents a particularly compelling context for examining the robustness of internal control systems. Despite significant reforms in corporate governance, financial reporting standards, and regulatory oversight, financial misconduct remains a recurring challenge across several sectors of the economy. Reports of financial statement manipulation, procurement irregularities, contract inflation, unauthorized transactions, diversion of corporate resources, and insider abuses continue to emerge despite the existence of statutory audits and internal control procedures. These realities suggest that conventional accounting and auditing mechanisms alone may no longer be sufficient to address increasingly sophisticated financial crimes. Consequently, organizations are progressively integrating forensic accounting practices into their governance structures to complement traditional auditing functions and strengthen internal control systems (Grima et al., 2020; Kaur et al., 2023).

Forensic accounting has evolved into one of the most significant specialized areas of accounting practice in response to the increasing complexity of financial crimes worldwide. Unlike conventional auditing, which primarily focuses on expressing opinions regarding the fairness of financial statements, forensic accounting integrates accounting, auditing, investigative techniques, legal knowledge, and analytical procedures to detect, investigate, document, and prevent financial fraud. The discipline extends beyond routine financial verification by generating legally admissible evidence capable of supporting judicial proceedings, regulatory investigations, arbitration, and corporate dispute resolution. As corporate fraud becomes increasingly technology-driven and sophisticated, forensic accounting has become an essential governance mechanism for organizations seeking to improve transparency, accountability, and institutional integrity (Honigsberg, 2020; Kaur et al., 2023).

Among the various dimensions of forensic accounting, litigation support has become particularly important in modern corporate governance. Litigation support involves the provision of specialized accounting expertise during legal proceedings, dispute resolution, fraud investigations, insurance claims, shareholder disputes, business valuation, and regulatory enforcement actions. Through litigation support, forensic accountants assist legal practitioners, regulatory agencies, corporate management, and judicial institutions by examining financial evidence, quantifying economic losses, reconstructing financial transactions, and presenting expert testimony where necessary. Effective litigation support enhances organizational accountability by ensuring that financial disputes are resolved using credible and objective evidence while simultaneously discouraging fraudulent behaviour through the increased likelihood of successful prosecution. Recent Nigerian studies have demonstrated that litigation support significantly enhances investigative objectivity, strengthens legal proceedings, and contributes to improved fraud detection and corporate governance (Osunwole et al., 2024; Akpootu & Yusuf, 2025).

Another critical dimension of forensic accounting practice is the whistle-blowing mechanism. Whistle-blowing represents one of the most effective governance tools for promoting transparency, ethical conduct, and early fraud detection within organizations. It provides confidential channels through which employees, suppliers, customers, shareholders, and other stakeholders can report unethical practices, financial misconduct, regulatory violations, and fraudulent activities without fear of retaliation. Effective whistle-blowing mechanisms encourage the timely reporting of suspicious activities, thereby enabling organizations to investigate irregularities before they result in significant financial losses or reputational damage. Internationally, whistle-blowing has become an integral component of corporate governance frameworks because it complements internal audit functions and strengthens organizational monitoring systems. Empirical evidence from Nigeria equally suggests that effective whistle-blowing systems improve fraud detection, reinforce internal control systems, and strengthen organizational accountability (Apalowowa, 2025).

The Nigerian oil and gas industry provides an appropriate setting for investigating forensic accounting practices because it remains one of the country's most economically strategic sectors. The industry contributes substantially to national revenue, foreign exchange earnings, government expenditure, industrial development, and employment generation. However, the sector is characterized by highly complex financial transactions, multinational operations, joint venture arrangements, extensive procurement activities, foreign exchange transactions, and significant capital investments. These operational characteristics increase exposure to financial fraud, contract manipulation, procurement irregularities, revenue leakages, environmental liabilities, and regulatory compliance challenges. Consequently, maintaining robust internal control systems within quoted oil and gas companies has become increasingly important for ensuring financial accountability, protecting shareholder interests, and sustaining investor confidence.

Although Nigerian regulatory authorities have introduced numerous reforms aimed at strengthening corporate governance, including the Nigerian Code of Corporate Governance, enhanced financial reporting standards, and stricter disclosure requirements, concerns regarding financial accountability and fraud risk continue to persist within the corporate sector. Traditional auditing approaches, while essential, often identify irregularities after transactions have occurred and therefore may not adequately prevent sophisticated fraudulent schemes. The increasing reliance on forensic accounting practices reflects the recognition that organizations require specialized investigative capabilities capable of complementing internal controls, strengthening governance, and improving fraud prevention.

Existing empirical studies have extensively examined the relationship between forensic accounting and fraud detection, financial reporting quality, financial performance, audit effectiveness, and corruption control. Several studies have established positive associations between forensic accounting techniques and fraud prevention, while others have investigated the influence of litigation support on judicial outcomes and dispute resolution (Osunwole et al., 2024; Nelson et al., 2025). However, relatively few studies have specifically examined forensic accounting practices from the perspective of organizational performance measured through the robustness of internal control systems within quoted oil and gas companies in Nigeria. Similarly, much of the available literature has concentrated on public sector institutions, deposit money banks, or manufacturing firms, leaving limited empirical evidence for the Nigerian oil and gas sector despite its strategic importance and exposure to significant financial risks. This gap in sector-specific evidence creates the need for further investigation.

It is against this background that this study examines the relationship between forensic accounting practices and organizational performance among quoted oil and gas companies in Nigeria. Specifically, the study focuses on litigation support and whistle-blowing mechanisms as critical dimensions of forensic accounting practices while measuring organizational performance using the robustness of the internal control system. By utilizing recent panel data obtained from quoted oil and gas companies over the period 2019–2025, the study seeks to provide new empirical evidence capable of enriching the forensic accounting literature, informing corporate governance policy, and providing practical insights for managers, regulators, investors, and other stakeholders interested in strengthening internal control systems and promoting sustainable organizational performance.

1.1. Statement of the Problem

The increasing complexity of corporate operations, technological innovations, and globalization of business activities have significantly transformed the nature of financial fraud, making traditional accounting and auditing approaches less effective in detecting and preventing sophisticated financial crimes. Historically, organizations relied heavily on statutory audits and conventional internal control systems to ensure financial accountability and safeguard corporate assets. These mechanisms were primarily designed to verify the accuracy and fairness of financial statements rather than to proactively investigate fraudulent schemes or gather legally admissible evidence for litigation. However, the emergence of complex financial crimes, including management override of internal controls, procurement fraud,

financial statement manipulation, asset misappropriation, cyber-enabled fraud, and money laundering, has exposed substantial weaknesses in conventional auditing practices. Consequently, organizations across the world have increasingly embraced forensic accounting practices as complementary governance mechanisms capable of strengthening fraud detection, enhancing transparency, and improving the effectiveness of internal control systems (Honigsberg, 2020; Kaur et al., 2023).

The Nigerian corporate environment has not been insulated from these developments. Despite continuous improvements in financial reporting standards, corporate governance regulations, and regulatory oversight by institutions such as the Nigerian Exchange Group (NGX), the Financial Reporting Council of Nigeria (FRCN), and the Securities and Exchange Commission (SEC), cases of financial misconduct, weak internal controls, unethical corporate practices, and governance failures continue to occur across several sectors of the economy. The oil and gas industry, which remains one of Nigeria's most strategically important sectors, has particularly experienced increasing concerns relating to procurement irregularities, revenue leakages, contract disputes, regulatory non-compliance, environmental liabilities, and financial reporting controversies. These recurring challenges suggest that the existence of conventional internal control systems alone may not be sufficient to address increasingly sophisticated fraud risks confronting contemporary organizations. As organizations become more digitally integrated and financially complex, there is growing recognition that forensic accounting practices must complement traditional accounting functions in strengthening organizational control environments and enhancing institutional accountability (Grima et al., 2020; Honigsberg, 2020).

Among the numerous forensic accounting practices available, litigation support and whistle-blowing mechanisms have received increasing attention because of their direct contributions to fraud prevention, dispute resolution, regulatory compliance, and organizational governance. Litigation support enables forensic accountants to provide expert financial analysis, investigate complex transactions, quantify economic losses, and present credible evidence during legal proceedings. This enhances the organization's ability to resolve disputes objectively while discouraging fraudulent behaviour through the increased probability of successful prosecution. Similarly, whistle-blowing mechanisms provide confidential reporting channels through which employees and other stakeholders can disclose unethical practices, financial misconduct, and regulatory violations before they escalate into significant organizational crises. Effective whistle-blowing systems promote transparency, strengthen ethical culture, and improve the overall effectiveness of internal control systems by facilitating early fraud detection and prompt corrective actions (Apalowowa, 2025; Osunwole et al., 2024).

Notwithstanding the increasing adoption of forensic accounting practices, theoretical and empirical debates continue regarding the extent to which these practices contribute to organizational performance. From a theoretical perspective, the Agency Theory argues that effective monitoring mechanisms, including forensic accounting practices, reduce agency conflicts by minimizing information asymmetry between managers and shareholders. Conversely, some scholars argue that forensic accounting largely serves a reactive function by investigating fraud after its occurrence rather than addressing the underlying governance deficiencies that facilitate fraudulent behaviour. Similarly, while the Fraud Diamond Theory emphasizes that strengthening investigative capacity reduces opportunities for fraud through improved detection and deterrence, critics contend that organizational fraud is also influenced by broader institutional factors such as corporate culture, leadership quality, regulatory enforcement, and ethical climate, which may not be fully addressed through forensic accounting practices alone (Honigsberg, 2020; Kaur et al., 2023).

Empirical evidence also presents mixed findings regarding the effectiveness of forensic accounting practices. Osunwole et al. (2024) reported that forensic accounting significantly improves litigation support by enhancing investigative objectivity and the quality of legal evidence presented during judicial proceedings. Similarly, Edeh et al. (2024) found that litigation support contributes positively to internal control effectiveness and fraud prevention within Nigerian microfinance banks. Kankpang et al. (2024) equally concluded that litigation support strengthens fraud prevention and detection in Nigerian commercial banks. Conversely, Apalowowa (2025), while reporting positive associations between whistle-blowing, forensic auditing, and corporate governance, found that the statistical relationships were not significant at conventional levels, suggesting that the effectiveness of whistle-blowing mechanisms may depend on contextual organizational factors such as management commitment, organizational culture, and employee trust. These inconsistencies indicate that the effectiveness of forensic accounting practices remains an empirical issue requiring further investigation.

Furthermore, a careful review of the literature reveals notable contextual and methodological gaps. Most previous Nigerian studies have concentrated on fraud detection, fraud management, financial reporting quality, banking performance, or public sector accountability, with relatively limited empirical attention devoted to organizational performance measured through the robustness of internal control systems. Existing studies have also focused

predominantly on sectors such as deposit money banks, microfinance banks, manufacturing firms, and public sector institutions, while comparatively fewer studies have examined quoted oil and gas companies despite the industry's strategic economic importance and relatively high exposure to financial, operational, and regulatory risks (Oyedokun, 2024; Nelson et al., 2025). In addition, many earlier studies adopted cross-sectional survey designs and primary data, whereas relatively few have employed longitudinal panel data capable of capturing firm-specific dynamics and long-run relationships over time.

These theoretical debates, empirical inconsistencies, sectoral gaps, and methodological limitations create uncertainty regarding the extent to which litigation support and whistle-blowing mechanisms contribute to strengthening the robustness of internal control systems within Nigeria's quoted oil and gas companies. Consequently, there remains insufficient empirical evidence specifically examining the relationship between forensic accounting practices and organizational performance using recent panel data from the Nigerian oil and gas industry. It is this gap that necessitated the present study, which investigates the relationship between litigation support, whistle-blowing mechanisms, and the robustness of internal control systems among quoted oil and gas companies in Nigeria over the period 2019–2025, with the aim of providing new empirical evidence capable of informing corporate governance practices, regulatory policies, and future forensic accounting research.

2. Literature Review

2.1. Conceptual Framework

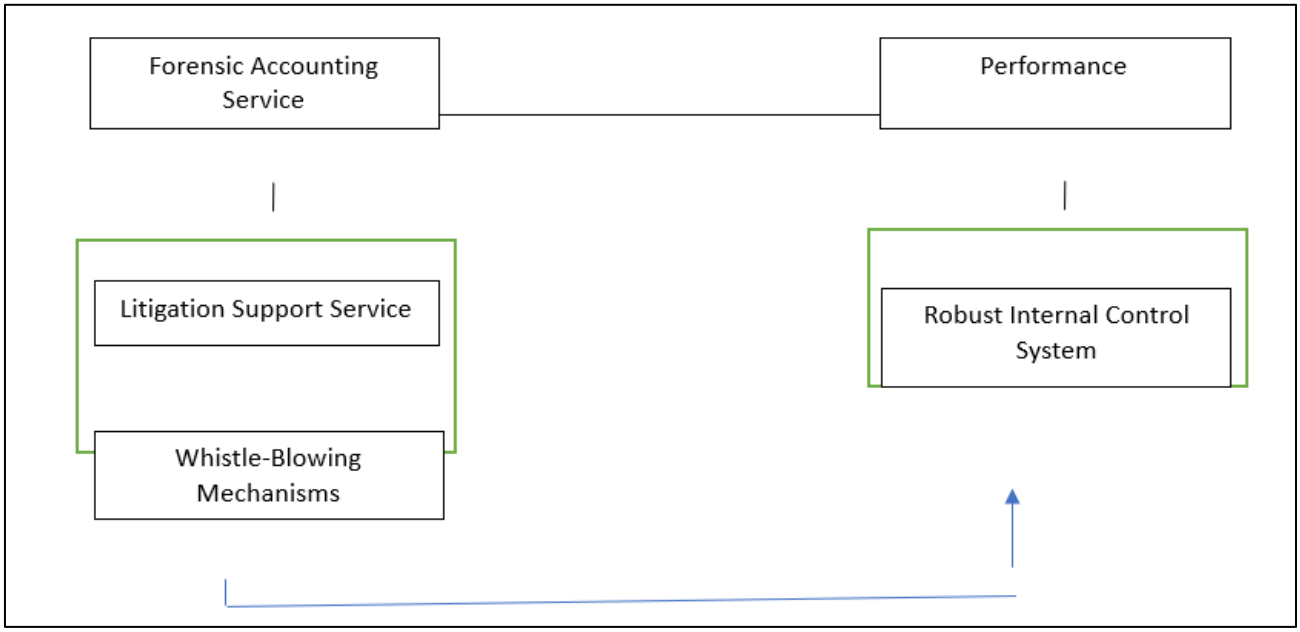

Figure 1 Conceptual Framework of the Study

2.1.1. Forensic Accounting Practices

Forensic accounting practices represent the application of accounting, auditing, investigative, legal, and analytical techniques to detect, investigate, prevent, and resolve financial irregularities, fraud, and other economic crimes within organizations. The concept has evolved from being merely a litigation support service to becoming a strategic corporate governance mechanism that strengthens transparency, accountability, and organizational integrity (Crumbley et al., 2017; Bhasin, 2020). Unlike conventional accounting, which focuses primarily on the preparation and presentation of financial statements, forensic accounting integrates financial expertise with investigative procedures and legal knowledge to uncover concealed financial misconduct and generate evidence admissible in courts of law (Singleton & Singleton, 2010).

According to Crumbley et al. (2017), forensic accounting involves the systematic examination of financial records to establish facts suitable for judicial proceedings or dispute resolution. Similarly, Okoye and Akamobi (2021) describe forensic accounting practices as specialized accounting activities designed to detect fraudulent transactions, investigate financial crimes, and provide expert opinions that enhance organizational accountability. The Association of Certified

Fraud Examiners (ACFE, 2024) further notes that organizations adopting proactive forensic accounting practices experience significantly lower fraud losses due to improved fraud detection and prevention mechanisms.

Modern forensic accounting practices encompass fraud investigation, fraud prevention, litigation support, whistle-blowing management, digital forensic investigation, asset tracing, expert witness testimony, business valuation, and forensic auditing (Hopwood et al., 2018). These practices have become increasingly relevant due to the sophistication of financial crimes, technological advancements, globalization, and increasing stakeholder expectations regarding corporate accountability (Kranacher et al., 2020).

Within the Nigerian oil and gas industry, forensic accounting practices have assumed greater importance because of increasing concerns regarding financial fraud, procurement irregularities, revenue leakages, contract manipulation, corruption, and non-compliance with regulatory requirements. The complexity of transactions within the industry increases opportunities for fraudulent activities, thereby necessitating specialized investigative accounting techniques to safeguard organizational assets and strengthen internal control systems (Onodi et al., 2021; Ofoegbu & Okoye, 2022). Consequently, organizations increasingly integrate forensic accounting into their governance structures to improve operational transparency and reinforce internal control mechanisms.

The present study conceptualizes forensic accounting practices through two major dimensions: litigation support and whistle-blowing mechanism. These dimensions represent preventive and detective approaches capable of strengthening organizational performance by promoting robust internal control systems. Therefore, forensic accounting practices extend beyond fraud detection to encompass strategic governance tools that improve organizational resilience, regulatory compliance, and financial accountability (Bhasin, 2020; ACFE, 2024).

2.1.2. Performance

Performance refers to the extent to which an organization successfully achieves its strategic objectives through efficient utilization of available resources while satisfying stakeholder expectations. Traditionally, organizational performance has been evaluated using financial indicators such as profitability, return on assets, return on equity, and earnings per share. However, contemporary management literature recognizes that performance extends beyond financial outcomes to include operational efficiency, governance quality, regulatory compliance, risk management, customer satisfaction, innovation, and internal control effectiveness (Kaplan & Norton, 1996; Richard et al., 2009).

According to Richard et al. (2009), performance encompasses financial performance, operational performance, and organizational effectiveness. Similarly, Kaplan and Norton (1996) argue that sustainable organizational success depends upon balancing financial and non-financial performance measures through comprehensive performance management systems. Recent studies equally emphasize governance quality and internal control effectiveness as important indicators of organizational performance because they directly influence organizational sustainability and stakeholder confidence (COSO, 2013; OECD, 2023).

Within the Nigerian oil and gas industry, performance is increasingly evaluated based on operational resilience, regulatory compliance, risk management capability, corporate governance, and the effectiveness of internal control systems rather than solely financial profitability (Onodi et al., 2021). This broader perspective reflects growing stakeholder expectations regarding transparency, accountability, environmental responsibility, and ethical corporate conduct.

In the present study, organizational performance is operationalized using the concept of a robust internal control system. This approach recognizes that organizations characterized by strong internal controls are better positioned to prevent fraud, safeguard organizational assets, ensure compliance with laws and regulations, improve operational efficiency, and maintain stakeholder confidence (COSO, 2013). Consequently, forensic accounting practices contribute to organizational performance by strengthening governance structures that support sustainable organizational success.

A robust internal control system refers to a comprehensive framework of policies, procedures, governance structures, monitoring activities, and organizational practices established to provide reasonable assurance regarding the achievement of organizational objectives, reliability of financial reporting, compliance with applicable laws, safeguarding of assets, and operational effectiveness (COSO, 2013). Internal control has evolved from being primarily an accounting function into an enterprise-wide governance mechanism supporting organizational sustainability and risk management.

2.2. Theoretical Framework

2.2.1. Fraud Triangle Theory

The Fraud Triangle Theory was propounded by Donald R. Cressey in **1953** following his extensive criminological research on occupational fraud and financial misconduct. The theory was first introduced in Cressey's seminal work, *Other People's Money: A Study in the Social Psychology of Embezzlement*, where he examined the behavioural patterns of individuals who committed financial crimes against organizations entrusted to their care. Cressey (1953) argued that three fundamental conditions must coexist before an individual is likely to engage in fraudulent behaviour. These conditions are perceived pressure, perceived opportunity, and rationalization. According to the theory, fraud is rarely an accidental occurrence but rather the result of circumstances that motivate individuals to abuse positions of trust for personal benefit.

The first element of the theory, perceived pressure, refers to financial or non-financial challenges experienced by individuals that create a compelling need to obtain resources through dishonest means. Such pressures may include personal financial obligations, unrealistic organizational performance expectations, debt burdens, lifestyle demands, job insecurity, family responsibilities, or pressure to meet shareholders' expectations. These pressures do not necessarily justify fraudulent conduct but provide the motivation that may lead an individual to contemplate unethical actions (Cressey, 1953; Albrecht et al., 2019).

The second element, perceived opportunity, represents the organizational weaknesses that enable fraud to occur without immediate detection. Opportunity arises when internal control systems are weak, segregation of duties is inadequate, management oversight is ineffective, audit functions are compromised, documentation is poorly maintained, or organizational governance structures fail to monitor financial activities effectively. Among the three elements of the Fraud Triangle, opportunity is generally regarded as the only factor that organizations can directly control through the implementation of effective internal control systems, forensic accounting procedures, continuous auditing, whistle-blowing policies, and corporate governance mechanisms (Singleton & Singleton, 2010; Bologna et al., 2013).

The third element, rationalization, refers to the psychological process through which fraud perpetrators justify unethical behaviour as acceptable or necessary under prevailing circumstances. Individuals may convince themselves that they are merely borrowing funds temporarily, that they deserve additional compensation, that the organization treats them unfairly, or that everyone else engages in similar practices. Rationalization enables perpetrators to preserve a positive self-image despite engaging in fraudulent conduct (Dorminey et al., 2012).

The Fraud Triangle Theory has become one of the most influential frameworks in forensic accounting, auditing, fraud risk assessment, and corporate governance because it explains why fraudulent activities occur and identifies areas where organizations can intervene to reduce fraud risk. The theory emphasizes that fraud prevention depends largely on reducing opportunities through strong internal controls, continuous monitoring, effective investigations, legal enforcement, ethical organizational culture, and reporting mechanisms.

2.2.2. Empirical Review

Osunwole, et al. (2026) investigated the influence of forensic accounting on litigation support and engagement in Nigeria. The study focused on determining how forensic accounting enhances the objectivity of forensic investigations and supports attorneys' judgments during litigation. A descriptive survey research design was adopted, while primary data were collected from 200 respondents drawn from deposit money banks, law firms, audit firms, higher educational institutions, and small and medium-sized enterprises in Osun State. Data were analyzed using regression analysis, with forensic accounting as the independent variable and litigation support outcomes, particularly investigative objectivity and attorney judgment, serving as the dependent variables. The findings indicated that forensic accounting significantly improved both investigative objectivity and litigation support, thereby facilitating effective prosecution and dispute resolution. The study concluded that organizations should integrate forensic accounting services into their governance frameworks to strengthen litigation processes. Although the study emphasized litigation support as an important dimension of forensic accounting, it concentrated primarily on legal engagements rather than organizational performance. The present study extends this perspective by examining how litigation support relates to the robustness of internal control systems among quoted oil and gas companies in Nigeria.

Joseph (2025) examined forensic accounting and fraud management among listed deposit money banks in Nigeria. The objective of the study was to determine whether fraud investigation and litigation support services improve fraud management within Nigerian banks. The study employed a descriptive survey design involving 95 respondents selected

from the forensic accounting and internal control departments of twelve listed banks out of a population of 125 staff. Primary data were collected using a structured questionnaire, while regression analysis was employed for hypothesis testing. The independent variables were fraud investigation and litigation support services, whereas fraud management constituted the dependent variable. The findings revealed that both dimensions of forensic accounting significantly enhanced fraud management by strengthening fraud detection and prevention mechanisms. The study recommended wider adoption of forensic accounting practices across Nigerian organizations. While the research established the relevance of litigation support in combating fraud, it focused on the banking sector. The current study differs by investigating the relationship between litigation support and the robustness of internal control systems within quoted oil and gas companies, thereby providing sector-specific evidence.

Akpootu and Yusuf (2025) examined forensic accounting litigation support and the detection of public sector corruption in Nigeria. The purpose of the study was to investigate whether litigation support provided by forensic accountants contributes to corruption detection within Nigerian anti-graft agencies. A descriptive survey research design was adopted, and data were collected from 386 respondents selected from three anti-corruption agencies using structured questionnaires. Multiple regression analysis served as the analytical technique. The explanatory variable was forensic accounting litigation support, while corruption detection represented the dependent variable. The findings established that litigation support significantly enhanced the detection of corruption by providing credible evidence and improving judicial processes. The authors recommended the establishment of specialized courts to facilitate timely adjudication of corruption cases. Although the study demonstrated the value of litigation support in promoting accountability, it was confined to public institutions. The present study contributes to the literature by investigating litigation support within quoted oil and gas companies and relating it specifically to the strength of internal control systems.

Adewale (2025) investigated whistleblowing mechanisms and financial reporting quality among quoted multinational oil and gas companies in Nigeria. The study sought to determine whether whistleblowing practices improve the quality of corporate financial reporting. Survey research design was employed, while primary data were analyzed using descriptive statistics, correlation analysis, and ordinary least squares regression. Whistleblowing mechanism constituted the independent variable, whereas financial reporting quality was measured through accuracy, reliability, transparency, disclosure, consistency, comparability, relevance, materiality, and timeliness. The empirical findings revealed that whistleblowing exerted a positive and statistically significant relationship with all measures of financial reporting quality. The study concluded that whistleblower protection enhances organizational transparency and accountability. While the study focused on financial reporting quality, it did not investigate internal control systems directly. The present study therefore extends the literature by examining the relationship between whistleblowing mechanisms and the robustness of internal control systems within quoted oil and gas companies in Nigeria.

Babarinde, et al. (2024) examined forensic accounting techniques and financial crimes in Nigeria's oil and gas companies. The study investigated whether forensic accounting techniques reduce financial crimes within the sector. A survey research design was adopted using structured questionnaires administered to 206 employees drawn from the audit and finance departments of eight major oil and gas companies in Nigeria. The collected data were analyzed using regression analysis. The explanatory variable was forensic accounting techniques, while financial crimes served as the dependent variable. The findings showed that forensic accounting techniques significantly reduced financial crimes and strengthened fraud prevention within the sampled firms. The study recommended increased investment in forensic accounting capacity to enhance organizational governance. Although the study was conducted within the oil and gas industry, it emphasized financial crimes rather than organizational performance. The current study differs by examining litigation support and whistleblowing mechanisms as dimensions of forensic accounting practices and relating them to the robustness of internal control systems.

3. Methodology

This study adopts the ex-post facto research design. The ex-post facto design is appropriate because the study relies on historical financial and corporate governance information that has already occurred and cannot be manipulated by the researcher (Sunday, 2026; Sunday & Olulu-Briggs, 2026). The design enables the investigation of relationships between forensic accounting practices and organizational performance through the analysis of existing data extracted from the published annual reports of quoted oil and gas companies in Nigeria. Since the variables under investigation have already been observed over time, there is no experimental manipulation or control by the researcher. The study utilizes a balanced panel research framework, combining both cross-sectional observations (quoted oil and gas companies) and time-series observations (2019–2025). The panel structure improves estimation efficiency by increasing the number of observations, minimizing multicollinearity among explanatory variables, capturing firm-specific heterogeneity, and enhancing the reliability of the empirical findings.

The study employs secondary data obtained from corporate financial disclosures. Specifically, the study utilizes balanced panel data, consisting of observations across firms and across time. Panel data combine both time-series and cross-sectional characteristics, thereby allowing the researcher to investigate changes within firms over time while simultaneously comparing differences among firms (Sunday & Wobo, 2025). The study period spans 2019 to 2025, enabling the analysis to capture recent developments in forensic accounting practices and internal control systems within Nigeria's oil and gas industry. The data required for measuring litigation support, whistle-blowing mechanisms, and robust internal control systems are extracted from corporate governance reports, sustainability reports, audit committee reports, risk management reports, whistle-blowing policy disclosures, and notes to the financial statements contained in the annual reports of the sampled firms.

3.1. Model Specification

This study specifies a panel regression model to examine the relationship between forensic accounting practices and organizational performance measured by robust internal control systems.

3.2. Functional Model

$$RICS = f(L, ITSWBM)$$

Where
RICS = Robust Internal Control System
LITS = Litigation Support
WBM = Whistle-Blowing Mechanism

3.3. Mathematical Model

$$RICS = \beta_0 + \beta_1 LITS + \beta_2 WBM + \mu$$

Where
β_0 = Constant
β_1–β_2 = Regression coefficients
μ = Error term

3.3.1. Panel Econometric Model

$$RICS_{it} = \beta_0 + \beta_1 LITS_{it} + \beta_2 WBM_{it} + \varepsilon_{it}$$

Where
i = individual quoted oil and gas company
t = time period (2019–2025)
ε = stochastic disturbance term

3.3.2. Method of Data Analysis

The data generated for this study will be analyzed using panel econometric techniques. Descriptive statistics will first be employed to summarize the characteristics of the variables through measures such as the mean, median, maximum, minimum, and standard deviation. Correlation analysis will also be conducted to examine the degree of association among the variables and to provide preliminary evidence regarding the expected relationships.

Given the panel nature of the dataset, the time-series properties of the variables will be examined by conducting panel unit root (stationarity) tests. Specifically, the Levin-Lin-Chu (LLC) test and the Im-Pesaran-Shin (IPS) test will be employed to determine the order of integration of the variables. These tests account for both common and individual unit root processes across cross-sectional units and help establish whether the variables are stationary at level or after first differencing.

Following the stationarity analysis, the study will estimate pooled ordinary least squares (Pooled OLS), fixed effects, and random effects panel regression models. The pooled effects model assumes homogeneity across firms and ignores firm-specific heterogeneity. The fixed effects model controls for unobservable firm-specific characteristics that remain constant over time, while the random effects model assumes that firm-specific effects are random and uncorrelated with the explanatory variables. To determine the most appropriate estimator between the fixed and random effects models, the Hausman specification test will be conducted.

Where the panel unit root tests indicate that the variables are integrated of the same order, the existence of a long-run equilibrium relationship among the variables will be investigated using panel cointegration tests, such as the Pedroni and Kao panel cointegration procedures. Establishing cointegration will justify estimating the long-run relationship among forensic accounting practices and the robustness of internal control systems.

Where evidence of panel cointegration exists, the study will estimate a panel error correction model (Panel ECM) to capture both the long-run equilibrium relationship and the short-run dynamics among the variables. The error correction term will indicate the speed at which deviations from the long-run equilibrium are corrected following short-run disturbances. A statistically significant and negatively signed error correction coefficient will confirm convergence toward the long-run equilibrium.

All estimations will be conducted at the 5 percent level of significance using appropriate econometric software such as Stata or EViews, and the empirical findings will be interpreted in line with the objectives and hypotheses of the study.

4. Results and Discussion

Table 1 Panel Unit Root (Stationarity) Test Results Using Levin-Lin-Chu (LLC) Method

Variables	Level LLC Statistic	Level Prob.	Decision at Level	First Difference LLC Statistic	First Difference Prob.	Order of Integration
Robust Internal Control System (RICS)	-1.4127	0.0789	Non-Stationary	-8.9345	0.0000	I(1)
Litigation Support (LITS)	-0.8635	0.1938	Non-Stationary	-9.6152	0.0000	I(1)
Whistle-Blowing Mechanism (WBM)	-1.2389	0.1076	Non-Stationary	-10.2487	0.0000	I(1)

Source: Researcher's Computation using Panel Data (2026).

The findings therefore reveal that all the variables are integrated of order one, denoted as I(1), implying that each variable attained stationarity only after being differenced once. The uniform order of integration across the variables provides the necessary econometric justification for conducting panel cointegration tests to determine whether a stable long-run equilibrium relationship exists among forensic accounting practices and the robustness of internal control systems. Furthermore, the results support the subsequent estimation of a Panel Error Correction Model (PECM), which enables the simultaneous examination of both the long-run equilibrium relationship and the short-run dynamic adjustments among the variables. Consequently, the stationarity results confirm that the dataset satisfies the prerequisite conditions for advanced panel data estimation techniques employed in this study.

Table 2 Panel Model Selection Tests

Test	Null Hypothesis	Test Statistic	Probability	Decision
Redundant Fixed Effects F-Test	Pooled Effects model is appropriate	$F(7,46) = 6.8421$	0.0001	Reject H_0
Breusch-Pagan LM Test	No random effects (Pooled Effects preferred)	$\chi^2 = 18.5764$	0.0000	Reject H_0
Hausman Specification Test	Random Effects model is appropriate	$\chi^2(2) = 2.1846$	0.3355	Fail to Reject H_0

Source: Researcher's Computation using Panel Data (2026).

The results presented in Table 2 provide empirical evidence regarding the most appropriate panel estimation technique for the study. The Redundant Fixed Effects F-test produced an F-statistic of 6.8421 with a probability value of 0.0001. Since the probability value is less than the 5 percent significance level, the null hypothesis that the pooled effects model is adequate is rejected. This finding indicates that significant firm-specific effects exist among the quoted oil and gas

companies, implying that the pooled ordinary least squares estimator fails to account for important cross-sectional heterogeneity. Consequently, the fixed effects model performs significantly better than the pooled effects model.

Similarly, the Breusch-Pagan Lagrange Multiplier test generated a Chi-square statistic of 18.5764 with a probability value of 0.0000. The result is statistically significant at the 5 percent level, leading to the rejection of the null hypothesis that there are no random effects. This outcome suggests that individual company-specific effects are present in the panel dataset and that the random effects model is superior to the pooled effects model. Therefore, both the fixed effects and random effects estimators outperform the pooled effects estimator in explaining variations in the robustness of internal control systems across the sampled firms.

Having established that panel-specific effects exist, the Hausman specification test was conducted to determine whether the fixed effects or random effects model provides more efficient and consistent parameter estimates. The Hausman test yielded a Chi-square statistic of 2.1846 with a corresponding probability value of 0.3355, which exceeds the conventional significance threshold of 0.05. As a result, the null hypothesis that the random effects estimator is appropriate cannot be rejected. This indicates that the individual effects are not systematically correlated with the explanatory variables, thereby satisfying the key assumption underlying the random effects model.

Based on the outcome of the Hausman specification test, the Random Effects model is selected as the preferred estimation technique for this study. The selection of the random effects estimator implies that variations in litigation support and whistle-blowing mechanisms across the sampled quoted oil and gas companies can be analyzed more efficiently while accounting for firm-specific heterogeneity that is assumed to be randomly distributed. The random effects model also offers greater estimation efficiency by utilizing both the within-firm and between-firm variations contained in the panel dataset.

The overall model selection results therefore demonstrate that while the presence of firm-specific heterogeneity renders the pooled effects estimator inappropriate, the assumptions of the random effects model are not violated. Consequently, the random effects estimator is adopted for subsequent empirical analyses, including the estimation of the long-run relationship, panel cointegration, and the panel error correction model, to provide reliable and efficient estimates of the relationship between forensic accounting practices and the robustness of internal control systems among quoted oil and gas companies in Nigeria.

Table 3 Pedroni Panel Cointegration Test Results

Test Statistic	Statistic	Probability	Decision
Panel v-Statistic	2.5184	0.0059	Cointegration Exists
Panel rho-Statistic	-2.1837	0.0145	Cointegration Exists
Panel PP-Statistic	-4.7261	0.0000	Cointegration Exists
Panel ADF-Statistic	-3.9158	0.0000	Cointegration Exists
Group rho-Statistic	-1.9643	0.0247	Cointegration Exists
Group PP-Statistic	-5.1486	0.0000	Cointegration Exists
Group ADF-Statistic	-4.3829	0.0000	Cointegration Exists

Source: Researcher's Computation using Panel Data (2026).

The results presented in Table 3 indicate strong evidence of a long-run equilibrium relationship among the variables included in the study. The Panel v-Statistic recorded a value of 2.5184 with a probability value of 0.0059, which is statistically significant at the 5 percent level. Similarly, the Panel rho-Statistic produced a value of −2.1837 with a probability value of 0.0145, while the Panel Phillips-Perron (PP) Statistic and Panel Augmented Dickey-Fuller (ADF) Statistic recorded values of −4.7261 and −3.9158, respectively, each with probability values of 0.0000. These within-dimension statistics consistently reject the null hypothesis of no cointegration, indicating that litigation support, whistle-blowing mechanisms, and the robustness of internal control systems exhibit a stable long-run relationship.

The between-dimension statistics further reinforce this conclusion. The Group rho-Statistic yielded a value of −1.9643 with a probability value of 0.0247, while the Group PP-Statistic and Group ADF-Statistic produced values of −5.1486 and −4.3829, respectively, both significant at the 1 percent level with probability values of 0.0000. The consistency of

statistical significance across the majority of the Pedroni test statistics provides robust empirical evidence that the variables move together over time and are linked by a common long-run equilibrium relationship.

Table 4 Panel Error Correction Model (PECM) Results

Variables	Coefficient	Std. Error	t-Statistic	Probability
C	0.4128	0.1374	3.0044	0.0042
D(LITS)	0.2865	0.0819	3.4982	0.0011
D(WBM)	0.3418	0.0946	3.6135	0.0008
ECM(-1)	-0.6874	0.1162	-5.9157	0.0000

Model Diagnostic Statistics	Value
R-squared	0.6843
Adjusted R-squared	0.6618
F-statistic	30.4576
Prob (F-statistic)	0.0000
Durbin-Watson Statistic	2.0315

Source: Researcher's Computation using Panel Data (2026).

The results presented in Table 4 reveal the short-run dynamic relationship between forensic accounting practices and the robustness of the internal control system among quoted oil and gas companies in Nigeria. The model demonstrates a good overall fit, as indicated by an R-squared value of 0.6843, implying that approximately 68.43 percent of the short-run variations in the robustness of the internal control system are jointly explained by changes in litigation support and whistle-blowing mechanisms. The adjusted R-squared of 0.6618 further confirms that the explanatory variables retain substantial predictive power after adjusting for the number of regressors included in the model. The overall significance of the model is confirmed by the F-statistic of 30.4576 with a corresponding probability value of 0.0000, indicating that the explanatory variables are jointly significant in explaining variations in the dependent variable during the study period.

The coefficient of the first differenced litigation support variable, D(LITS), is 0.2865 and is statistically significant at the 1 percent level, with a probability value of 0.0011. This positive coefficient indicates that improvements in litigation support practices contribute positively to short-run improvements in the robustness of the internal control system. Specifically, a one-unit increase in litigation support is associated with an average increase of approximately 0.2865 units in the robustness of the internal control system in the short run, holding other factors constant. This finding suggests that effective litigation support enhances legal compliance, facilitates the resolution of financial disputes, strengthens accountability mechanisms, and contributes to stronger internal control practices within the sampled firms.

Similarly, the coefficient of the first differenced whistle-blowing mechanism, D(WBM), is 0.3418, with a probability value of 0.0008, indicating statistical significance at the 1 percent level. The positive coefficient signifies that improvements in whistle-blowing mechanisms significantly strengthen the robustness of internal control systems in the short run. This implies that organizations with more effective whistle-blowing policies, reporting channels, and protection mechanisms are better positioned to detect fraudulent activities promptly, improve transparency, and reinforce internal governance structures. The magnitude of the coefficient also suggests that whistle-blowing mechanisms contribute slightly more to short-run improvements in internal control systems than litigation support within the sampled companies.

The most important component of the Panel Error Correction Model is the error correction term, represented by ECM(-1). The coefficient of the error correction term is −0.6874, which is negative and highly significant, with a probability value of 0.0000. The negative sign conforms to econometric expectations and confirms the existence of a stable long-run equilibrium relationship among the variables. The magnitude of the coefficient indicates that approximately 68.74 percent of any short-run disequilibrium in the robustness of the internal control system is corrected within one accounting period. This relatively high adjustment speed suggests that deviations from the long-run equilibrium are

corrected fairly rapidly, reflecting the ability of quoted oil and gas companies to restore equilibrium following temporary shocks affecting forensic accounting practices or internal control processes.

The Durbin-Watson statistic of 2.0315 indicates the absence of significant first-order serial correlation in the residuals, suggesting that the estimated model is free from autocorrelation problems and that the parameter estimates are reliable. The diagnostic statistics therefore support the adequacy of the estimated Panel Error Correction Model for empirical inference.

Overall, the Panel Error Correction Model confirms that litigation support and whistle-blowing mechanisms exert significant positive short-run relationships with the robustness of internal control systems while simultaneously maintaining a stable long-run equilibrium relationship. The statistically significant and negative error correction coefficient provides strong empirical evidence that any temporary deviations from long-run equilibrium are corrected over time, thereby validating the use of the Panel Error Correction framework. These findings imply that sustained improvements in forensic accounting practices not only produce immediate enhancements in organizational internal control systems but also contribute to maintaining long-term institutional stability and governance effectiveness among quoted oil and gas companies in Nigeria.

5. Discussion of Findings

The findings of this study provide empirical evidence on the relationship between forensic accounting practices and organizational performance, measured by the robustness of the internal control system, among quoted oil and gas companies in Nigeria. The study specifically examined the relationships between litigation support and the effectiveness of internal control systems, as well as whistle-blowing mechanisms and the robustness of internal control systems. The empirical results reveal that both dimensions of forensic accounting practices are positively and significantly associated with organizational performance, thereby underscoring the strategic role of forensic accounting in strengthening corporate governance and mitigating financial irregularities within the Nigerian oil and gas industry.

The empirical findings indicate that litigation support exhibits a positive and statistically significant relationship with the robustness of the internal control system. The Panel Error Correction Model revealed a positive coefficient for litigation support, implying that improvements in litigation support practices are associated with corresponding improvements in internal control systems. This finding suggests that organizations that effectively engage forensic accounting professionals in litigation support services are better equipped to identify financial irregularities, preserve documentary evidence, resolve commercial disputes, and strengthen compliance with regulatory requirements. Litigation support provides management with credible financial analyses and expert opinions that enhance decision-making during legal proceedings, thereby reinforcing accountability and improving the overall effectiveness of organizational control mechanisms. The finding also implies that the availability of forensic expertise during investigations discourages fraudulent practices because employees become more aware that financial misconduct can be professionally investigated and successfully prosecuted.

This finding is consistent with the theoretical assumptions of the Fraud Diamond Theory, which posits that fraud can be effectively prevented when organizations strengthen their capacity to detect and investigate fraudulent activities through specialized expertise. Litigation support contributes directly to this objective by providing technical knowledge required to establish evidence, quantify losses, and support judicial processes, thereby improving organizational governance. The result also aligns with the Agency Theory, which emphasizes the need for effective monitoring mechanisms to minimize conflicts of interest between managers and shareholders. Through litigation support, organizations establish stronger monitoring frameworks that discourage opportunistic behaviour and improve internal accountability.

The finding corroborates several empirical studies that have reported positive relationships between litigation support and organizational performance. Previous studies have concluded that litigation support services enhance fraud detection, improve financial reporting credibility, strengthen legal compliance, and contribute significantly to the effectiveness of internal control systems. These studies argue that organizations with well-developed litigation support structures are more capable of resolving financial disputes efficiently while minimizing the operational and reputational risks associated with fraud and financial misconduct. Consequently, the present finding reinforces the growing body of empirical evidence suggesting that litigation support represents an essential component of forensic accounting practices that enhances organizational performance through improved internal control effectiveness.

The study further reveals that whistle-blowing mechanisms maintain a positive and statistically significant relationship with the robustness of the internal control system. The estimated coefficient indicates that organizations with stronger

whistle-blowing mechanisms tend to possess more effective and reliable internal control systems. This finding suggests that the establishment of confidential reporting channels, protection of whistle-blowers against retaliation, and prompt investigation of reported misconduct significantly improve organizational transparency and accountability. Effective whistle-blowing mechanisms encourage employees, suppliers, customers, and other stakeholders to report unethical practices without fear of victimization, thereby facilitating the early detection and prevention of fraud before it escalates into substantial financial losses.

The positive relationship observed between whistle-blowing mechanisms and internal control systems is consistent with the Fraud Triangle Theory, which maintains that opportunities for fraud can be substantially reduced through effective monitoring and reporting mechanisms. By encouraging timely reporting of unethical conduct, whistle-blowing systems reduce opportunities for fraudulent behaviour and strengthen organizational control environments. The finding is equally supported by Agency Theory, which advocates the implementation of governance structures capable of reducing information asymmetry between management and stakeholders. Whistle-blowing mechanisms serve as an independent communication channel through which organizational stakeholders can report misconduct, thereby improving transparency and strengthening corporate governance practices.

The result is also consistent with numerous empirical investigations that have documented the effectiveness of whistle-blowing systems in improving corporate governance, fraud detection, internal audit quality, and financial accountability. Earlier studies have demonstrated that organizations with effective whistle-blowing frameworks experience lower incidences of fraud, higher levels of ethical compliance, and stronger internal control environments than organizations lacking such mechanisms. The present finding therefore provides additional empirical support for the proposition that whistle-blowing mechanisms constitute an indispensable component of forensic accounting practices capable of enhancing organizational performance through improved governance and stronger internal controls.

The panel cointegration results further demonstrate that forensic accounting practices and the robustness of internal control systems maintain a stable long-run equilibrium relationship. This finding implies that although temporary fluctuations may occur due to firm-specific operational challenges or changing economic conditions, litigation support and whistle-blowing mechanisms continue to exert sustained positive relationships with internal control systems over time. The statistically significant and negative error correction coefficient further confirms that any short-run disequilibrium adjusts toward long-run equilibrium at a relatively rapid rate. This suggests that quoted oil and gas companies possessing effective forensic accounting structures are able to restore organizational stability following temporary disruptions, thereby maintaining the long-term effectiveness of their internal control systems.

Overall, the findings of this study demonstrate that forensic accounting practices constitute critical organizational mechanisms for strengthening internal control systems within quoted oil and gas companies in Nigeria. The positive relationships established between litigation support, whistle-blowing mechanisms, and the robustness of internal control systems indicate that investments in forensic accounting capabilities contribute significantly to improved governance, enhanced fraud prevention, stronger regulatory compliance, and sustainable organizational performance. These findings therefore provide empirical justification for encouraging oil and gas companies to institutionalize comprehensive forensic accounting practices as an integral component of their corporate governance and risk management frameworks.

6. Conclusion

This study examined the relationship between forensic accounting practices and organizational performance, with performance measured by the robustness of the internal control system, among quoted oil and gas companies in Nigeria over the period 2019–2025. The study focused specifically on litigation support and whistle-blowing mechanisms as dimensions of forensic accounting practices and employed panel econometric techniques to investigate both the short-run and long-run relationships among the variables.

Based on the findings of the study, it is concluded that litigation support has a significant positive relationship with the robustness of the internal control system of quoted oil and gas companies in Nigeria. The findings demonstrate that organizations that strengthen litigation support through the engagement of forensic accounting expertise, proper documentation of financial evidence, and effective handling of financial disputes are more likely to maintain effective internal control systems. Litigation support therefore serves as an important governance mechanism that enhances accountability, improves compliance with legal and regulatory requirements, and minimizes the likelihood of financial misconduct. The study concludes that strengthening litigation support practices contributes substantially to improving the effectiveness and sustainability of internal control systems within the Nigerian oil and gas sector.

The study also concludes that whistle-blowing mechanisms have a significant positive relationship with the robustness of the internal control system among quoted oil and gas companies in Nigeria. The empirical evidence indicates that organizations with effective whistle-blowing frameworks, confidential reporting channels, and adequate protection for whistle-blowers are better positioned to detect unethical practices at an early stage, strengthen transparency, and improve organizational accountability. Effective whistle-blowing mechanisms foster an ethical organizational culture that enhances fraud detection and prevention while reinforcing the overall effectiveness of internal control systems. Consequently, the study concludes that the institutionalization of effective whistle-blowing mechanisms remains an indispensable component of forensic accounting practices required for sustaining strong internal control systems.

Furthermore, the confirmation of a long-run equilibrium relationship among the study variables indicates that forensic accounting practices contribute not only to immediate improvements in organizational control systems but also to their long-term stability and resilience. The significant error correction mechanism demonstrates that temporary deviations from equilibrium are corrected over time, suggesting that organizations with stronger forensic accounting practices are better able to restore and maintain effective internal control systems following operational or financial disruptions.

In conclusion, the study establishes that forensic accounting practices are fundamental to strengthening organizational performance through robust internal control systems in quoted oil and gas companies in Nigeria. The evidence suggests that continuous investment in litigation support and whistle-blowing mechanisms enhances corporate governance, improves fraud prevention and detection, reinforces regulatory compliance, and promotes sustainable organizational performance. The study therefore concludes that strengthening these dimensions of forensic accounting should remain a strategic priority for quoted oil and gas companies seeking to improve the effectiveness of their internal control systems and ensure long-term organizational sustainability.

Limitations of the Study

This study was subject to certain limitations that should be considered when interpreting its findings. First, the study relied exclusively on secondary data obtained from the published annual reports of quoted oil and gas companies in Nigeria. Consequently, the analysis was limited to the information disclosed in these reports, and any forensic accounting practices or internal control activities not publicly reported could not be captured.

Secondly, the study covered only quoted oil and gas companies that were actively listed on the Nigerian Exchange during the period 2019–2025. As a result, the findings may not be directly generalizable to unlisted oil and gas firms or organizations operating in other sectors of the Nigerian economy, which may possess different corporate governance structures and operational characteristics.

Finally, the study focused on two dimensions of forensic accounting practices—litigation support and whistle-blowing mechanisms—and measured organizational performance using the robustness of the internal control system. Although these variables adequately addressed the study objectives, other dimensions of forensic accounting practices and alternative measures of organizational performance were outside the scope of this research and may provide additional insights in future studies.

Recommendations

Based on the findings of this study, it is recommended that quoted oil and gas companies in Nigeria should strengthen their litigation support functions by engaging qualified forensic accounting professionals in the investigation and resolution of financial disputes, fraud cases, and regulatory matters. Management should ensure that litigation support is fully integrated into corporate governance and risk management frameworks, as this will enhance the quality of financial investigations, improve legal compliance, reinforce accountability, and contribute to the development of more robust internal control systems.

Furthermore, quoted oil and gas companies should establish and continuously strengthen effective whistle-blowing mechanisms by providing secure, confidential, and easily accessible reporting channels for employees and other stakeholders. Organizations should also implement comprehensive whistle-blower protection policies that safeguard individuals from retaliation while ensuring that reported cases are investigated promptly and objectively. Strengthening whistle-blowing mechanisms will encourage the early detection and reporting of unethical practices, improve transparency, enhance fraud prevention efforts, and further reinforce the robustness of internal control systems within the organizations.

In addition, regulatory authorities, boards of directors, and audit committees should encourage the institutionalization of forensic accounting practices by developing policies that promote regular assessments of litigation support processes

and whistle-blowing systems. Continuous monitoring and periodic reviews of these forensic accounting practices will ensure that internal control systems remain effective in responding to emerging fraud risks, changing regulatory requirements, and the evolving operational environment of the Nigerian oil and gas industry.

Finally, management of quoted oil and gas companies should invest in periodic training and capacity development programmes for employees, internal auditors, compliance officers, and members of audit committees on forensic accounting techniques, fraud risk management, and ethical reporting practices. Such initiatives will strengthen the overall control environment, improve organizational awareness of fraud prevention strategies, and support the long-term sustainability and effectiveness of internal control systems.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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