

Sustainability Reporting and Operational Performance of Selected Environmentally Sensitive Firms in Nigeria

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ABSTRACT

This study investigated the impact of sustainability reporting on the operational performance of environmentally sensitive firms listed on the Nigerian Exchange Group (NGX). Employing an ex post facto research design, the study utilized secondary data derived from the annual and sustainability reports of eight firms between 2019 and 2024. Environmental, social, and governance (ESG) disclosure indices were developed via content analysis, utilizing a binary scoring methodology aligned with the Global Reporting Initiative (GRI) framework. Analytical procedures included descriptive statistics, correlation analysis, panel least squares regression, heteroskedasticity testing, and the Hausman specification test. The results indicate that while environmental and governance reporting have positive but statistically insignificant effects on operational performance, social reporting exerts a negative and statistically insignificant influence. Conversely, firm age exerted a significant negative impact on operational performance. The Hausman test supported the selection of the random effects model as the preferred estimator. The findings indicate that while sustainability reporting enhances transparency, accountability, and stakeholder confidence, its influence on the operational performance of environmentally sensitive firms in Nigeria remains limited. The study recommends that firms move beyond mere disclosure compliance, strengthen governance frameworks, and align social investment strategies with core operational objectives.

Keywords: Environment Reporting, Social Reporting, Governance Reporting, Operating Margin Ratio, GRI, Nigeria

INTRODUCTION

Sustainability reporting has emerged as a notable development that has gained traction in recent years. A multitude of firms currently generate annual sustainability reports, accompanied by a diverse range of ratings and standards employed in the evaluation process. Firms opt to produce a sustainability report for a multitude of reasons, yet the fundamental motivations appear to revolve around the principles of transparency and accountability (Umar, Mustapha & Yahaya, 2021).

Utile (2016) posited that the existence of any company is contingent upon its interaction with the environment. Engaging with the environment is a crucial strategy for survival, enabling both self-sufficiency and interdependence while fundamentally emphasizing sustainability. To attain optimal sustainability in business operations, organizations must mitigate adverse impacts, including emissions, waste, social challenges, and the inequitable treatment of employees. Many managers recognize that their organizations exist within a broader system that has significant direct and indirect effects on their operations. Aondoakaa (2015) suggests that for these firms to successfully and efficiently achieve their long-term goals, they must adequately adjust to their environments.

Umar et al. (2021) assert that sustainability reports are derived not only from gathered data but also serve as a mechanism to internalize and reinforce the firm's dedication to sustainable development, which may exhibit the values and governance model and demonstrate its strategy and its environmental and social impact. The GRI (2019) revealed that Nigerian companies are not excluded from integrating sustainability in their audited annual

reports, which is linked to the commitments of the global economy and global competitiveness. Elkington (2004), cited in Umar et al. (2021), explains that sustainability reporting is a form of value reporting in which organizations publicly communicate their economic, environmental, and social performances. However, these purposes do not consider the temporal dimension nor the interaction between the different dimensions of sustainability (Lozano, 2011). Similarly, Adams (2020) stated that sustainability reports should be included in the published financial statements of firms that inform stakeholders of their major financial performance. The Global Sustainability Standards Board (GSSB, 2016) advocated for the separate publication of non-financial reporting issues in sustainability reports and disclosures.

In Nigeria, the exploration activities by the oil and gas companies are responsible for environmental hazards and ecosystem damage, as noted in studies by Ayoola & Salawu (2011), Umoren, Akpan, & Okafor (2018), Uwakonye, Osho, & Anucha (2006), Uwuigbe & Jimoh (2012), and Herbert, Nwaorgu, Onyilo, & Iormbagah (2020), and are linked to pollution, emissions, environmental degradation, and the displacement of community villagers. Solomon (2020) observed that the company's operations are the primary cause of the environmental challenge that the world is currently confronting, which is climate change and global warming. Sheharyar (2024) revealed that the Global Reporting Initiative (GRI) has been recognized as the best practice for reporting the environmental and social impacts of firms. Sustainability reporting presents insights into a firm's positive or negative contributions to sustainable development. A KPMG (2020) survey carried out revealed that 90 percent of the 250 largest global companies now report their sustainability reports compared to just 12% in 1993. The survey indicated significant improvement in the sustainability reporting, and in no time, there will be a convergence of reporting standards for non-financial reporting.

The World Health Organization ranked four (4) Nigerian cities (Onitsha, Kaduna, Aba, and Umuahia) among the most polluted cities in the world. Unfortunately, the high-level business in these cities has not improved the living standards of the residents, nor has it been able to improve the state of infrastructure in these cities. It is clear that high-level companies conduct business directly or indirectly in these cities, and their products and services enter, leave, and pass through these cities. These companies have created enormous wealth, but the wealth created does not have enough money to purify these cities for future generations. Although the intent is not to belittle Nigerian companies, the message is that, like their financial reports, actions and activities affecting sustainability should receive primary attention to make sustainability reporting more desirable and relevant.

The Niger Delta oil-rich region has suffered from oil spillage, environmental degradation, and loss of biodiversity, which have exposed residents of the communities to environmental disasters (Grace, 2021; Common Dreams, 2023). Therefore, companies must report how their operations have positive and negative economic, social, and environmental impacts on the community in which they operate and how they intend to improve the positive aspects and eliminate or improve the negative aspects. The study identified some literature gaps in the overall review. From the gaps identified after the review of sustainability reporting and financial performance in Nigeria, prior studies such as Aondoakaa (2015), Ezeokafor & Amahalu (2019), Hebert et al. (2020), and Umar et al. (2021) showed that measurements of sustainability reporting were not appropriately in line with the GRI index, and the researcher identified a variable limitation gap. Their study did not look into the governance disclosure in the sustainability reporting indices. The researcher intends to fill this gap by using current data up to 2023, centered on the oil and gas sector.

Despite the growing body of literature on sustainability reporting and firm performance in Nigeria and other emerging markets (Aondoakaa, 2015; Ezeokafor and Amahalu, 2019; Herbert et al., 2020; Umae et al., 2021; Lucy, Ime, and Agnes, 2023), there are still certain gaps. First, most of the previous research either had a limited scope of sustainability reporting, often omitting governance reporting and focusing on only the economic, environmental, and social facets, and restricted the complete use of the GRI index. Second, the literature that remains published has a strong focus on the financial performance indicators of return on assets, return on equity, and market value (Ofoegbu and Asogwa, 2020; Yazid et al., 2021; Korolo and Korolo, 2023) and has minimal consideration of the performance indicators of operations, including the operating margin ratio, that is more effective in measuring efficiency in core operations. This study aims to address these gaps and use a full GRI-based index, including the governance reporting, focusing on the performance in operations based on the

operating margin ratio, utilizing the latest data of the years 2019-2024 of environmentally sensitive firms in Nigeria.

LITERATURE REVIEW

Concept of Sustainability Reporting

Sustainability reporting is the structured and transparent process of summarising, analysing, and communicating an organisation's economic, environmental, social, and governance performance. A sustainability report allows an organisation to assess the impact of its activities and its dedication to a sustainable global economy within a comprehensive corporate framework. This entails addressing the current requirements of the environment and society without jeopardising the capacity of future generations to fulfil their own needs. Nwaiwu (2020) defines sustainability reporting as a collection of socially conditioned practices that significantly affect business operations and societal interactions, as well as the ways in which companies convey these activities to their stakeholders.

Environmental Reporting

The environmental dimension of sustainability refers to the organisation's impact on biological and non-biological natural systems, which includes ecosystems, land, air, and water. Environmental indicators cover input performance (such as materials, energy, and water) and output performance (such as emissions, effluent, and waste). They also cover performance related to biodiversity, environmental compliance, and other related information (such as environmental expenditure and the impact of products and services). Social performance indicators focus on the impact of organisations on the local communities in which they operate and how they manage and mediate risks that may arise from interactions with other social institutions.

Ohidoa, Omokhudu, and Oserogho (2016), as cited in Etale et al. (2021), assert that companies, particularly those with operations affecting the environment, ought to disclose their financial commitments to environmental improvement, particularly in relation to pollution and other hazards. Aondoakaa (2015) argued that the overall operation of a business can harm society, thereby undermining the social harmony essential for a stable operational environment. Consequently, such business activities lack economic and social sustainability. He emphasised that if companies responsible for environmental harm hinder the ability to sustain human life at an improved standard, this situation is inherently unsustainable, both socially and economically, as economic activity cannot exist under such conditions. Herbert et al. (2020) stressed that the serious health hazards normally associated with oil and gas exploration activities and the environmental, economic, and social makeup of indigenous communities in oil-producing areas are also negatively affected.

Social Reporting

Social reporting reveals the activities that are associated with social and ecological factors, which provide an insight into the fulfilment of the firm's social responsibilities to the stakeholders. The work of Najah & Jarboui (2013) suggested that the firm's social reporting should comprehensively outline the societal and environmental influences on its business operations. Social reporting has become a strategic focus for companies to ensure that their daily business operations positively impact the environment. The societal impact could raise stakeholders' expectations for what firms give to the community, which could be basic healthcare, a conducive learning environment, donations, infrastructure, and lots more. Social reporting arises from the obligation firms have to their stakeholders, which extends beyond just their shareholders.

Governance Reporting

Governance reporting is a systematic approach by a firm that outlines the processes, policies, and practices on which the business operation is based and for which it is accountable to stakeholders. It goes beyond the usual financial reporting, but it reveals how firms comply with the ethical standards of transparency, accountability, and strict regulatory compliance (Solomon, 2020). The governance reporting is embedded with the principles of corporate governance, like the composition of the board, the rights of shareholders, executive compensation, and

internal control mechanisms, which assist in keeping the stakeholders informed on the decisions being carried out.

Operational Performance

Operational performance refers to how efficiently a company conducts its core business activities to generate value, sustain growth, and remain competitive. In the oil and gas sector, operational performance is particularly critical because of the high capital intensity, environmental costs, and regulatory scrutiny involved.

The operating margin ratio can be defined as the operating income of a firm relative to its total revenue. It evaluates the firm's profit generated from its business operations preceding the interest consideration and taxes. It also signifies the proficiency of the firm in handling the production and administrative costs in relation to sales (Gitman & Zutter, 2015). According to Brigham and Ehrhardt (2017), primary operations are the transformation of sales into profit, which indicates operational efficiency. This ratio illustrates the efficiency with which oil and gas enterprises handle exploration, refining, distribution, and environmental compliance expenses while maintaining profitability.

Empirical Review

The study collated data from 2018 to 2023; Nkak, Enoima, Yetunde, and Ibem (2025) examined the connection between green accounting practices and the market value of seven (7) Nigerian oil and gas companies. The gathered data was analysed by the Stata 19 program using panel data regression. The study's findings, green accounting, and the market value of Nigerian oil and gas companies that are listed have a favourable but statistically insignificant relationship. The data's descriptive analysis also revealed that, although all companies submitted the mandatory social and governance reports, not all of them included pertinent environmental information in their reports and statements that were made public.

Li et al. (2024) applied content analysis and gave a comprehensive and systematic review of the literature. Based on the systematic approach, a sample of 165 studies was retrieved from Web of Science and assessed using an econometric model. Meanwhile, this study found that a new research field was the impact of ESG disclosure on the work of the analysts, audit fees, and earnings management. Finally, this study innovates new findings that institutional pressures may have an impact on the consequences of ESG disclosure.

Kapil and Shilpa (2024) examine the influence of aggregate and individual Environmental, Social, and Governance (ESG) disclosure scores on the performance of 95 financial and non-financial firms from 2020 to 2023. Utilizing panel data regression analysis, the study evaluates the relationship between ESG metrics and firm performance. The findings indicate that the overall ESG score, as well as the Environmental (ENV) and Social (SOC) disclosure scores, independently exert an insignificant impact on Return on Assets (ROA). Furthermore, the analysis reveals that the governance disclosure score has a negative, albeit statistically insignificant, effect on operational performance as measured by ROA. Conversely, regarding Return on Equity (ROE), the results demonstrate that individual Social (SOC) disclosure scores have a statistically significant positive effect on financial performance. In contrast, the individual environmental (ENV) and governance disclosure scores do not exert a significant negative impact on return on equity (ROE). Furthermore, the analysis indicates that the overall environmental, social, and governance (ESG) disclosure score has an insignificant positive effect on ROE. Regarding market-based performance, as measured by Tobin's Q, the individual ENV disclosure score demonstrates a significant positive impact. Conversely, the individual social (SOC) and governance disclosure scores yield an insignificant positive effect on Tobin's Q, while the overall ESG disclosure score reflects a significant positive impact on this metric. Finally, return on assets (ROA), ROE, and Tobin's Q collectively demonstrate that firm size has a significant impact on overall firm performance.

An ex-post facto research approach was used in Akinleye and Owoniya's (2024) study to investigate the connection between sustainability reporting and financial performance for 153 publicly traded firms on the Nigerian Exchange Group (NGX) over the 2012–2021 period. Regression analysis was used in the study to find a statistically significant positive relationship between company performance and sustainability reporting.

Sunny and Apsara (2024) investigate sustainability reporting and financial performance in Bangladesh's 270 firms; the study employs pooled OLS regression. The findings reveal that economic and environmental sustainability reporting have significant positive relationships with both financial performance measures, while social sustainability reporting shows no significant impact. Environmental reporting emerges as the strongest predictor of financial performance, suggesting that environmental initiatives create value through multiple channels, including operational efficiency and market recognition.

Korolo & Korolo (2023) assessed the financial performance of Nigerian deposit money banks on sustainability reporting between 2013 and 2022. The study adopted the panel least squares regression approach, which reported that environmental sustainability has a positive, negligible influence on performance, whereas reporting on economic sustainability has a negative effect. Reports on social sustainability, however, were shown to be statistically significant and detrimental. Based on the results, they suggest that enabling laws be established to require improved sustainability practices from all Nigerian deposit money banks.

Lucy, Ime, and Agnes (2023) use an ex post facto design with data collected from 2012 to 2021 to investigate the impact of sustainability reporting on the financial performance of listed oil and gas companies in Nigeria. The robust panel least squares regression was used to evaluate the data. According to the study, the return on capital utilized was significantly enhanced by social, health, safety, and environmental disclosures. The study recommended that the oil and gas business should establish a standardized sustainability index as a baseline to track compliance.

Shaban and Barakat (2023) examined the sustainability reporting and financial performance of 13 Jordanian commercial banks listed on the Amman Stock Exchange from 2012 to 2021. Multiple regression analysis was used, and the study found that sustainability reporting had a positive relationship with both LEV and ROA variables, but there is no statistically significant correlation between sustainability reporting (SR) and return on equity (ROE).

Using panel regression analysis, Tomomewo, Rojumbokan, Adegbe, and Ajibade (2022) examine the effects of sustainability disclosures on the financial performance of 11 listed DMBs over ten years (2009-2018). It was found that Nigerian deposit money banks' dividend per share and profit before taxes were positively and significantly impacted by LNSIZE, and that DMBs in Nigeria did not view sustainability reporting as a crucial part of annual financial statements. They believed that governance reporting was found to have a discernible impact on DMBs' financial success, as shown by dividends per share.

In 2021, Umar, Mustapha, and Yahaya studied twenty-six (26) consumer companies for a period of ten years (10), utilising the multiple regression technique and the diagnostic checks and post-estimation test. The results show that social and environmental reporting has a significant positive effect on financial performance. The researchers recommend that management of firms should voluntarily report their social and environmental performances.

The impact of sustainability reporting on the financial performance of publicly traded Nigerian oil and gas companies is examined by Yazid, Ahmed, Samuel, Nasiru, and Umar (2021). The results of the regression showed that while environmental sustainability has a significant and positive impact on ROA, economic and social sustainability have a positive but insignificant influence. Therefore, this study suggests, among other things, that the listed Nigerian oil and gas companies should focus more on disclosing their sustainability initiatives since it can enhance their financial results.

In 2021, Atanda, Osemene, and Ogundana focused on deposit money banks that spanned from 2014 to 2018 and utilised the ordinary least squares fixed effects. From the statistical output, it was found that sustainability reporting indexes do not influence the firm value of DMBs in Nigeria.

Mohammad, Alaa, Ayman, and Mohammad (2020) assessed the business performance and sustainability reporting of 1,705 Jordanian companies that were registered on the Amman Stock Exchange. using robust standard errors in fixed-effect regression. The findings indicate positive social and governance disclosures relate

to financial success but not to environmental disclosures. Interestingly, there is a strong and positive correlation between sustainability disclosures when they are examined as a whole.

Ofoegbu and Asogwa (2020) focused on gathering data from fifteen (15) consumer goods companies covering 2009 to 2018 in Nigeria, utilising SPSS. The statistical output revealed that economic and social reporting has a positive and insignificant effect on both earnings and return on equity.

Using a content analysis technique, Herbert, Nwaorgu, Onyilo, and Iormbagah (2020) investigated the sustainability reporting and performance of Nigerian listed upstream oil and gas companies during 2018. The information was taken from the oil and gas companies' annual reports. The quantitative methods were used to regress the data obtained. Their research showed that oil and gas companies fail to disclose their sustainability economic performance, particularly the financial consequences and other climate-related risks.

METHODOLOGY

The study adopted the ex-post facto research design. The study used secondary data from the sampled companies covering a period of 6 years (2019 to 2023). The top eight environmentally sensitive firms are Seplat Energy, Oando Plc, Ardova Plc, Conoil, Dangote Cement, BUA Cement Plc, Lafarge Africa, and Chemical and Allied Products Plc. The content analysis of annual and sustainability reports was extracted on environmental, social, and governance issues. The binary scoring approach was adopted, whereby a score of one (1) was assigned when a disclosure item was reported in the financial statement and zero (0) otherwise. The aggregate score for each dimension was converted into a disclosure index.

Measurement of Variables

ESG Disclosure Scores (Researcher Content Analysis). Using the same 10-point disclosure index

Environmental Reporting (ENVR)

- Emissions reporting
- Environmental management
- Gas-flaring reduction
- Climate initiatives
- Energy efficiency
- Biodiversity
- Waste management
- Spill prevention
- Environmental compliance
- Sustainability targets

Social Reporting (SOCR)

- Employee welfare
- Occupational safety
- Community development
- Local content initiatives
- Training and development
- Human rights
- Stakeholder engagement
- Diversity
- Education programmes
- Social investments

Governance Reporting (GOVR)

- Board independence
- Audit committee
- Risk management
- Ethics policy
- Anti-corruption measures
- Whistleblowing framework
- Sustainability governance
- Shareholder protection
- Internal controls
- Governance compliance

The **operational margin ratio** is subject to the proxying of operational performance. These dependent variables show the adjustment existing in financial value because of sustainability reporting, and the measures employed in the empirical review were the financial performance measures.

Mathematically, the ratio is expressed as:

$$\text{Operating Margin Ratio} = \frac{\text{Operating Income}}{\text{Revenue}} \times 100$$

The moderating variable, which is the firm age, was measured by the number of years a firm has been listed.

Model Specification

In order to test the relevance of the hypotheses regarding the impact of sustainability reporting on the operational performance of oil and gas companies listed in Nigeria.

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + E \dots \dots \dots (1)$$

$$OPMR = f(\text{ENVRit} + \text{SOCRit} + \text{GOVRit} + \text{FIRA}) \dots \dots \dots (2)$$

Where Y is the dependent variable which describes operational performance indicators such as;

OPMR = Operational Margin Ratio

ENVRit = Environmental reporting

SOCRit = Social reporting

GOVRit = Governance reporting

FIRA = Firm Age

E is the error term capturing other explanatory variables not explicitly included in the model.

RESULT AND ANALYSIS

Table 1: Descriptive Statistics

	OPMR	ENVR	SOCR	GOVR	FIRA
Mean	0.161483	8.312500	8.458333	9.041667	45.87500

Median	0.096400	8.000000	8.000000	9.000000	59.50000
Maximum	0.447100	10.00000	10.00000	10.00000	68.00000
Minimum	-0.157000	6.000000	7.000000	8.000000	10.00000
Std. Dev.	0.166626	1.205594	0.988408	0.797825	22.14423
Skewness	0.367354	-0.104397	0.183550	-0.073801	-0.611864
Kurtosis	1.754818	2.048432	2.023857	1.607785	1.572961
Jarque-Bera	4.180548	1.898154	2.175234	3.920095	7.067900
Probability	0.123653	0.387098	0.337019	0.140852	0.029189
Sum	7.751200	399.0000	406.0000	434.0000	2202.000
Sum Sq. Dev.	1.304924	68.31250	45.91667	29.91667	23047.25
Observations	48	48	48	48	48

Source: Eview

Descriptive statistics indicate that the sampled environmentally sensitive firms achieved a mean operating margin ratio (OPMR) of approximately 0.161, representing an average operating profit of 16.1% relative to revenue during the study period.

The disparity between the minimum and maximum OPMR values reflects significant variance in operational performance across the sample.

Regarding sustainability reporting, the firms demonstrated high average disclosure scores. Social reporting attained the highest mean score, followed by governance and environmental reporting, suggesting a prioritization of social and governance disclosures over environmental metrics.

Furthermore, the low standard deviations suggest that disclosure practices remained relatively consistent among the firms throughout the observed period.

Jarque-Bera statistics indicate that most variables follow a normal distribution, as their respective probability values exceed the 5% significance threshold. Firm age (FIRA) is a notable exception, recording a probability value of 0.029, which signifies a minor deviation from normality.

Table 2 Correlation Analysis

Covariance Analysis: Ordinary					
Date: 05/21/26 Time: 13:32					
Sample: 2019 2024					
Included observations: 48					
Correlation					
Probability	OPMR	ENV	SOC	GOV	FRA
OPMR	1.000000				

ENV	0.440664	1.000000				
	0.0017	-----				
SOC	0.322061	0.894992	1.000000			
	0.0256	0.0000	-----			
GOV	0.396589	0.893112	0.865641	1.000000		
	0.0053	0.0000	0.0000	-----		
FRA	-0.741318	-0.218469	-0.107173	-0.179139	1.000000	
	0.0000	0.1358	0.4684	0.2231	-----	

Source: Eview

The correlation analysis demonstrates a positive relationship between operational performance and environmental reporting ($r = 0.4407$, $p < 0.05$), governance reporting ($r = 0.3966$, $p < 0.05$), and social reporting ($r = 0.3221$, $p < 0.05$).

These findings suggest that organizations with higher sustainability disclosure scores generally achieve superior operating margins, although it is important to note that correlation does not establish causation. Firm age displays a significant negative correlation with operational performance ($r = -0.7413$, $p < 0.01$), indicating that older firms within the sample tend to report lower operating margins compared to their younger counterparts.

Furthermore, the correlation matrix confirms strong interdependencies among environmental, social, and governance reporting metrics.

Table 3: Regression Results

Dependent Variable: OPMR				
Method: Panel Least Squares				
Date: 05/21/26 Time: 13:21				
Sample: 2019 2024				
Periods included: 6				
Cross-sections included: 8				
Total panel (balanced) observations: 48				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.007510	0.213320	0.035207	0.9721
ENV	0.040592	0.034573	1.174110	0.2468
SOC	-0.016782	0.037735	-0.444746	0.6587
GOV	0.020983	0.045424	0.461934	0.6465
FRA	-0.005040	0.000727	-6.931358	0.0000
R-squared	0.633759	Mean dependent var		0.161483
Adjusted R-squared	0.599690	S.D. dependent var		0.166626
S.E. of regression	0.105425	Akaike info criterion		-1.563309
Sum squared resid	0.477917	Schwarz criterion		-1.368392

Log likelihood	42.51942	Hannan-Quinn criterion.	-1.489650
F-statistic	18.60225	Durbin-Watson stat	1.648207
Prob(F-statistic)	0.000000		

Source: Eview

A regression analysis was conducted to evaluate the impact of environmental reporting (ENVR), social reporting (SOCR), governance reporting (GOVR), and firm age (FIRA) on the operational performance (OPMR) of environmentally sensitive firms listed on the Nigerian Exchange Group from 2019 to 2024. The model yielded an R-squared value of 0.6338, suggesting that 63.38% of the variance in operational performance is collectively explained by the independent variables. The adjusted R-squared of 0.5997 confirms the strong predictive capacity of the model. Furthermore, the F-statistic of 18.6023 ($p < 0.0000$) indicates that the model is statistically significant and robust for analytical purposes.

Environmental Reporting

Regarding Environmental Reporting (ENVR), the analysis recorded a coefficient of 0.040592 with a probability value of 0.2468. The positive coefficient suggests that increased environmental disclosure correlates with improved operational performance; specifically, a one-unit increase in environmental reporting is associated with an approximate 4.06% rise in the operating margin ratio. However, as the p-value exceeds the 5% significance threshold, this relationship is not statistically significant. Consequently, environmental reporting does not exert a significant impact on the operational performance of the firms sampled.

Social Reporting (SOCR)

Social reporting yielded a coefficient of -0.016782 with a p-value of 0.6587, indicating that increased social disclosure is associated with a marginal decline in operational performance. These findings suggest that expenditures related to employee welfare, community development, health and safety initiatives, and stakeholder engagement may elevate operating costs without yielding immediate, measurable operational benefits. Nevertheless, the effect is statistically insignificant and cannot be regarded as a meaningful determinant of operational performance.

Governance Reporting (GOVR)

Governance reporting recorded a positive coefficient of 0.020983 and a probability value of 0.6465. This indicates that improved governance disclosure may enhance operational performance through stronger accountability mechanisms, better risk management structures, enhanced board oversight, and improved internal controls. However, the probability value exceeds the conventional significance level, indicating that governance reporting does not significantly influence operational performance during the study period.

Firm Age (FIRA)

Firm age produced a coefficient of -0.005040 with a probability value of 0.0000. This indicates a statistically significant negative relationship between firm age and operational performance. Specifically, each additional year in firm age reduces the operating margin ratio by approximately 0.50%. The finding implies that older firms may experience declining operational efficiency arising from bureaucratic structures, organisational rigidity, ageing infrastructure, and slower adaptation to technological and sustainability innovations.

Table 4: Hausman Test

Correlated Random Effects - Hausman Test	
Equation: Untitled	

Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.656691	4	0.4545

Source: Eview

The Hausman specification test was conducted to determine the most appropriate panel estimator between the Fixed Effects Model and the Random Effects Model. The test produced a Chi-square statistic of 3.6567 and a probability value of 0.4545. Since the probability value is greater than 0.05, the null hypothesis cannot be rejected. Consequently, the Random Effects Model is preferred because the unobserved firm-specific effects are not significantly correlated with the explanatory variables. Therefore, the Random Effects estimator provides more efficient and consistent estimates for the study.

DISCUSSION OF FINDINGS

Environmental Reporting and Operational Performance

The study found that environmental reporting exerts a positive but statistically insignificant influence on operational performance. This finding suggests that environmental disclosure practices such as pollution control initiatives, environmental compliance reporting, waste management programs, and climate-related disclosures may contribute to improved stakeholder perception and corporate legitimacy. However, these benefits do not appear sufficiently strong to translate into measurable improvements in operating margins during the study period.

This finding is consistent with Nkak, Enoima, Yetunde, and Ibem (2025), who reported that green accounting practices positively influenced the value of quoted oil and gas firms in Nigeria but that some environmental accounting indicators lacked statistical significance. It also supports Korolo and Korolo (2023), who documented that sustainability disclosures generated only marginal improvements in firm performance among Nigerian deposit money banks.

However, the finding contradicts Sunny and Apsara (2024), who found a significant positive relationship between sustainability reporting and financial performance in emerging economies. The disparity may be attributable to differences in institutional environments, regulatory enforcement, stakeholder pressure, and sustainability reporting maturity across countries.

Social Reporting and Operational Performance

The study reveals that social reporting has a negative and statistically insignificant effect on operational performance. This implies that disclosures relating to employee welfare, occupational health and safety, community development, education programmes, and stakeholder engagement may increase operational expenditures without producing immediate financial benefits. Consequently, firms may experience short-term cost pressures associated with implementing social sustainability initiatives.

The finding agrees with Korolo and Korolo (2023), who reported that some dimensions of sustainability reporting exerted negative effects on firm performance. The result also aligns with the argument that social investments often generate long-term reputational and relational benefits rather than immediate operational gains.

Conversely, the finding disagrees with Lucy, Ime, and Agnes (2023), who found that sustainability reporting significantly enhanced financial performance among Nigerian firms. It also contrasts with Shaban and Barakat (2023), who reported that sustainability disclosures positively influence corporate financial outcomes in emerging markets. These differences may stem from variations in measurement approaches, industrial sectors, and performance indicators adopted across studies.

Governance Reporting and Operational Performance

Governance reporting was found to have a positive but statistically insignificant effect on operational performance. This suggests that governance mechanisms such as board independence, risk management frameworks, audit committee effectiveness, internal control systems, and ethical compliance structures may contribute positively to operational outcomes, but the magnitude of the effect remains insufficient to achieve statistical significance.

The finding is broadly consistent with Tomomewo, Rojumbokan, Adegbe, and Ajibade (2022), who found that sustainability reporting practices exhibited limited influence on the financial performance of Nigerian firms. It also aligns with Li, Saat, Khatib, Chu, and Sulimany (2024), whose systematic review observed that ESG disclosures often produce mixed performance outcomes depending on contextual and institutional factors.

Firm Age and Operational Performance

The study found that firm age significantly and negatively influences operational performance. This indicates that older firms tend to record lower operating margins than younger firms. The result may reflect organisational rigidity, bureaucratic decision-making processes, higher maintenance costs, and slower adaptation to technological innovations and sustainability-related business practices.

The finding supports organisational lifecycle theory, which posits that mature firms often experience declining efficiency unless continuous innovation and strategic renewal are pursued.

CONCLUSION AND RECOMMENDATION

This study investigated the impact of Sustainability Reporting on the Operational Performance of Environmentally Sensitive Companies on the Nigerian Exchange Group from 2019 to 2024. In particular, the study aimed to analyze the effect of environmental report, social report, governance report, and firm age on the operating margin ratio.

The results have shown that environmental reporting and governance reporting are positive factors in the operational performance, and social reporting is negative. But none of the three aspects of sustainability reporting is statistically significant. In contrast, the operational performance of the firms shows a statistically significant negative correlation with the firms' age. Based on the study results, it is clear that sustainability reporting is significantly helping to increase corporate transparency, accountability, and engagement of stakeholders, but its contribution in the area of operational performances of environmentally sensitive companies in Nigeria is still limited. Hence, the effects of the operational efficiency seem to be more driven by the management and structural factors in the firms, rather than by the sustainability disclosure practices alone. Based on the findings, the study recommends that environmentally sensitive companies should boost their implementation of environmental sustainability initiatives, which could provide measurable operational benefits. In relation to social sustainability, management should ensure that investments in social sustainability are strategically aligned with the operational goals, in order to turn social expenditure into value-creating activities that increase productivity and operational efficiency.

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