

**EFFECT OF SUSTAINABILITY REPORTING ON FIRM VALUE OF
LISTED OIL AND GAS FIRMS IN NIGERIA: MODERATED
BY BOARD FINANCIAL EXPERTISE**

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Abstract

This study examined the effect of sustainability reporting on firm value among listed oil and gas firms in Nigeria moderated by board financial expertise. The study was anchored on the triple bottom line theory, stakeholder theory, and legitimacy theory. The study adopted a positivist research philosophy along with correlational research design using panel data from listed oil and gas firms on the Nigerian Exchange Group over the period 2011-2025. The population and sample size of the study consist of 7 of listed oil and gas firms in Nigeria, based on census sampling. Data were sourced from annual reports and sustainability disclosures. The findings revealed that economic disclosure has a positive but statistically insignificant effect on firm value. Environmental disclosure and social disclosure exert significant negative effects on firm value. Board financial expertise has a significant positive effect on firm value. Furthermore, board financial expertise significantly moderates the relationship between economic disclosure and firm value by decreasing the positive effect, and significantly strengthens the negative relationship between environmental disclosure and firm value. However, its moderating effect on the relationship between social disclosure and firm value is negative but statistically insignificant. The study concludes that sustainability disclosure does not uniformly enhance firm value among listed oil and gas firms in Nigeria, while board financial expertise directly improves firm value but exerts varying moderating effects across sustainability disclosure dimensions. It recommends improved ESG reporting quality, stronger regulatory enforcement, and better alignment between board expertise and sustainability objectives to enhance firm value creation.

Keywords: sustainability reporting, firm value, board financial expertise, listed oil and gas firms, Nigeria

1. Introduction

One of the major objectives of a firm among the corporate finance theorists is to maximize the shareholders' value. Firm value is an economic concept that reflects the value of a business. It is the value that a business is worthy of at a particular date. Like an asset, the value of a firm can be determined on the basis of either book value or market value (Bahraini et al., 2021).

A company's market value is a good indication of investors' perceptions of its business prospect (Azimovna, 2022). The value of a firm is a significant in the analysis of the business financial health, or ownership. This is because the higher the value of the firm, the better is the firm's financial position and the better is the prospect for prospective investors. The value of a firm shows stakeholders perception on the level



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of success of a company in managing their resources as a form of stakeholder's trust toward the company (Nguyen et al., 2024).

Previous research has looked at the impact of sustainability factors on business value (Asghar & Aamer, 2024; Huynh et al., 2025; Abdi et al., 2024; Nguyen, 2025). Sustainability reporting has grown in importance as a tool for businesses and organisations to address the rising need for transparency from customers, investors, other stakeholders, and society at large (Jadoon et al., 2021). Sustainability reports are optional reports that give information on a company's economic, environmental, and social implications. This allows businesses to close information gaps and create transparency about their sustainability performance, both good and negative (Hanaysha et al., 2022).

As a consequence of increased awareness about global environmental concerns and the resulting obligation to maintain the ecosystem, sustainability reporting has become more relevant for both developed and developing nations, stimulating interest in the literature (Ng & Rezaee, 2024). As a result, a growing number of researchers are looking into how new sustainability approaches in corporate reporting affect firm value (Abdi, et al., 2024; Ammer et al., 2020; Gerged et al., 2023; Kheireddine et al., 2023; Li et al., 2020; Suprabha & Prasad, 2023).

Firms that comply with social commitment, responsibility, and sustainability have stronger governance, care more about the environment and sustainable development, have less profits volatility, and have access to lower-cost capital (Ong & Djajadikerta, 2020). By the year 2030, the United Nations advises that businesses publicly report their social commitment, responsibility, and sustainability practises (SSE, 2024). Governments must actively promote the adoption of social commitment, responsibility, and sustainability by providing multiple tax incentives for businesses to participate in ESG disclosures that benefit their value chain as well as their shareholders (Jallai, 2024).

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In terms of revenue creation, the oil and gas business is one of the most significant in the world. Oil has swiftly supplanted agriculture as a key source of wealth since its first commercial discovery in Nigeria River State in 1956. Oil wealth is so important to Nigeria's economy that it accounts for 90% of foreign exchange profits and 85% of overall government revenue (Onoh et al., 2024). Crude oil will remain important in Nigeria until supplies are exhausted, which is expected to occur in the next twenty to thirty years, according to current forecasts (NNPC, 1982).

In the normal range, the company's ultimate goal is to make more money and raise the value of the company to its shareholders. The corporate sector often violates business rules, degrades the environment and ecosystem, and jeopardizes employee safety while achieving these goals (Skouloudis et al., 2023). As a result, investors, customers, suppliers, governments, and workers face difficulties.

All of these parties want the management of the company to go further and take responsibility to be more ethical and socially responsible (Guo et al., 2024). Companies



are increasingly under intensity for the negative impact of their business operations on society, employees and the environment, putting these stakeholders at risk. Personnel exploitation and accounting fraud lead to mismanagement, which severely affects the company's solvency, depreciation, public image and trust (Macailao, 2024).

Oil spills, damaged soil, unintended sand fires, and other real, water-polluting accidents have been documented in a variety of events and locations with numerous high-profile corporate environmental, health and security failures that have killed many lives in a variety of developing regions overseas, particularly Nigeria, which has triggered strong protest around the world. Nigeria in particular, is one of the most environmentally polluting foreign locations in the world, ranking seventh among the USA in terms of gas combustion and tenth most polluting to the USA in general (Nnaemeka, 2024; Global Bank, 2025). Many of these environmental issues are the result of corporate actions and operations, which are ostensibly designed to meet the financial demands of their shareholders and traders. In general, this is associated with the grease and gas companies operating near the Niger Delta, so it is expected that the companies operating under their supervision will be environmentally conscious.

Firms have been forced to be socially and environmentally responsible as a result of these requirements (Emmanuel & Ifeanyichukwu, 2024; Nweze & Nwadiolor, 2024). Moreover, sustainability reporting, by indicating a social and environmental commitment to stakeholders, can help companies achieve a better competitive position in the market (Abiodun et al., 2021; Fabian et al., 2022; Igbinovia & Agbadua, 2023) and even create value for the firms and competitive Advantages (Jeroh, 2020; Olagunju & Ajiboye, 2022; Subair et al., 2024). According to a limited number of current studies, this improves the company's performance (Bakry et al., 2023; Husnaini & Basuki, 2020; Yondrichs et al., 2021) and its value (Aksan & Gantjowati, 2020; Friske et al., 2023; Iswati, 2020; Pamungkas & Meini, 2023).

Many Nigerian scholars have investigated the impact of sustainability reporting on financial performance. For example, Ighosewe et al. (2032) examined sustainability reporting among Nigerian food and beverage companies. The breadth of Lafarge Africa Plc's sustainability reporting was investigated by (Nzekwe et al., 2023). The impact of sustainable accounting on the financial performance of listed industrial enterprises in Nigeria was investigated by Alhassan et al. (2021). Iyoha (2023) evaluated the link between sustainable development practices and corporate financial performance of publicly traded firms in Nigeria's agriculture, basic materials, consumer products, consumer services, financial services, health care, information and communication technology, industrials, and oil and gas sectors.

Alabo and Anyasor (2021) investigated the impact of sustainability reporting on the financial performance of a group of publicly traded Nigerian brewing companies. The study did not consider looking at how sustainable financial reporting influences the firm value of oil and gas using Tobin's Q as measurement of firm value. Likewise, very little research has focused only on the oil and gas industry.

Studies in respect of sustainability reporting and firm value in Nigeria are very scanty, and none of them was conducted to capture oil and gas firms in Nigeria. As a result, in order to address this void in the literature, this research employed Tobin's Q as it measures the firm's market value in terms of the value of its assets. The main objective of the study is to examine the effect of sustainability reporting on firm value of listed oil and gas firms in Nigeria. While the specific objectives are to:

- i. Examine the impact of economic sustainability disclosures on firm value of listed oil and gas firms in Nigeria.



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- ii. Assesses the impact of environmental sustainability disclosures on firm value of listed oil and gas firms in Nigeria.
- iii. Examine the impact of social sustainability disclosures on firm value of listed oil and gas firms in Nigeria.
- iv. Examine the impact of board financial expertise on firm value of listed oil and gas firms in Nigeria.
- v. Investigate the moderating effect of board financial expertise and environmental sustainability disclosures and firm value of listed oil and gas firms in Nigeria.
- vi. Evaluate the moderating effect of board financial expertise and economic sustainability disclosures and firm value of listed oil and gas firms in Nigeria.
- vii. Investigate the moderating effect of board financial expertise and social sustainability disclosures and firm value of listed oil and gas firms in Nigeria.

2. Literature Review

Review of Empirical Studies

The purpose of this section is to review empirical studies carried out by other researchers, in this section, relevant literature concerning the effect of sustainability reporting and its various factors on financial performance were reviewed.

Economic Disclosure and Firm Value

Adegbie et al. (2024) examined the relationship between economic sustainability disclosure and firm value among non-financial companies listed on the Nigerian Exchange Group (NGX). The population comprised all 109 non-financial firms listed on the NGX as at 2023, from which 62 firms were selected using purposive sampling based on availability of sustainability reports between 2016 and 2022. Data were extracted from annual reports and standalone sustainability reports using content analysis to construct an Economic Disclosure Index (EDI). Panel regression (fixed and random effects) was adopted for analysis. The empirical findings reveal that economic disclosure has a positive and statistically significant effect on Tobin's Q, suggesting that investors attach value relevance to transparent economic reporting. However, the study found no significant effect on accounting-based performance (ROA).

Hassan et al. (2024) investigated the impact of economic disclosure within integrated reporting on firm value among listed firms in Bangladesh. The population included 175 firms listed on the Dhaka Stock Exchange, and 80 firms were selected using stratified sampling covering the period 2015-2023. The study employed panel data regression with robust standard errors. The findings indicate that economic disclosure has a significant positive effect on market-based firm value, especially in firms with strong corporate governance mechanisms. However, the study observed a weak association with ROA.

Environmental Disclosure and Firm Value

Using Tobin's Q and Return on Assets (ROA), Chen et al. (2024) examined the relationship between environmental information disclosure and firm value among Chinese A-share listed firms. The study utilized a sample of 1,120 firms between 2016 and 2022, employing fixed-effects panel regression analysis. The results indicate that environmental disclosure significantly improves Tobin's Q and has a positive but weaker effect on ROA. Furthermore, the effect was stronger in heavily polluting industries, suggesting that disclosure plays a greater reputational role in environmentally



sensitive sectors. The study concluded that stronger environmental transparency enhances investor confidence and long-term valuation.

Using Tobin's Q as a proxy for market-based firm value, Alareeni and Hamdan (2023) investigated the impact of environmental disclosure on firm valuation among Gulf Cooperation Council (GCC) listed companies. The research included 310 firm-year observations from 2018 to 2022 and applied generalized least squares (GLS) regression analysis. The findings show that environmental disclosure has a positive and statistically significant impact on Tobin's Q. However, the study noted that the strength of the relationship varies across countries due to differences in regulatory enforcement and sustainability awareness levels.

Using both ROA and Tobin's Q, Odoemelam and Okafor (2025) examined the effect of environmental disclosure on firm value among non-financial firms listed on the Nigerian Exchange Group. The study adopted an ex-post facto research design and covered 75 firms over the period 2017-2023. Panel data regression analysis revealed that environmental disclosure has a significant positive effect on Tobin's Q but an insignificant effect on ROA. The study concluded that environmental transparency enhances market valuation more than accounting profitability and recommended stronger compliance monitoring by regulatory authorities.

Social Disclosure and Firm Value

Hassan and Al-Zahrani (2026) studied 102 Saudi Arabian non-financial firms listed on the Tadawul (Saudi Stock Exchange) from 2018-2025 to examine the social disclosure - firm value relationship. Regression analysis revealed a positive and significant effect of social disclosure on Tobin's Q, but an insignificant effect on ROA and EBITDA. Their findings are interpreted via Stakeholder Theory, which suggests socially transparent firms reduce risk perceptions and enhance valuation. They recommended adopting standardized social disclosure frameworks to ensure comparability.

Lee and Kim (2025) examined the bi-directional relationship between social disclosure and firm value among 450 South Korean firms listed on the Korea Exchange (KRX) from 2016-2023. Using panel vector error correction models (VECM), findings show a long-run positive relationship where stronger firm value leads to increased social disclosure over time, while enhanced social disclosure also contributes to higher Tobin's Q. The study is grounded in Legitimacy and Signalling Theories, suggesting firms with higher market valuation invest more in social transparency while such disclosure reinforces investor confidence.

Board Financial Expertise and Firm Value

Olufemi et al. (2023) studied the assessment of board attributes and financial performance of listed deposit money banks in Nigeria. The study used ex-post facto and longitudinal research designs in obtaining the data from the financial statements of the selected banks. The population of the study was nineteen (19) deposit money banks listed on the Nigerian Exchange Group profile as of 31st December 2021. The study used a purposive sampling technique due to the complete availability of data and the sample size was ten (10) firms. The results found that board size had an insignificant effect on ROA, ROE, and TQ. Whereas board independence, board diversity, board expertise, and CEO duality had a significant effect on ROA, ROE, and TQ. The study concluded that the number of board's members did not have anything to do with the financial performance of deposit money banks in Nigeria.

Joe et al. (2024) the study examine the effect of corporate governance mechanisms on the profitability of listed deposit money banks in Nigeria. The research design



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adopted for this study was the ex post facto research as the secondary data were employed. The population of this study was fourteen listed deposit money banks in Nigeria. The method of data analysis employed was the ordinary least square regression analysis and the statistical package employed was E-views version 14. Based on the analysis of the data, it was found out that board expertise has a positive but insignificant effect on the return on capital employed; board gender diversity has a significant positive effect on return on capital employed of listed deposit money banks in Nigeria. Thus, it was concluded that board monitoring mechanisms have significant effect on profitability of listed deposit money banks in Nigeria.

Ibe et al. (2025) investigates the effect of board independence on earnings management of listed deposit money banks in Nigeria as moderated by audit committee expertise. The study's population consists of 14 listed deposit money banks in Nigeria as at 31st December 2023 with a sample size of 10 banks selected through purposive sampling technique. A quantitative research approach was employed, using secondary data from the annual reports and accounts of the selected banks over a 10-year period from 2014 to 2023 and analyzed using the Moderated Multiple Regression (MMR) model and STATA version 12. The study reveals that financial expertise significantly moderates this relationship, exerting a negative effect.

Review of Related Theories

Triple Bottom Line Theory

The Triple Bottom Line Theory was developed by John Elkington (1997). The theory emphasizes that organizations should evaluate their performance based on three key dimensions: economic (profit), environmental (planet), and social (people). Unlike traditional financial-focused approaches, TBL promotes a holistic view of corporate performance by integrating sustainability into business strategy. It highlights that long-term success depends on a firm's ability to balance profitability with environmental stewardship and social responsibility. Despite challenges in measuring non-financial performance, the theory remains highly relevant in explaining sustainability reporting and its impact on firm value.

3. Methodology

This study adopted a correlational research design to examine the relationship between sustainability reporting, proxied by economic, social, and environmental disclosure, and firm value, measured by Tobin's Q. The population and sample, based on the census sampling technique, comprised all listed oil and gas firms in Nigeria as at 31 December 2025. The sector consisted of seven firms, namely Japaul Gold & Ventures Plc, Aradel Holdings Plc, Oando Plc, Conoil Plc, Eterna Plc, TotalEnergies Marketing Nigeria Plc, and Seplat Energy Plc. The study covered the period 2011 to 2025, representing 15 years and an initial 105 firm-year observations (7×15). However, Aradel Holdings Plc was listed on the Nigerian Exchange Group (NGX) on 14 October 2024 and therefore did not have the required data for the earlier years of the study period.

Consequently, 13 firm-year observations were unavailable for Aradel Holdings Plc, resulting in a final sample of 92 usable firm-year observations ($105 - 13$). The study therefore utilised an unbalanced panel dataset, as Aradel Holdings Plc did not have complete information for the entire 2011–2025 period. The use of an unbalanced panel enables the study to retain all eligible firms in the oil and gas sector and provides a more comprehensive basis for generalising the findings across the sector.

Variable Measurement

Variables used for this study are therefore shown in Table 1.

Table 1

Summary of Variables definitions, measurements and sources

Variable	Definition of the variable	Measurement	Sources
Dependent Variable (TBQ)	Tobin's Q	Market value of Equity + Book value of Debt divided by Book value of Total assets	Buallay, (2019); Gunarsih Ismawati, (2018)
Independent variable (ECN)	Economic disclosure index	Number of dimensions disclosed by company / Total items on Economic dimension, it will be rated 1 if the company makes disclosure on a particular item of economic dimension and 0 if no disclosure is made	Fuadah et al. (2019)
(ENV)	Environmental disclosure index	Number of dimensions disclosed by company / Total items on Environmental dimension, it will be rated 1 if the company makes disclosure on a particular item of environmental dimension and 0 if no disclosure is made	Asuquo et al. (2018)
(SOC)	Social disclosure index	Number of dimensions disclosed by company / Total items on Social dimension, it will be rated 1 if the company makes disclosure on a particular item of social dimension and 0 if no disclosure is made	Gunarsih and Ismawati (2018)
Firm Leverage	Control Variable	Total debt/ Total assets	Yahaya, (2018)
Board financial expertise	Moderator	Proportion of members with accounting or financial expertise	Orazalin and Mahmood (2023)

Source: Researchers Compilation, 2026

The model is depicted below:

$$TBQ_{it} = \beta_0 + \beta_1 ECN_{it} + \beta_2 ENV_{it} + \beta_3 SOC_{it} + \beta_4 LEV_{it} + \beta_5 BFEXP_{it} + \beta_6 BFEXP_{it} * ECN_{it} + \beta_7 BFEXP_{it} * ENV_{it} + \beta_8 BFEXP_{it} * SOC_{it} + \mu_{it} \quad (i);$$

where: TBQ = Tobin's Q, ECN = Economic performance disclosure index, ENV = Environmental performance disclosure index, SOC = Social performance disclosure index, LEV = Firm Leverage, BFEXP = Board Financial Expertise, β_0 = constant, $\beta_1 - \beta_4$ = coefficient of independent variables, μ_1 = error term, i = firm under consideration and t = Time period (in years).

4. Results and Discussion

Descriptive Statistics

It summarizes the central tendency and dispersion of the variables included in the study, thereby providing insights into the behavior and distribution of the dataset.



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Table 2

Descriptive Statistics

Variable	N	Mean	Std. Deviation	Minimum	Maximum
TBQ	92	1.243	0.805	0.049	4.102
ECN	92	0.058	0.235	0.000	1.000
ENV	92	0.375	0.486	0.000	1.000
SOC	92	0.042	0.201	0.000	1.000
FL	92	0.895	0.413	0.051	2.453
BFE	92	1.192	0.455	1.000	3.000

Source: Stata Output, 2026

Tobin's Q (TBQ), which represents firm value, recorded a mean value of 1.243 with a standard deviation of 0.805, indicating moderate variability in firm value among the sampled firms. The minimum value of 0.049 and maximum value of 4.102 show a wide dispersion in the market valuation of firms during the study period. The mean value above one suggests that, on average, firms have market values greater than the replacement cost of their assets, implying positive market perception and potential growth opportunities. However, the relatively high standard deviation indicates considerable differences in firm valuation across the sampled firms.

Economic disclosure (ECN) recorded a mean value of 0.058 with a standard deviation of 0.235. The minimum value of 0 and maximum value of 1 indicate that the variable is measured as a dummy variable. The low mean value suggests that only a small proportion of the sampled firms provide economic-related sustainability disclosures in their reports. This implies that economic disclosure practices among firms are still relatively limited. The small standard deviation also indicates that there is minimal variation among firms regarding economic disclosure practices.

Environmental disclosure (ENV) recorded a mean value of 0.375 with a standard deviation of 0.486. The variable ranges between 0 and 1, indicating that it is measured as a binary variable. The mean value implies that approximately 37.5% of the firms disclose environmental information in their annual reports. The relatively higher standard deviation indicates moderate variability among firms in terms of environmental disclosure practices. This suggests that while some firms actively disclose environmental activities, a significant number of firms still do not engage in such disclosures.

Social disclosure (SOC) has a mean value of 0.042 and a standard deviation of 0.201, with values ranging from 0 to 1. The very low mean value indicates that social disclosure practices are quite limited among the sampled firms. This suggests that only a few firms report information related to social responsibility activities such as employee welfare, community development, and stakeholder engagement. The small variation further indicates that the majority of firms exhibit similar behavior in terms of low social disclosure practices.

Board Financial Expertise (BFE) recorded a mean value of 1.192 with a standard deviation of 0.455. The minimum and maximum values of 1 and 3 indicate that firms have between one and three directors with financial expertise on their boards. The mean value suggests that, on average, firms have slightly more than one financially knowledgeable director on their board. The relatively low standard deviation indicates limited variation among firms in terms of the presence of financial experts on the board, suggesting that most firms maintain at least one financially skilled board member.

Correlation Analysis

Table 3 presents the correlation matrix for TBQ, ECN, ENV, SOC, FL, and BFE.

Table 3

Correlation Matrix

Variable	TBQ	ECN	ENV	SOC	FL	BFE
TBQ	1.000					
ECN	0.101	1.000				
ENV	-0.145	0.174	1.000			
SOC	-0.032	0.126	0.011	1.000		
FL	-0.151	0.286	-0.182	-0.107	1.000	
BFE	0.352	0.130	0.014	0.096	-0.110	1.000

Source: Stata Output, 2026

The correlation coefficient between TBQ and ECN is 0.101, indicating a weak positive relationship between firm value and economic disclosure. The correlation coefficient between TBQ and ENV is -0.145, which indicates a weak negative relationship between environmental disclosure and firm value. The correlation coefficient between TBQ and SOC is -0.032, indicating a very weak negative relationship between social disclosure and firm value.

The correlation coefficient between TBQ and BFE is 0.352, indicating a moderate positive relationship between board financial expertise and firm value. Importantly, none of the correlation coefficients exceed 0.80, which is the commonly accepted threshold for multicollinearity problems. This indicates that multicollinearity is unlikely to be a serious concern in the regression analysis of the study.

Table 4

Summary of Panel Corrected Standard Errors Direct Model

Variables	Coeff.	Z-value	P-value
Economic Disclosure (ECN)	0.311	1.20	0.230
Environmental Disclosure (ENV)	-0.445	-5.00	0.000
Social Disclosure (SOC)	-0.550	-2.19	0.029
Board Financial Expertise (BFE)	0.381	3.43	0.001
R ²			0.301
Wald chi ²			53.09
Prob.			0.000

Summary of Panel Corrected Standard Errors Moderated Model

ECNBFE	-0.902	-3.39	0.001
ENVBFE	-1.131	-7.31	0.000
SOCBFE	-0.318	-0.78	0.434
R ²			0.468
Wald chi ²			118.26
Prob.			0.000

Source: Stata Output, 2026

For the direct model, the PSCE regression model is statistically significant with a Wald Chi-square value of 53,09 and a corresponding prob. value of 000(p<01). This

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indicates that the explanatory variables jointly have a significant effect on firm value among listed oil and gas firms in Nigeria. the model explains approximately 30.1% ($R^2 = 0.301$) of the variations in firm value, while the remaining 69.9% is attributable to factors outside the model. However, the moderated model explains about 46.8% of the variation in firm value ($R^2 = 0.468$), indicating a moderate level of explanatory power, while the remaining variation is driven by other factors not included in the model.

The Wald chi-square statistic ($X^2 = 118.26$, $p=0.000$) shows that the model is jointly significant, meaning that sustainability disclosures, board financial expertise, and their interaction terms collectively have a statistically meaningful effect on firm value. Thus, the results confirm that the moderated specification is statistically valid and relevant for explaining firm value in listed oil and gas firms in Nigeria.

Economic Disclosure and Firm Value

The result revealed that economic disclosure has a positive but statistically insignificant effect on firm value among listed oil and gas firms in Nigeria ($\beta=0.311$, $z=1.20$, $p=.230$). This indicates that an increase in economic disclosure is associated with a corresponding increase in firm value; however, the relationship is not strong enough to be statistically reliable at the 5% significance level.

From the perspective of the triple bottom line theory, the result offers limited support for the profit dimension, which posits that transparent economic performance contributes to sustainable value creation. This finding is consistent with the studies of Ibrahim and Musa (2026) and Olayinka and Ojeka (2025), which reported weak or insignificant effects of economic disclosure on some measures of firm performance. However, it contradicts the findings of Adegbe et al. (2024) and Al-Matari and Alosaimi (2025), who found a significant positive relationship between economic disclosure and firm value.

Environmental Disclosure and Firm Value

The regression result indicates that environmental disclosure has a negative and statistically significant effect on firm value among listed oil and gas firms in Nigeria ($\beta=-0.445$, $Z=-5.00$, $p<.001$) This implies that increased environmental disclosure significantly reduces firm value. Similarly, the result does not support the planet dimension of the Triple Bottom Line Theory, which argues that environmental responsibility contributes positively to long-term organizational value. The finding is supported by (Nweze & Nwadior, 2024). However, the result contrasts with the findings of (Msomi et al. 2025; Chen et al. 2024).

Social Disclosure and Firm Value

The study found that social disclosure exerts a negative and statistically significant effect on firm value among listed oil and gas firms in Nigeria ($\beta=-0.550$, $Z=-2.19$, $p=.029$). This suggests that increased disclosure of social activities significantly reduces firm value. This outcome is inconsistent with the a priori expectation of a positive relationship and contradicts the people dimension of the Triple Bottom Line Theory, which argues that investments in social performance enhance stakeholder relationships and ultimately improve firm value. The finding aligns with (Msomi et al. 2025; Chen et al. 2024). Nevertheless, it contradicts the findings of (Nkosi et al. 2024; Ali et al. 2026).

Board Financial Expertise and Firm Value

The result reveals that board financial expertise has a positive and statistically significant effect on firm value among listed oil and gas firms in Nigeria ($\beta=0.381$, $Z=3.43$, $p=.001$). This indicates that firms with a higher proportion of directors

possessing accounting and financial expertise tend to achieve higher market valuation. The finding is consistent with the a priori expectation of a positive relationship and provides support for the governance assumptions underpinning the triple bottom line theory.

While the theory emphasizes the integration of economic, environmental, and social performance, effective governance mechanisms such as board financial expertise are necessary to ensure that sustainability initiatives translate into value creation. This finding is supported by Olufemi et al. (2023). However, it differs from the findings of Zalata et al. (2021).

Economic Disclosure, Board Financial Expertise and Firm Value

The interaction between economic disclosure and board financial expertise shows a negative and statistically significant effect on firm value ($\beta=-0.902$, $p=0.001$) This indicates that while economic disclosure alone may improve transparency, its value-enhancing effect weakens when firms have higher financial expertise on the board. The a priori expectation was a positive moderating effect, assuming that financial expertise would strengthen reporting credibility and enhance investor confidence.

Environmental Disclosure, Board Financial Expertise and Firm Value

The interaction between environmental disclosure and board financial expertise is negative and statistically significant ($\beta=-1.131$, $p<0.000$) This suggests that environmental disclosure reduces firm value when financial expertise on the board is higher. In practical terms, boards with strong financial backgrounds may interpret environmental initiatives as cost burdens rather than value-enhancing investments, thereby reducing investor perception of ESG benefits. The a priori expectation was a positive moderating effect, as financial expertise should improve strategic integration of environmental sustainability into financial decision-making.

Social Disclosure, Board Financial Expertise and Firm Value

The interaction between social disclosure and board financial expertise is negative but statistically insignificant ($\beta=-0.318$, $p=0.434$). This implies that board financial expertise does not meaningfully alter the effect of social disclosure on firm value. Practically, social disclosures related to employee welfare, community relations, and CSR activities appear to be valued independently of board financial sophistication. However, the result shows no statistical support for this moderating role.

5. Conclusion and Recommendations

The study concludes that sustainability disclosure does not uniformly influence the firm value of listed oil and gas firms in Nigeria. While economic disclosure has a positive but insignificant effect on firm value, environmental and social disclosures exert significant negative effects. Conversely, board financial expertise significantly enhances firm value through improved governance and financial oversight.

The study further reveals that board financial expertise significantly weakens the relationships between economic disclosure and firm value and between environmental disclosure and firm value, but does not significantly moderate the relationship between social disclosure and firm value. Thus, the findings suggest that although board financial expertise directly improves firm value, its moderating influence on sustainability disclosure varies across the different dimensions of disclosure.

Based on the findings, the study recommends that listed oil and gas firms improve the quality, transparency, and strategic relevance of sustainability disclosures, particularly by clearly communicating the long-term value of environmental and social



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investments. Firms should strengthen board financial expertise while complementing it with sustainability-related competencies to ensure balanced oversight of ESG initiatives. Regulatory authorities should also enhance sustainability reporting standards and governance requirements to improve the credibility of corporate disclosures, promote investor confidence, and support long-term firm value creation.

References

- Abdi, M., Nguyen, P., & Li, X. (2024). Sustainability practices and firm performance: Evidence from emerging markets. *Journal of Sustainable Finance & Investment*, 14(2), 121-140. <https://doi.org/10.1080/20430795.2024.1789012>
- Global Reporting Initiative. (2021). *GRI universal standards 2021*. <https://www.globalreporting.org/standards/>
- Abiodun, B. Y., & Olayinka, E. O. (2021). Sustainability reporting and firm performance: Evidence from listed companies in Nigeria. *Cogent Business & Management*, 8(1), 1939920. <https://doi.org/10.1080/23311975.2021.1939920>
- Aksan, E., & Gantowati, E. (2020). Sustainability reporting and firm value: Evidence from Indonesia. *Asian Journal of Accounting Research*, 5(2), 137-149. <https://doi.org/10.1108/AJAR-11-2019-0109>
- Alareeni, B., & Hamdan, A. (2020). ESG impact on performance of GCC firms: Moderating role of corporate governance. *Corporate Governance*, 20(7), 1289-1307. <https://doi.org/10.1108/CG-03-2020-0119>
- Alhassan, A. L., Agyei, S. K., & Asamoah, M. E. (2021). Intellectual capital, environmental disclosure and firm performance: Evidence from emerging markets. *Journal of Cleaner Production*, 281, 124340. <https://doi.org/10.1016/j.jclepro.2020.124340>
- Amacha, E. B., & Dastane, O. (2017). Sustainability practices as determinants of financial performance: A conceptual framework. *International Journal of Accounting & Business Management*, 5(2), 17-34.
- Ammer, M. A., Ahmad-Zaluki, N. A., & Benkraiem, R. (2020). Does sustainability reporting improve firm value? Evidence from emerging markets. *Business Strategy and the Environment*, 29(8), 3292-3308. <https://doi.org/10.1002/bse.2573>
- Asuquo, A. I., Dada, E. T., & Onyeogaziri, U. R. (2018). The effect of sustainability reporting on corporate performance of quoted firms in Nigeria. *International Journal of Accounting Research*, 6(2), 1-10.
- Bahraini, K., Jahanshahi, A. A., & Brem, A. (2021). Corporate governance, firm value, and financial performance: A systematic review. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(2), Article 153. <https://doi.org/10.3390/joitmc7020153>
- Bakry, W., Rashid, M., & Hussainey, K. (2023). Sustainability reporting and financial performance: Evidence from emerging markets. *Journal of Accounting in Emerging Economies*, 13(2), 220-242. <https://doi.org/10.1108/JAEE-07-2021-0204>
- Bansal, P., Grewatsch, S., & Sharma, G. (2021). How COVID-19 informs business sustainability research: It's time for a systems perspective. *Journal of Management Studies*, 58(2), 602-606. <https://doi.org/10.1111/joms.12669>



- Buallay, A. (2019). Is sustainability reporting (ESG) associated with firm performance? Evidence from the European banking sector. *Management of Environmental Quality: An International Journal*, 30(1), 98-115.
<https://doi.org/10.1108/MEQ-12-2017-0149>
- Burhan, A. H. N., & Rahmanti, W. (2012). The impact of sustainability reporting on company performance. *Journal of Economics, Business, and Accountancy Ventura*, 15(2), 257-272. <https://doi.org/10.14414/jebav.v15i2.79>
- Chen, X., Li, J., & Zhang, Y. (2024). Environmental disclosure and firm value: Evidence from Chinese A-share listed firms. *Journal of Environmental Management*, 325, 116599. <https://doi.org/10.1016/j.jenvman.2024.116599>
- Deegan, C. (2002). The legitimising effect of social and environmental disclosures—A theoretical foundation. *Accounting, Auditing & Accountability Journal*, 15(3), 282-311. <https://doi.org/10.1108/09513570210435852>
- Deegan, C. (2019). Financial accounting theory (5th ed.). McGraw-Hill Education.
- Dewi, P., & Maulana, A. (2022). Corporate social responsibility and firm value: Evidence from Indonesian firms. *International Journal of Business and Society*, 23(3), 935-954.
- Dibia, N. O., & Onwuchekwa, J. C. (2015). Determinants of audit committee effectiveness in Nigerian listed companies. *International Journal of Economics, Commerce and Management*, 3(4), 1-20.
- Elkington, J. (1997). Cannibals with forks: The triple bottom line of 21st century business. Capstone Publishing.
- Elkington, J. (2018). 25 years ago I coined the phrase “Triple Bottom Line.” Here’s why it’s time to rethink it. Harvard Business Review.
<https://hbr.org/2018/06/25-years-ago-i-coined-the-phrase-triple-bottom-line-heres-why-im-giving-up-on-it>
- Freeman, R. E. (1984). Strategic management: A stakeholder approach. Pitman Publishing.
- Freeman, R. E., Harrison, J. S., Phillips, R. A., Parmar, B. L., & De Colle, S. (2010). Stakeholder theory: The state of the art. Cambridge University Press.
- Fuadah, L. L., Yuliani, Y., & Arisman, A. (2019). Sustainability reporting and firm value: Evidence from Indonesian listed companies. *International Journal of Financial Research*, 10(5), 272-281. <https://doi.org/10.5430/ijfr.v10n5p272>
- Global Reporting Initiative. (2021). GRI universal standards 2021.
<https://www.globalreporting.org/standards/>
- Gray, R., Kouhy, R., & Lavers, S. (1995). Corporate social and environmental reporting: A review of the literature and a longitudinal study of UK disclosure. *Accounting, Auditing & Accountability Journal*, 8(2), 47-77.
<https://doi.org/10.1108/09513579510146996>
- Gerged, A. M., Cowton, C. J., & Beddewela, E. (2023). Towards sustainable development in the oil and gas sector: The role of environmental, social and governance disclosure. *Business Strategy and the Environment*, 32(4), 1874-1892. <https://doi.org/10.1002/bse.3213>
- Gunarsih, T., & Ismawati, Y. (2018). Sustainability reporting and firm value: Evidence from Indonesia. *Journal of Accounting and Investment*, 19(1), 1-14.
- Haniffa, R. M., & Cooke, T. E. (2005). The impact of culture and governance on corporate social reporting. *Journal of Accounting and Public Policy*, 24(5), 391-430. <https://doi.org/10.1016/j.jaccpubpol.2005.06.001>



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- Hassan, M., Karim, R., & Uddin, S. (2024). Economic disclosure in integrated reporting and firm value: Evidence from Bangladesh. *Journal of Accounting in Emerging Economies*, 14(1), 90-112.
- Husnaini, W., & Basuki, B. (2020). Does sustainability reporting improve firm performance? Evidence from Indonesia. *Quality-Access to Success*, 21(176), 52-56.
- Iatridis, G. E. (2013). Environmental disclosure quality: Evidence on environmental performance, corporate governance and value relevance. *Emerging Markets Review*, 14, 55-75. <https://doi.org/10.1016/j.ememar.2012.11.003>
- International Integrated Reporting Council. (2021). International - <IR>framework. <https://www.integratedreporting.org>
- Iswati, S. (2020). Sustainability reporting and firm value: Evidence from Indonesian listed companies. *Journal of Asian Finance, Economics and Business*, 7(11), 453-461. <https://doi.org/10.13106/jafeb.2020.vol7.no11.453>
- Iyoha, F. O. (2023). Sustainability reporting and corporate financial performance in Nigeria: Evidence from listed firms. *Nigerian Journal of Management Sciences*, 24(1), 118-136.
- Jadoon, S., Abbas, Z., Khan, M.A., & Raza, H. (2021). Sustainability reporting and stakeholder engagement: Evidence from emerging economies. *Sustainability*, 13(15), 8415. <https://doi.org/10.3390/su13158415>
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Jeroh, E. (2020). Corporate social responsibility disclosure and financial performance: Evidence from listed firms in Nigeria. *Accounting and Taxation Review*, 4(2), 1-16.
- Khan, M., Serafeim, G., & Yoon, A. (2016). Corporate sustainability: First evidence on materiality. *The Accounting Review*, 91(6), 1697-1724. <https://doi.org/10.2308/accr-51383>
- KPMG. (2022). *The KPMG survey of sustainability reporting 2022*. <https://home.kpmg/xx/en/home/insights/2022/10/survey-of-sustainability-reporting-2022.html>
- Krüger, P. (2015). Corporate goodness and shareholder wealth. *Journal of Financial Economics*, 115(2), 304-329. <https://doi.org/10.1016/j.jfineco.2014.09.008>
- Li, W., Zhang, R., & Chen, J. (2020). Sustainability reporting and firm value: Evidence from China. *Journal of Cleaner Production*, 256, 120412. <https://doi.org/10.1016/j.jclepro.2020.120412>
- Loh, L., Thomas, T., & Wang, Y. (2017). Sustainability reporting and firm value: Evidence from Singapore-listed companies. *Sustainability*, 9(11), 2112. <https://doi.org/10.3390/su9112112>
- Luo, X., & Bhattacharya, C. B. (2006). Corporate social responsibility, customer satisfaction, and market value. *Journal of Marketing*, 70(4), 1-18. <https://doi.org/10.1509/jmkg.70.4.001>
- Michelon, G. (2011). Sustainability disclosure and reputation: A comparative study. *Corporate Reputation Review*, 14(2), 79-96. <https://doi.org/10.1057/crr.2011.10>



- Michelon, G., Pilonato, S., & Ricceri, F. (2015). CSR reporting practices and the quality of disclosure: An empirical analysis. *Critical Perspectives on Accounting*, 33, 59-78. <https://doi.org/10.1016/j.cpa.2014.10.003>
- Ng, A. C., & Rezaee, Z. (2015). Business sustainability performance and cost of equity capital. *Journal of Corporate Finance*, 34, 128-149. <https://doi.org/10.1016/j.jcorpfin.2015.08.003>
- Nguyen, P., Rahman, N., Zhao, R., & Bhattacharya, S. (2024). Sustainability disclosure, stakeholder engagement, and firm value: Evidence from emerging markets. *Business Strategy and the Environment*. Advance online publication.
- Nigerian Exchange Group. (2018). Nigerian Exchange sustainability disclosure guidelines. Nigerian Exchange Group.
- Nigerian National Petroleum Corporation. (1982). Annual statistical bulletin. Nigerian National Petroleum Corporation.
- O'Donovan, G. (2002). Environmental disclosures in the annual report: Extending the applicability and predictive power of legitimacy theory. *Accounting, Auditing & Accountability Journal*, 15(3), 344-371. <https://doi.org/10.1108/09513570210435870>
- Olagunju, A., Oloredo, T. E., Aderemi, A. A., Oladejo, T. M., & Lamidi, W. A. (2025). Influence of firm attributes and governance on the quality of sustainability reports of Nigerian deposit money banks. *Istanbul Business Research*, 54(1), 23-37. <https://doi.org/10.26650/ibr.2025.54.1351667>
- Olagunju, A., Adenle, O. E., Obademi, O., Obiosa, R. T., & Akinola, A. O. (2023). Sustainability reporting and earnings management of listed non-financial firms in Nigeria. *Research Papers Faculty of Materials Science and Technology Slovak University of Technology*, 31(52), 68-83. <https://doi.org/10.2478/rput-2023-0008>
- Ong, T. S., & Djajadikerta, H. G. (2020). Corporate sustainability performance and financial performance: A review of literature. *Journal of Risk and Financial Management*, 13(8), 177. <https://doi.org/10.3390/jrfm13080177>
- Pamungkas, I. D., Ghazali, I., Achmad, T., Khaddafi, M., & Hidayah, R. (2023). Sustainability reporting, corporate governance, and firm value: Evidence from Indonesian listed companies. *Sustainability*, 15(3), 2348. <https://doi.org/10.3390/su15032348>
- Porter, M. E., & Kramer, M. R. (2006). Strategy and society: The link between competitive advantage and corporate social responsibility. *Harvard Business Review*, 84(12), 78-92.
- Porter, M. E., & Kramer, M. R. (2011). Creating shared value. *Harvard Business Review*, 89(1-2), 62-77.