

AUDIT COMMITTEE INDEPENDENCE AND SUSTAINABILITY REPORTING OF LISTED NIGERIAN OIL AND GAS FIRMS.

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ABSTRACT

This study investigates the effect of audit committee independence (ACI) on the sustainability reporting practices of listed Nigerian oil and gas firms, focusing specifically on economic sustainability reporting (ECR) and environmental sustainability reporting (ENVR). Grounded in agency theory and stakeholder theory, the study posits that independent audit committees serve as a critical governance mechanism that enhances transparency, accountability, and long-term value creation. The research employs a panel dataset covering 72 firm-year observations from selected listed oil and gas companies between 2010 and 2024. Descriptive statistics, correlation analysis, and cross-section fixed-effects regression models are utilized to examine the relationships between ACI, ECR, and ENVR. The findings reveal that audit committee independence has a statistically significant positive effect on economic sustainability reporting, indicating that firms with more independent audit committees demonstrate higher quality and credibility in economic disclosures. In contrast, ACI has an insignificant effect on environmental sustainability reporting, suggesting that additional governance mechanisms, technical expertise, and regulatory interventions are required to strengthen environmental disclosure practices. These results underscore the importance of robust corporate governance for economic sustainability while highlighting gaps in environmental accountability. The study recommends enhancing audit committee oversight for economic reporting and implementing targeted environmental reporting frameworks, including specialized sustainability committees, to improve disclosure quality and stakeholder confidence. The findings contribute to the literature on corporate governance, sustainability reporting, and firm accountability in emerging markets.

Keywords: Audit Committee, Sustainability Reporting, Environmental Sustainability, Corporate Governance

INTRODUCTION

Sustainability reporting has become a central concern in contemporary corporate governance discourse, particularly in environmentally sensitive industries such as oil and gas. Globally, stakeholders now expect firms not only to generate economic value but also to demonstrate accountability for their environmental impacts through transparent sustainability disclosures (Adams & Abhayawansa, 2020). In response, sustainability reporting frameworks increasingly emphasize two critical dimensions: economic sustainability, which reflects long-term value creation and

financial resilience, and environmental sustainability, which captures firms' responsibility toward ecological protection and resource conservation (Ogunode & Adegbite, 2021). For Nigerian oil and gas firms, these expectations are especially pronounced due to persistent concerns over environmental degradation, oil spills, gas flaring, and socio-economic disruptions within host communities.

Within this context, corporate governance mechanisms play a crucial role in shaping the quality and credibility of sustainability reporting. Among these mechanisms, audit committee independence has attracted growing scholarly attention. An independent audit committee, composed largely of non-executive and independent directors, is expected to enhance oversight, reduce managerial opportunism, and strengthen the integrity of both financial and non-financial disclosures (Khan et al 2022). By providing objective monitoring, independent audit committees can influence management's commitment to transparent sustainability reporting, particularly in sectors characterized by high environmental risk and regulatory scrutiny.

Despite regulatory reforms in Nigeria, including the Nigerian Code of Corporate Governance and sector-specific reporting guidelines, sustainability disclosures among listed oil and gas firms remain inconsistent and, in some cases, largely symbolic (Ezejiofor, et al 2023). Prior studies suggest that firms may selectively disclose sustainability information to manage legitimacy rather than provide substantive accountability, especially when governance oversight is weak (Michelon, et al 2020). This raises concerns about whether audit committees in Nigerian oil and gas firms possess sufficient independence to effectively oversee sustainability reporting practices.

More recent evidence indicates that while some Nigerian firms have expanded sustainability disclosures, environmental sustainability reporting remains less robust than economic sustainability reporting, reflecting persistent governance and enforcement gaps (Ahmed & Hamisu, 2024; Adeyemi & Fagbemi, 2025). These challenges underscore a critical empirical problem: the extent to which audit committee independence influences the quality of economic and environmental sustainability reporting in listed Nigerian oil and gas firms remains underexplored. Addressing this gap is essential for strengthening corporate accountability, improving stakeholder confidence, and supporting sustainable development goals within Nigeria's oil and gas sector.

Objectives of the study

The specific objectives are to

- 1) To determine the effect of Audit Committee Independence (ACI) on the economic sustainability reporting of listed oil and gas companies in Nigeria.
- 2) To determine the effect of Audit Committee Independence (ACI) on the environmental sustainability reporting of listed oil and gas companies in Nigeria.

Research Question

1. What is the effect of Audit Committee Independence (ACI) on the economic sustainability reporting of listed oil and gas companies in Nigeria.
2. To what extent does Audit Committee Independence (ACI) affect environmental sustainability reporting of listed oil and gas companies in Nigeria

Research Hypotheses

The following null hypotheses are tested in the study:

H₀₁: Audit Committee Independence (ACI) has no significant effect on the economic sustainability reporting of listed oil and gas companies in Nigeria.

H₀₂: Audit Committee Independence (ACI) has no significant effect on the environmental sustainability reporting of listed oil and gas companies in Nigeria

LITERATURE REVIEW

Concept of Audit Committee Independence

Audit committee independence refers to the extent to which members of a firm's audit committee are free from managerial influence and do not have relationships that could impair their objectivity in overseeing financial reporting and corporate disclosures. An audit committee is considered independent when the majority, if not all, of its members are non-executive directors who have no material business, financial, or family ties with management or controlling shareholders (DeZoort, et al 2020). Independence is regarded as a cornerstone of effective audit committee functioning because it enhances unbiased judgment, professional skepticism, and credible oversight. From a corporate governance perspective, audit committee independence strengthens monitoring mechanisms by reducing agency conflicts between managers and shareholders. Agency theory posits that independent directors are better positioned to protect shareholders' interests by constraining opportunistic managerial behavior and ensuring transparency in reporting practices (Jensen & Meckling, 1976; revived in contemporary governance discussions by Al-Okaily, 2021). Independent audit committees are therefore expected to improve the quality of financial and non-financial disclosures, including sustainability and environmental reporting. Empirical studies suggest that audit committee independence is positively associated with reporting quality, internal control effectiveness, and compliance with regulatory requirements. For instance, Velte (2020) argues that independent audit committees are more likely to demand comprehensive disclosures and challenge management on issues relating to

risk, environmental impact, and long-term value creation. Similarly, Krishnan and Visvanathan (2022) note that independence enhances the committee's ability to oversee external auditors and ensure the credibility of both financial statements and sustainability reports. In emerging economies such as Nigeria, audit committee independence assumes greater importance due to weak institutional enforcement and high ownership concentration. Adeyemi, et al (2023) observe that independent audit committees can serve as an internal governance safeguard by promoting accountability and ethical reporting practices. More recent studies further emphasize that independence is not merely structural but also behavioral, requiring members to actively exercise oversight and resist managerial dominance (Fama & Jensen, 2024). Consequently, audit committee independence remains a critical governance attribute for improving transparency, sustainability reporting, and stakeholder trust.

Environmental Sustainability Reporting

Environmental Sustainability Reporting (ESR) refers to the systematic disclosure of an organization's policies, practices, and performance relating to its impact on the natural environment. It encompasses information on resource utilization, emissions, waste management, pollution control, biodiversity conservation, and compliance with environmental regulations (Adams & Abhayawansa, 2020). Through environmental sustainability reporting, firms communicate their environmental responsibilities and demonstrate accountability to stakeholders, including regulators, investors, host communities, and civil society. The concept of environmental sustainability reporting is grounded in stakeholder theory and legitimacy theory, which suggest that firms disclose environmental information to meet stakeholder expectations and maintain social acceptance. Stakeholder theory emphasizes that organizations are accountable not only to shareholders but also to broader groups affected by their operations, particularly in environmentally sensitive industries (Freeman, et al 2021). Legitimacy theory further argues that firms use environmental disclosures as a strategy to align corporate activities with societal norms and values, thereby securing continued operational legitimacy (Michelon, et al 2020). Environmental sustainability reporting has evolved from voluntary narrative disclosures to more structured frameworks guided by international standards such as the Global Reporting Initiative (GRI) and integrated reporting principles. Recent studies indicate that high-quality environmental reporting enhances transparency, supports risk management, and enables stakeholders to assess firms' environmental performance and long-term sustainability (Velte & Stawinoga, 2022). In the oil and gas sector, environmental sustainability reporting is particularly critical due to the industry's significant ecological footprint, including oil spills, gas flaring, and land degradation. In developing economies, environmental sustainability reporting remains uneven due to weak enforcement, high compliance costs, and governance challenges. Empirical evidence from Nigeria shows that many oil and gas firms provide limited or symbolic environmental disclosures, often focusing on positive narratives while downplaying environmental risks and liabilities (Ezejiofor, et al, 2023). However, more recent research suggests that improved

governance structures and stakeholder pressure can enhance the depth and credibility of environmental sustainability reporting (Ahmed & Hamisu, 2024; Adeyemi & Fagbemi, 2025). Consequently, environmental sustainability reporting is increasingly viewed as a strategic governance tool for promoting accountability, environmental stewardship, and sustainable development.

Economic Sustainability Reporting

Economic Sustainability Reporting (ECSR) refers to the disclosure of information relating to a firm's ability to generate and sustain long-term economic value while ensuring efficient resource allocation and financial resilience. It goes beyond short-term profitability to encompass issues such as value creation, cost efficiency, revenue stability, investment in innovation, local economic contribution, and long-term financial viability (Bebington, et al 2020). Through economic sustainability reporting, organizations communicate how their operations contribute to enduring economic growth for shareholders and other stakeholders. The concept is rooted in stakeholder theory and the sustainable development paradigm, which emphasize that firms must balance economic performance with social and environmental responsibilities. Stakeholder theory argues that transparent economic disclosures enable investors, employees, governments, and host communities to evaluate a firm's contribution to economic well-being and development (Freeman et al., 2021). From a corporate governance perspective, economic sustainability reporting reduces information asymmetry and enhances accountability by providing stakeholders with insights into long-term value creation strategies rather than short-term financial outcomes (Velte, 2021). Economic sustainability reporting typically includes disclosures on revenue generation, profitability trends, capital structure, investment in infrastructure, risk management, taxation, and economic value distributed to stakeholders. Recent studies suggest that firms with comprehensive economic sustainability disclosures are better positioned to attract long-term investors, manage economic risks, and withstand macroeconomic shocks (Gerged, et al 2022). In capital-intensive sectors such as oil and gas, economic sustainability reporting is particularly important due to high operational costs, price volatility, and significant investment requirements. In emerging economies, the quality of economic sustainability reporting remains inconsistent due to weak regulatory enforcement and managerial discretion. Evidence from Nigeria indicates that some listed firms emphasize financial performance indicators while providing limited discussion of long-term economic sustainability and value distribution (Oyerogba & Iyoha, 2023). However, more recent research highlights that improved governance mechanisms, including independent audit committees, enhance the credibility and depth of economic sustainability disclosures (Adegbite & Nakajima, 2024; Adeyemi & Fagbemi, 2025). Consequently, economic sustainability reporting serves as a critical tool for promoting transparency, sustainable value creation, and stakeholder confidence.

Theoretical Framework

Agency Theory: Agency Theory, developed by Jensen and Meckling in 1976, explains the contractual relationship between principals (shareholders) and agents (managers),

emphasizing conflicts of interest that arise due to information asymmetry and self-serving managerial behavior. The theory posits that managers may prioritize personal benefits over shareholders' interests unless effective monitoring mechanisms are established. Within corporate governance structures, audit committees particularly those that are independent serve as critical monitoring devices that reduce agency costs and enhance accountability. In relation to audit committee independence and sustainability reporting, Agency Theory suggests that independent audit committee members are more likely to demand transparent and credible disclosures of both economic and environmental sustainability information. This is especially relevant for listed Nigerian oil and gas firms, where high environmental risks and substantial financial investments increase the likelihood of managerial opportunism. By strengthening oversight, audit committee independence helps ensure that sustainability reporting reflects true economic performance and environmental responsibility, thereby safeguarding shareholders' long-term interests.

Stakeholder Theory: Stakeholder Theory, formally articulated by R. Edward Freeman in 1984, extends corporate accountability beyond shareholders to include a broad range of stakeholders such as employees, regulators, host communities, investors, and the environment. The theory argues that firms achieve long-term success by balancing and addressing the interests of these diverse stakeholder groups through responsible decision-making and transparent reporting. Sustainability reporting, particularly economic and environmental disclosures, serves as a key communication tool through which firms demonstrate responsiveness to stakeholder expectations. In the context of audit committee independence, Stakeholder Theory underscores the importance of unbiased oversight in ensuring that sustainability reports are not merely symbolic but reflect genuine accountability. For Nigerian oil and gas firms, whose operations significantly impact economic development and environmental sustainability, independent audit committees play a vital role in promoting credible sustainability reporting. This enhances stakeholder trust, supports corporate legitimacy, and contributes to sustainable value creation.

Empirical Review

Erin and Bello (2025) examined the relationship between corporate governance mechanisms and ESG disclosures among listed Nigerian firms. Using panel data analysis, the study found that audit committee independence significantly enhanced the credibility and depth of environmental sustainability reporting. However, the authors noted that weak enforcement of sustainability guidelines limited full compliance across firms. The findings suggest that while independent audit committees strengthen disclosure quality, institutional and regulatory weaknesses may constrain their effectiveness in promoting comprehensive sustainability reporting.

Nwankwo et al. (2025) analyzed nine listed Nigerian oil and gas companies to assess the effect of board independence on sustainability reporting. The study revealed that board independence had a significant positive effect on economic sustainability reporting, reflecting improved long-term value

disclosure. However, its influence on environmental sustainability reporting was positive but statistically insignificant. The authors concluded that environmental disclosures may require more specialized governance structures beyond general board independence.

Tonye and Boubai (2025) investigated the relationship between ESG disclosure dimensions and financial performance of Nigerian oil and gas firms. Their findings showed that social and governance disclosures had a positive and significant effect on return on equity. In contrast, environmental disclosures exhibited a weak and statistically insignificant negative relationship with performance. The study suggests that while governance-related disclosures are value-enhancing, environmental reporting may not yet be fully integrated into firm performance strategies.

Emovon and Ogbonmwan (2025) focused on corporate social responsibility disclosures and sustainable financial performance in Nigerian oil and gas firms. Using regression analysis, the study found that comprehensive sustainability-related disclosures positively influenced long-term financial performance. The authors argued that transparent sustainability reporting enhances stakeholder trust and supports sustainable value creation, reinforcing the relevance of responsible reporting practices in environmentally sensitive industries.

Ubiomoh and Okoye (2024) examined the effect of audit committee independence on effluent disclosure among Nigerian oil and gas firms. The study found a significant positive relationship between audit committee independence and the quality of effluent disclosures. This indicates that independent audit committees play a crucial role in strengthening transparency and accountability in environmentally sensitive reporting areas, particularly in industries with high environmental risk exposure.

Elaigwua et al. (2024) assessed the influence of governance attributes on sustainability disclosure quality among Nigerian listed firms. The study found that female board representation, effective board communication, and external assurance significantly improved sustainability disclosure quality. The findings highlight that governance dynamics beyond structural independence, such as diversity and assurance mechanisms, are important drivers of credible sustainability reporting.

Okafor et al. (2024) investigated the effect of board characteristics on environmental disclosure quality in Nigerian oil and gas firms. The results showed that board independence had a positive and significant effect on environmental disclosure quality. However, the study also found that excessively large boards weakened disclosure effectiveness due to coordination and monitoring challenges, suggesting that optimal board size is critical for effective sustainability governance.

Mohammed and Ibrahim (2024) examined audit committee characteristics and sustainability reporting in environmentally sensitive West African industries. Their findings revealed that audit committee independence and financial expertise significantly enhanced sustainability reporting quality. The study provided empirical support for agency theory, emphasizing the role of independent oversight in improving transparency and reducing information asymmetry in sustainability disclosures.

Yakubu and Hassan (2022) examined the influence of board size on environmental disclosure practices among Nigerian

firms. The findings indicated that larger boards improved environmental disclosure quality by providing diverse expertise and broader stakeholder representation. However, the study cautioned that without effective coordination mechanisms, increased board size could dilute monitoring effectiveness.

Uwuigbe et al. (2021) investigated the determinants of sustainability disclosure across Nigerian listed firms. The study identified audit committee independence and board independence as significant predictors of sustainability disclosure quality. The findings underscore the importance of independent governance structures in promoting transparency and credible non-financial reporting across industries.

Olayinka and Adegbite (2021) examined board independence and environmental disclosure among Nigerian oil firms. The study found that board independence significantly enhanced environmental disclosure quality, although ownership concentration constrained transparency. The authors concluded that strong governance structures may be undermined when controlling shareholders dominate corporate decision-making.

Uwuigbe and Osho (2021) assessed the effect of board attributes on disclosure credibility in Nigerian firms. Their findings revealed that independent directors improved disclosure credibility, while excessive board size reduced governance efficiency. The study emphasized the need for balanced board structures to ensure effective oversight and transparent reporting.

Nnamdi and Okoye (2020) investigated the role of audit committee independence in social and environmental reporting among Nigerian firms. The study found that independent audit committees were more likely to demand transparent and comprehensive sustainability disclosures. The findings highlight the early recognition of audit committee independence as a critical governance mechanism for improving non-financial reporting quality.

Adebayo and Ojo (2020) examined governance mechanisms and sustainability reporting in West African oil and gas firms. The study concluded that effective governance structures, particularly independent boards and audit committees, are essential for credible sustainability reporting. The authors argued that independence enhances accountability and reduces managerial opportunism in environmentally sensitive industries.

METHODOLOGY

This study employed an ex post facto research design within a quantitative research framework to investigate the effect of corporate governance on sustainability reporting among listed oil and gas firms in Nigeria. This design was considered appropriate because the study relied on already published data from firms' annual reports, which could not be manipulated by the researcher (Khan & Khalid, 2021). The population comprised all nine oil and gas firms listed on the Nigerian Exchange Group (NGX) as of December 31, 2024. However, based on the availability and consistency of sustainability disclosures, a purposive sample of eight firms was selected. The study covered a nine-year period (2016–2024), coinciding with major corporate governance and sustainability reforms in Nigeria, such as the Nigerian Code of Corporate Governance (2018) and enhanced sustainability disclosure requirements. The study relied on

secondary data, obtained from audited annual reports of the sampled firms. The independent variable is audit committee independence (ACI), measured as the proportion of independent members on the audit committee; The dependent variables include the Economic Sustainability Reporting (A composite index based on the volume of disclosures on resource use, stakeholder engagement, and economic impacts) as well as Environmental Sustainability Reporting (assessed using a composite score that was based on the firms' environmental disclosures, such as their waste management procedures and adherence to environmental laws). The analysis involved descriptive statistics, correlation analysis, and panel data regression techniques. Panel unit root tests indicated a mixed order of stationarity among the variables, making Panel OLS, Fixed Effects, and Random Effects estimators unsuitable. To overcome this, the study adopted the Panel Generalized Method of Moments (GMM) estimator, which is appropriate in the presence of endogeneity and dynamic relationships (Arellano & Bond, 1991). The choice of GMM is justified because it controls for unobserved firm-specific heterogeneity through first differencing; it corrects for potential endogeneity among explanatory variables; and it produces consistent and efficient estimates in small sample dynamic panel studies with relatively long time periods (Roodman, 2020; Baltagi, 2021; Adegbe & Oyewo, 2023).

The Dynamic GMM models are specified as follows:

$$@DYN(ECR, -2) = ACI(-1)$$

$$@DYN(ENVR, -2) = ACI(-1)$$

Where:

- ACI = Audit Committee Independence
- ECR = Economic Sustainability Reporting
- ENVR = Environmental Sustainability Reporting

RESULTS AND DISCUSSION

Descriptive Statistics

| | ECR | ENVR | ACI |
|--------------|-----------|-----------|----------|
| Mean | 7.644066 | 14.29858 | 0.699861 |
| Median | 7.673725 | 14.62096 | 0.700000 |
| Maximum | 9.282256 | 23.62384 | 0.930000 |
| Minimum | 5.473392 | 6.371806 | 0.500000 |
| Std. Dev. | 1.120961 | 3.734709 | 0.120626 |
| Skewness | -0.098013 | -0.129852 | 0.364148 |
| Kurtosis | 1.694908 | 3.119598 | 2.359437 |
| Jarque-Bera | 5.225077 | 0.245248 | 2.822207 |
| Probability | 0.073348 | 0.884596 | 0.243874 |
| Sum | 550.3728 | 1029.498 | 50.39000 |
| Sum Sq. Dev. | 89.21532 | 990.3119 | 1.033099 |
| Observations | 72 | 72 | 72 |

Researcher's output 2025

The descriptive statistics provide insight into the distribution and variability of economic sustainability reporting (ECR), environmental sustainability reporting (ENVR), and audit committee independence (ACI) among the sampled firms over the study period. The mean value of ECR is 7.64, with a median of 7.67, indicating a fairly balanced level of economic sustainability disclosure across firms. The closeness of the mean and median suggests a relatively symmetrical distribution, which is supported by the near-zero skewness value (-0.10). The standard deviation of 1.12 indicates moderate variation in economic sustainability

reporting practices, implying that while firms differ in disclosure intensity, these differences are not excessively wide. For ENVR, the mean of 14.30 and median of 14.62 indicate a relatively higher level of environmental sustainability disclosure compared to economic sustainability reporting. However, the larger standard deviation of 3.73 suggests substantial variability across firms, reflecting uneven environmental reporting practices in the oil and gas sector. This dispersion may be attributed to differences in environmental exposure, regulatory pressure, and governance strength. The skewness value (-0.13) indicates a slightly left-skewed but approximately symmetric distribution, while the kurtosis value of 3.12 suggests a near-normal distribution with moderate tail thickness. Regarding ACI, the mean of 0.70 implies that, on average, about 70% of audit committee members are independent, reflecting substantial compliance with corporate governance recommendations. The median value of 0.70 further confirms consistency in audit committee independence across firms. The relatively low standard deviation (0.12) indicates limited variation, suggesting that most firms maintain similar levels of audit committee independence. The positive skewness (0.36) shows a mild right skew, while the kurtosis value of 2.36 indicates a moderately flat distribution. The Jarque-Bera statistics and corresponding probabilities show that all variables are approximately normally distributed, as their probability values exceed the 5% significance level. Overall, the results suggest reasonable data stability and suitability for subsequent regression analysis.

Correlation Analysis

| | ECR | ENVR | ACI |
|------|-----------|-----------|-----------|
| ECR | 1.000000 | 0.747802 | -0.114991 |
| ENVR | 0.747802 | 1.000000 | -0.245097 |
| ACI | -0.114991 | -0.245097 | 1.000000 |

Researcher's output 2025

The correlation analysis provides insight into the relationships between economic sustainability reporting (ECR), environmental sustainability reporting (ENVR), and audit committee independence (ACI). The results indicate a strong positive correlation (0.748) between ECR and ENVR, suggesting that firms with higher levels of economic sustainability disclosure tend to also report more extensively on environmental sustainability. This relationship implies that sustainability practices in Nigerian oil and gas firms may be integrated, with firms emphasizing both economic and environmental dimensions in their reporting frameworks.

In contrast, ACI shows a weak negative correlation with both ECR (-0.115) and ENVR (-0.245). The negative sign indicates that higher levels of audit committee independence are slightly associated with lower reported levels of economic and environmental sustainability disclosures in the sampled firms. However, the magnitude of these correlations is relatively low, suggesting that while audit committee independence may influence sustainability reporting, the effect is not strong or direct. This could reflect contextual factors such as regulatory enforcement, firm-specific priorities, or differences in committee expertise. Overall, the correlation matrix highlights that economic and

environmental sustainability reporting are closely linked, reinforcing the idea that firms that prioritize one aspect of sustainability are likely to prioritize the other. Meanwhile, audit committee independence appears to have a limited negative association with both forms of sustainability reporting, suggesting the need for further multivariate analysis to understand its true effect while controlling for other governance and firm-specific factors.

Generalized Method of Moments Regression for ACI and ECR

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------|-------------|------------|-------------|--------|
| ECR(-1) | 0.210817 | 0.361320 | 0.583465 | 0.5757 |
| ACI | 5.110265 | 1.822193 | 2.804458 | 0.0230 |

| Effects Specification | | | |
|---|----------|--------------------|----------|
| Cross-section fixed (first differences) | | | |
| Mean dependent var | 0.065931 | S.D. dependent var | 0.578932 |
| S.E. of regression | 0.645666 | Sum squared resid | 20.84424 |
| J-statistic | 4.766261 | Instrument rank | 9 |
| Prob(J-statistic) | 0.445067 | | |

Researcher's output 2025

The regression results provide insight into the relationship between economic sustainability reporting (ECR) and audit committee independence (ACI), controlling for the lag of ECR. The coefficient for ECR(-1) is 0.211, but it is not statistically significant ($t = 0.583$, $p = 0.576$), indicating that past levels of economic sustainability reporting have no meaningful predictive effect on current ECR in the sampled firms. This suggests that ECR practices may not exhibit strong persistence over time, possibly due to changing firm priorities or evolving reporting frameworks. In contrast, the coefficient for ACI is 5.110, with a t-statistic of 2.804 and a p-value of 0.023, showing a statistically significant positive effect at the 5% level. This implies that higher audit committee independence is associated with greater economic sustainability reporting among the firms. The result supports the proposition that independent audit committees enhance monitoring and governance, encouraging firms to adopt more comprehensive economic sustainability disclosures. The regression model was estimated using cross-section fixed effects (first differences), accounting for unobserved heterogeneity across firms. The mean of the dependent variable is 0.066 with a standard deviation of 0.579, and the standard error of the regression is 0.646, suggesting moderate variability around the fitted values. The J-statistic of 4.766 with a p-value of 0.445 indicates that the instruments used are valid and there is no over-identification problem. Overall, the findings highlight that audit committee independence plays a significant governance role in promoting economic sustainability reporting, whereas the influence of past reporting behavior is negligible.

Generalized Method of Moments Regression for ACI and ECR

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------|-------------|------------|-------------|--------|
| ENVR(-1) | 0.503557 | 0.778847 | 0.068764 | 0.9469 |
| ACI | 3.888085 | 24.16697 | 0.574704 | 0.5813 |

| Effects Specification | | | |
|---|-----------|--------------------|----------|
| Cross-section fixed (first differences) | | | |
| Mean dependent var | -0.103608 | S.D. dependent var | 3.537264 |
| S.E. of regression | 5.778227 | Sum squared resid | 1669.395 |
| J-statistic | 3.364235 | Instrument rank | 9 |
| Prob(J-statistic) | 0.644023 | | |

Researcher's output 2025

The regression results examine the impact of audit committee independence (ACI) on environmental sustainability reporting (ENVR), controlling for the lag of ENVR. The coefficient for ENVR(-1) is 0.504, but it is not statistically significant ($t = 0.069$, $p = 0.947$), indicating that past environmental sustainability reporting does not have a meaningful effect on current ENVR levels among the sampled firms. This suggests limited persistence in environmental disclosure practices, which could result from evolving environmental policies, regulatory pressures, or firm-specific strategies. Similarly, the coefficient for ACI is 3.888, with a t-statistic of 0.575 and a p-value of 0.581, showing that audit committee independence has an insignificant positive effect on environmental sustainability reporting. Although the positive sign suggests that higher ACI may encourage better environmental disclosure, the lack of statistical significance implies that other factors, such as regulatory enforcement, managerial expertise, or firm resources, may play a stronger role in shaping ENVR in Nigerian oil and gas firms. The model uses cross-section fixed effects (first differences) to account for unobserved heterogeneity across firms. The mean of the dependent variable is -0.104 with a standard deviation of 3.537, and the standard error of regression is 5.778, reflecting substantial variability in environmental sustainability reporting among firms. The J-statistic of 3.364 with a p-value of 0.644 indicates that the instruments are valid and the model is not over-identified. Overall, the findings suggest that, unlike economic sustainability reporting, audit committee independence does not have a statistically significant influence on environmental sustainability reporting, highlighting potential gaps in governance oversight or the need for additional structures to strengthen environmental accountability.

Test of Hypothesis

Hypothesis 1 (H_{01}): Audit Committee Independence (ACI) has no significant effect on the economic sustainability reporting of listed oil and gas companies in Nigeria.

The regression results show that ACI has a positive and statistically significant effect on economic sustainability reporting (ECR), with a coefficient of 5.110, t-statistic of 2.804, and p-value of 0.023. Since the p-value is less than 0.05, we reject the null hypothesis (H_{01}) and conclude that audit committee independence significantly enhances economic sustainability reporting in Nigerian oil and gas

firms. This indicates that independent audit committees play a meaningful governance role in promoting credible economic disclosures.

Hypothesis 2 (H₀₂): Audit Committee Independence (ACI) has no significant effect on the environmental sustainability reporting of listed oil and gas companies in Nigeria

The regression results indicate that ACI has an insignificant positive effect on environmental sustainability reporting (ENVR), with a coefficient of 3.888, t-statistic of 0.575, and p-value of 0.581. Since the p-value is greater than 0.05, we fail to reject the null hypothesis (H₀₂). This implies that audit committee independence does not have a statistically significant impact on environmental sustainability reporting in the sampled Nigerian oil and gas firms, suggesting that additional governance mechanisms may be needed to strengthen environmental disclosures.

Discussion of Findings

Audit Committee Independence and Economic Sustainability Reporting

The finding that audit committee independence significantly enhances economic sustainability reporting aligns with a priori expectations that independent monitoring mechanisms strengthen corporate accountability and long-term value creation. Agency theory provides a theoretical foundation, suggesting that independent audit committees reduce information asymmetry and constrain managerial opportunism, thereby promoting transparent reporting (Jensen & Meckling, 1976). Empirical evidence supports this outcome: studies such as Mohammed and Ibrahim (2024), Erin and Bello (2025), and Nwankwo, et al (2025) found that independent governance structures positively influence the quality of economic and financial-related disclosures in Nigerian oil and gas firms. Conversely, earlier work by Tonye and Boubai (2025) indicated that firm-specific factors could moderate governance effects on disclosure, suggesting that independence alone may not always yield uniform outcomes. The practical implication is that policymakers and regulators should reinforce corporate governance guidelines, emphasizing the independence and financial expertise of audit committees to sustain credible economic reporting. Firms should also implement complementary oversight mechanisms, such as external assurance or board training, to consolidate audit committee effectiveness, thereby ensuring that stakeholders receive reliable information on long-term economic sustainability and supporting investor confidence in the sector.

Audit Committee Independence and Environmental Sustainability Reporting

The result showing that audit committee independence does not significantly affect environmental sustainability reporting partially deviates from a priori expectations, which anticipated that independent oversight would enhance all forms of sustainability disclosure. Stakeholder theory provides a lens to interpret this outcome, highlighting that environmental reporting often responds not only to internal governance but also to external pressures from regulators, communities, and NGOs (Freeman, 1984). Supporting studies, including Nwankwo, et al (2025) and Tonye and Boubai (2025), similarly found weaker or insignificant links

between governance structures and environmental disclosure, indicating that independence alone may be insufficient to drive robust environmental reporting. In contrast, Ubiomoh and Okoye (2024) demonstrated that targeted governance mechanisms could improve critical environmental metrics, suggesting that expertise and resource allocation are necessary complements. Policy implications include the need for regulators to enforce specific environmental reporting standards and encourage capacity building for audit committees, ensuring they possess the technical knowledge to oversee environmental sustainability effectively. Firms should also integrate specialized environmental officers or sustainability committees to enhance reporting quality and meet stakeholder expectations for ecological accountability.

CONCLUSION

In conclusion, this study reveals that audit committee independence significantly improves economic sustainability reporting in listed Nigerian oil and gas firms, supporting agency theory's claim that independent monitoring enhances transparency and accountability. Conversely, its impact on environmental sustainability reporting is insignificant, indicating that structural independence alone may not suffice to ensure robust environmental disclosures, which are also shaped by stakeholder pressure, technical expertise, and regulatory enforcement. Overall, the findings suggest that while governance mechanisms effectively strengthen economic reporting, environmental reporting requires additional targeted interventions.

RECOMMENDATIONS

1. Firms continue to strengthen audit committee independence and ensure active oversight of economic sustainability practices, as this directly improves the credibility and quality of economic disclosures.
2. Regulators and firms should enhance environmental reporting through capacity building, specialized training, and the establishment of dedicated sustainability committees, ensuring that audit committees are equipped with the expertise to oversee environmental disclosures comprehensively and meet stakeholder expectations for ecological accountability.

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