

Enhancing Corporate Success Through the Business Sustainability Model: An Empirical Analysis of the Impact of ESG Factors on the Financial Performance of Oil and Gas Firms in Nigeria

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ABSTRACT: The fundamental goal of Financial Management is the maximization of shareholders' wealth. Organizations, therefore, characteristically employ appropriate Business Models with policy initiatives that putatively enhance indicators of corporate financial success. Empirical evidence, however, does not in many cases validate the supposed predication of corporate financial performance of firms on the policy components of their operational Business Models, thus making the relationship between some models and the relevant financial performance indicators somewhat nebulous. This study investigates the relationship between the Business Sustainability Model and corporate financial success in Nigeria's oil and gas sector. *Environmental, Social, and Governance* (ESG) factors are used as operational dimensions of the predictor variable while *Earnings Per Share* (EPS) and *Share Price* are employed as proxies for financial performance, the criterion variable. Utilizing a panel data approach across 8 listed firms from 2013 to 2023, the research applies both *Fixed Effects* and *Random Effects* models, with the *Hausman test* confirming the suitability of the Fixed Effects model. The findings reveal that environmental performance significantly and positively affects firm performance, suggesting that firms engaging in environmentally responsible practices tend to outperform their peers. However, social and governance scores exhibit no statistically significant impact on EPS, with governance even showing a negative association. These outcomes are discussed in the context of stakeholder theory, legitimacy theory, and the resource-based view and are compared to previous empirical studies. The study concludes that environmental sustainability is a vital driver of corporate success in Nigeria, while social and governance practices require stronger institutional support and strategic alignment to deliver measurable benefits. In the light of our findings, we recommend enhanced ESG integration, improved corporate governance enforcement, and standardized ESG reporting. Besides contributing to the growing literature on sustainable business practices in emerging markets, this study highlights the strategic relevance of the Business Sustainability Model in promoting firm performance and long-term value creation.

KEYWORDS: Business Sustainability Model, Environmental, Social, and Governance (ESG) factors, Earnings Per Share (EPS), Share Price (SP), Nigeria's Oil and Gas Industry

1. INTRODUCTION

The oil and gas sector remains a key driver of economic growth in Nigeria, significantly contributing to the country's GDP, government revenue, and employment. According to Ebimobowei (2022), the industry accounts for over 80% of Nigeria's foreign exchange earnings and is a significant source of government revenue. However, despite its economic significance, the sector is increasingly facing scrutiny due to environmental degradation, corporate governance challenges, and concerns about social responsibility. The rising global emphasis on climate change mitigation and ethical business practices has led to growing pressure from stakeholders, regulators, and investors for companies to adopt sustainable business models that align with global Environmental, Social, and Governance (ESG) standards (Barresi, Bertoni & Rossi, 2025).

The adoption of the Business Sustainability Model (BSM) has emerged as a strategic approach for oil and gas firms to achieve long-term success while mitigating environmental and social risks. The BSM emphasizes the integration of sustainability into corporate decision-making by balancing economic performance with environmental stewardship and social responsibility. Sudi & Inuwa (2025) argue that sustainability practices not only enhance corporate reputation but also contribute to risk management and

Enhancing Corporate Success Through the Business Sustainability Model: An Empirical Analysis of the Impact of ESG Factors on the Financial Performance of Oil and Gas Firms in Nigeria

operational efficiency. Companies that implement robust ESG strategies tend to experience increased investor confidence, improved regulatory compliance, and enhanced financial performance (Sudi & Inuwa, 2025).

Despite the global shift toward sustainability, the Nigerian oil and gas industry has been slow to adopt comprehensive ESG frameworks. Many firms still prioritize short-term profitability over long-term sustainability, leading to reputational damage, regulatory sanctions, and financial instability (Abdulkareem Ibrahim, 2024). Previous studies suggest that firms with strong ESG commitments are more resilient to financial downturns and market volatility, as sustainable business practices reduce operational risks and improve stakeholder engagement (Bakhsh et al., 2024).

The relationship between ESG factors and financial performance has been widely explored in developed economies, where firms with high ESG ratings tend to exhibit superior financial performance due to better risk management and investor trust (Alvarez-Perez & Fuentes, 2024). However, empirical studies on this subject in Nigeria's oil and gas sector remain limited. Some researchers argue that while governance and social responsibility initiatives may yield immediate financial benefits, environmental sustainability efforts require a long-term commitment before significant financial gains are realized (Alvarez-Perez & Fuentes, 2024).

The financial performance of oil and gas firms is often measured through key indicators such as Return on Assets (ROA), Return on Equity (ROE), Earnings Per Share (EPS), and Market Value. Prior studies have found mixed results regarding the impact of ESG practices on these metrics. For instance, Ali et al. (2025) suggests that strong governance structures and transparent reporting mechanisms positively influence ROE and investor confidence. Similarly, Akinyemi and Obiora (2021) highlight that firms engaging in corporate social responsibility (CSR) initiatives, such as community development and employee welfare programs, often experience increased brand loyalty and improved workforce productivity. However, Nazir et al. (2024) notes that high environmental compliance costs may negatively affect short-term profitability, particularly in regions with weak regulatory enforcement.

While extensive literature exists on ESG and corporate performance in developed markets, studies focusing on Nigeria's oil and gas sector remain scarce. Most existing studies have primarily examined corporate governance and social responsibility, with limited emphasis on the role of environmental sustainability in financial performance. Furthermore, previous research has not adequately addressed the moderating effects of governance structures on ESG-financial performance relationships in emerging economies (Okafor & Bello, 2022). Given Nigeria's dependence on oil revenue and the increasing global push for sustainable energy practices, there is a need for empirical studies that examine how ESG integration can drive financial success in the sector. This research contributes to the existing body of knowledge by providing empirical evidence on the link between ESG factors and financial performance in an emerging market context. It also offers practical insights for policymakers, investors, and corporate managers on how sustainability strategies can be leveraged to enhance business success in the oil and gas sector. By addressing the existing research gap, this study provides a foundation for future academic discourse on sustainable corporate practices in Nigeria and other developing economies.

1.2 Aim and Objectives of the Study

This fundamental aim of this study is to investigate the relationship between ESG factors and financial performance in Nigeria's oil and gas industry. Specifically, it seeks to:

- i. Examine the impact of environmental sustainability practices on corporate financial performance.
- ii. Evaluate the role of corporate social responsibility initiatives in shaping corporate financial performance.
- iii. Analyze the effect of governance structure on corporate financial performance.

1.3 Research Questions

The study aimed at providing answers to the following research questions:

- i. To what extent do environmental sustainability practices affect the financial performance of oil and gas firms in Nigeria?
- ii. Do corporate social responsibility initiatives impact the financial performance of oil and gas firms in Nigeria?
- iii. To what extent does governance structure influence corporate financial performance in the Nigerian oil and gas industry?

1.3 Hypotheses

The following tentative answers to the research questions stated above were provided as Null Hypotheses to further guide the study:

- i. **H1:** Environmental sustainability does not significantly influence financial performance.
- ii. **H2:** Social responsibility initiatives do not significantly enhance corporate profitability.

Enhancing Corporate Success Through the Business Sustainability Model: An Empirical Analysis of the Impact of ESG Factors on the Financial Performance of Oil and Gas Firms in Nigeria

iii. **H3:** Governance quality does not significantly impact financial success.

2.0 LITERATURE REVIEW

In this section we shall take a closer analytical look at the major issues relating to the study, beginning from the conceptual and theoretical frameworks to related empirical works

2.1 Conceptual Review

2.1.1 Business Sustainability Model and ESG Integration

The Business Sustainability Model (BSM) emphasizes long-term value creation through responsible resource utilization, ethical business practices, and regulatory compliance. ESG factors serve as key components in implementing sustainability strategies within corporate structures. Below is the conceptual framework which graphically articulates the study variables and their operational dimensions.

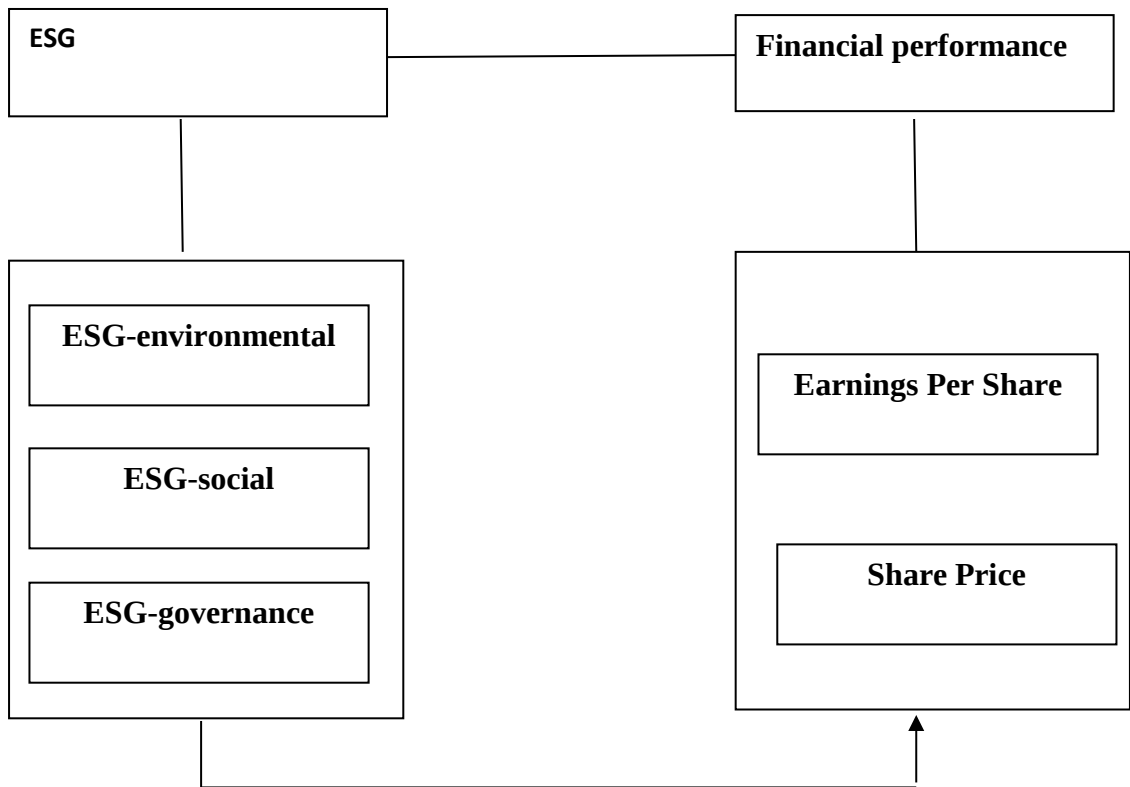


Figure 2.1 Conceptual Framework of the study

Source: Adapted from Ridwan & Alghifari (2025), Ali et al (2025), Makridou et al (2024)

2.1.2 Environmental Factors

Climate change policies, carbon emissions reduction, waste management, and renewable energy adoption significantly impact corporate reputation and cost efficiency are the basic ecological factors of interest in the ESG model.

2.1.3 Social Factors

Social factors as captured in the ESG model include employee welfare, diversity and inclusion, community engagement, and ethical supply chain management contribute to operational stability and brand loyalty.

2.1.4 Governance Factors

Among the factors embodied in the Governance component of the ESG model are Board diversity, shareholder rights, transparency, and compliance with regulatory frameworks strengthen investor confidence and risk management.

2.2 Theoretical Framework

The study is grounded in the Stakeholder Theory and Resource-Based View (RBV). The Stakeholder Theory suggests that firms must address the expectations of all stakeholders to achieve long-term sustainability. RBV emphasizes that ESG capabilities can serve as strategic assets that enhance competitiveness and profitability.

Enhancing Corporate Success Through the Business Sustainability Model: An Empirical Analysis of the Impact of ESG Factors on the Financial Performance of Oil and Gas Firms in Nigeria

2.3 Empirical Evidence on ESG and Financial Performance

Several global studies support the positive correlation between ESG disclosure and financial success. Barresi, Bertoni, and Rossi (2025) investigate the relationship between environmental performance (EP) and financial performance (FP) in the oil and gas industry, considering the moderating role of institutional characteristics. Using a sample of 229 companies from 24 countries, the study employs correlation and regression analyses to assess the link between carbon emissions—categorized into Scope 1, Scope 2, and Scope 3—and financial metrics. Additionally, a cluster analysis groups country based on institutional factors, followed by multivariate regression to examine how these factors influence the EP-FP relationship. The study expands existing literature by focusing on environmentally sensitive industries and offering a nuanced perspective on carbon emissions' financial impact. Its novel approach of disaggregating emissions into three scopes enhances understanding of the complexities surrounding sustainability and corporate financial outcomes in the oil and gas sector.

Ridwan & Alghifari (2025) explore how environmental, social, and governance (ESG) practices influence financial risk in Indonesia's infrastructure sector, considering operational efficiency and profitability as moderating factors. Analyzing data from 14 infrastructure firms listed on the Indonesia Stock Exchange from 2020 to 2022, the study employs panel data regression with a random-effects model. The findings indicate that while ESG initiatives increase financial risk due to costs and uncertainties, firms with strong operational performance mitigate this effect, whereas profitability amplifies it. The study is limited to the infrastructure sector in Indonesia, suggesting future research should examine other industries and regions for broader applicability. Policymakers can use these insights to develop balanced sustainability frameworks, while corporate managers can optimize operational efficiency and profitability to align ESG adoption with financial stability. This research contributes to the limited body of work on how operational and financial factors shape the ESG-financial risk dynamic in emerging markets.

Ali et al. (2025) examine the impact of Environmental, Social, and Governance (ESG) disclosure on the profitability of non-financial firms listed in Saudi Arabia, aligning with the objectives of Saudi Vision 2030. Using panel data from 100 companies between 2019 and 2023, the study employs a random-effects regression model to analyze the relationship between ESG disclosure and profitability, measured by return on assets (ROA). The findings indicate a strong positive correlation, highlighting the financial advantages of corporate transparency and sustainability. Grounded in stakeholder theory, the study suggests that firms committed to ESG principles enhance investor confidence, improve risk management, and boost operational efficiency. A key contribution is the development of a tailored ESG disclosure index that integrates global standards with Saudi regulatory requirements, providing a robust tool for evaluating corporate sustainability practices. The research offers valuable insights for policymakers, investors, and corporate executives, emphasizing ESG's role in achieving long-term financial stability.

Sudi & Inuwa (2025) examine the impact of environmental and economic reporting on the financial performance of listed downstream oil and gas companies in Nigeria from 2013 to 2023. Using a panel research design, the study analyzes secondary data from the annual reports of nine companies. Financial performance, measured by net profit margin, is assessed alongside environmental and economic reporting as independent variables, with firm size as a control variable. Employing descriptive statistics, correlation, and regression analysis via E-Views 12, the results indicate that while economic reporting significantly affects net profit margin, environmental reporting does not. However, both variables show a positive relationship with financial performance. The study suggests that companies should adopt environmental regulations and consider stakeholder interests to enhance profitability.

Dsouza & Krishnamoorthy (2024) investigate the impact of ESG excellence on corporate valuation in the oil and gas sector, specifically addressing the challenge of quantifying ESG's effect on market value. This is a significant topic given the increasing push for sustainability and investor concerns regarding ESG performance. Using a dataset from Thomson Reuters, covering 960 global firms from 2011-2022, the study employs empirical analysis. The choice of a large dataset enhances the study's credibility, though it would be beneficial to understand which empirical models were used. The study finds that ESG excellence correlates negatively with corporate valuation in a direct sense. However, it contributes positively when mediated through operational efficiency and profitability. This aligns with prior research suggesting that ESG investments require a strategic approach to yield financial benefits. It concludes that ESG efforts must translate into tangible financial benefits to enhance valuation. This has strong implications for policymakers, corporate strategists, and investors aiming to balance ESG initiatives with profitability. The study calls for more industry-specific analyses and refined ESG metrics to provide further clarity. This is a reasonable suggestion, as different industries may experience ESG impacts differently.

Nazir et al. (2024) examine how sustainable finance impacts the financial stability of firms in Pakistan's oil and gas sector, with ESG factors as a mediator. This topic is timely, given the growing importance of integrating ESG into financial decision-making. Using quantitative methods and firm-level data from the Pakistan Stock Exchange, the study evaluates financial stability through indicators like ROA, ROE, and EPS. While the data source is reliable, further details on the analytical approach (e.g., regression

Enhancing Corporate Success Through the Business Sustainability Model: An Empirical Analysis of the Impact of ESG Factors on the Financial Performance of Oil and Gas Firms in Nigeria

models) would strengthen the study. Firms with higher ESG scores exhibit greater financial stability, reinforcing the importance of ESG integration in financial strategies. This aligns with prior studies linking ESG to long-term resilience. The study emphasizes ESG's role in fostering financial stability, which is useful for policymakers and corporate managers seeking sustainable business strategies.

Chen, Song & Gao (2023) discuss the global rise of ESG investments, citing the study's relevance. It explores the link between ESG and corporate financial performance, using stakeholder and signaling theory. These theoretical frameworks provide a strong foundation for understanding ESG's impact. Using a dataset of 3,332 firms (24,076 observations) from 2011-2020, analyzed with STATA 16.0, the study ensures robust statistical validity. The results show a significant positive relationship between ESG and corporate performance, especially in high-risk scenarios. However, ESG benefits are less pronounced for smaller firms. The study suggests that ESG integration enhances corporate success and sustainability, providing valuable insights for businesses and governments. It contributes empirical evidence on ESG's role in corporate success, emphasizing its importance in environmentally sensitive industries.

Makridou, Doumpos & Lemonakis (2024) examines how ESG factors affect the profitability of energy firms, particularly through ROA, an essential profitability measure. Using panel data (911 firm-year observations from 85 European energy firms between 1995 and 2020), it applies two different models. The dataset is extensive, lending credibility to the study. The results indicate a marginally negative relationship between ESG and profitability. However, when examining ESG subcomponents separately, environmental responsibility negatively impacts profitability, while social and governance factors have a less significant effect. The study fills a gap in the European energy sector's ESG literature, providing valuable insights for investors and policymakers.

Alvarez-Perez & Fuentes (2024) focuses on how ESG ratings affect corporate bond credit spreads in the oil and gas sector. Using secondary data from Refinitiv (2018-2022) and applying two-stage least squares regressions, the study ensures robustness in its findings. Companies with higher ESG ratings experience lower borrowing costs, which is particularly beneficial for non-state-owned firms. The study is limited to secondary data and the oil and gas sector. Future research should include other industries and primary data sources. The findings highlight ESG's financial benefits, encouraging companies to enhance ESG disclosure to reduce borrowing costs and improve sustainability. This study contributes unique insights on the differential impact of ESG on state-owned vs. non-state-owned firms.

Loftsgarden (2020) explores the link between ESG performance, corporate financial performance (CFP), and firm value in the energy sector. Using panel data (116 listed firms, 928 observations, 2012-2019), it applies a comparative industry approach. Oil & gas firms benefit from ESG engagement, while energy equipment firms experience negative impacts. The social pillar influences financial performance the most. Findings align with stakeholder theory and provide insights into how ESG affects financial performance across industries.

Alkaraan et al. (2022) examine how Industry 4.0 transformation (CTTI4.0) is disclosed in UK annual reports and its impact on financial performance. Firms with strong ESG performance engage more in CTTI 4.0 disclosure and experience better financial outcomes. The findings help decision-makers and regulators understand the economic impact of Industry 4.0 and ESG integration. García-Amate et al. (2023) examine the moderating effect of ESG controversies on the ESG–CFP relationship in oil and gas firms. ESG controversies significantly impact financial performance, emphasizing the need for effective ESG risk management. Hu, Hassan & Atif (2024) The study evaluates how ESG transformation has influenced CEPESA's financial metrics over five years. CEPESA has improved its ESG management, but debt financing has increased. The study provides a case-specific ESG impact analysis. This review provides a structured breakdown of the studies, highlighting their strengths, findings, and contributions to the ESG-financial performance discourse.

However, empirical research within Nigeria's oil and gas sector is sparse, necessitating further exploration of how local firms integrate sustainability strategies into their operations.

3.0 METHODOLOGY

3.1 Research Design

The study employs an ex-post facto research design, utilizing historical financial and ESG data from listed oil and gas companies in Nigeria.

3.2 Population and Sample Size of the Study

The study population consists of nine quoted oil and gas companies in Nigeria. While the sample size excluded one of the companies listed in 2023, a total of 8 oil and gas companies were selected. Those that were selected were listed in or before 2012 and are still in operation with complete data up to 2023.

Enhancing Corporate Success Through the Business Sustainability Model: An Empirical Analysis of the Impact of ESG Factors on the Financial Performance of Oil and Gas Firms in Nigeria

3.3 Data Collection

Secondary data is obtained from annual reports, sustainability disclosures, and the Nigerian Stock Exchange. The study covers a sample of oil and gas firms from 2013 to 2023.

3.4 Model Specification

To examine the impact of ESG on financial performance, the following econometric model is applied:

$$FP = \beta_0 + \beta_1 ESG_{Env} + \beta_2 ESG_{Soc} + \beta_3 ESG_{Gov} + \epsilon$$

where:

FP = Financial Performance (EPS, earnings per share and SP, share price)

ESG_{Env} = Environmental factors

ESG_{Soc} = Social factors

ESG_{Gov} = Governance factors

ϵ = Error term

3.4 Estimation Technique

Panel regression analysis is used to assess the relationship between ESG variables and financial performance metrics. Diagnostic tests, including multicollinearity and heteroskedasticity checks, are conducted to ensure robustness.

4.0 RESULTS AND DISCUSSION

4.1 Descriptive Statistics

Summary statistics presented in Table 1 revealed the level of ESG adoption across firms, highlighting variations in sustainability disclosures.

Table 1: Descriptive Statistics

Descriptive Statistics					
	N	Min.	Max.	Mean	Std. Dev
EPS	88	-20.76	49.96	8.61	12.71
SP	88	3.70	313.50	103.9	89.92
E-Score	88	2	8	4.20	1.487
S-Score	88	2	8	3.61	1.458
G-Score	88	3	8	5.18	1.282
Valid N (listwise)	88				

4.2 Correlation Analysis

Table 2 presents the correlation matrix, which indicates that earnings per share (EPS) has a significant and positive correlation share price (SP). However, the correlation between EPS and other variables is insignificant. On the other hand, considering E-score and S-score, Table 2 indicates that these two independent variables significantly correlate. Similarly, G-score and S-score significantly correlated.

Table 2: Correlation Matrix

Correlations		EPS	SP	E-Score	S-Score	G-Score
EPS	Pearson Correlation	1.000				
	Sig. (2-tailed)					
SP	Pearson Correlation	.620**	1.000			
	Sig. (2-tailed)	.000				
E-Score	Pearson Correlation	.055	.146	1.000		
	Sig. (2-tailed)	.611	.174			
S-Score	Pearson Correlation	-.200	-.089	.610**	1.000	
	Sig. (2-tailed)	.061	.407	.000		

Enhancing Corporate Success Through the Business Sustainability Model: An Empirical Analysis of the Impact of ESG Factors on the Financial Performance of Oil and Gas Firms in Nigeria

G-Score	Pearson Correlation	-.186	-.082	.131	.278**	1.000
	Sig. (2-tailed)	.083	.449	.224	.009	
	N	88	88	88	88	88

** . Correlation is significant at the 0.01 level (2-tailed).

4.3 Multicollinearity Test

Table 3 confirms that multicollinearity is not a concern, as all Variance Inflation Factors (VIF) are below the threshold of 10 (Hair *et al.*, 2019). S-Score has the highest VIF at (1.699), while G-Score has the lowest at 1.086, indicating minimal collinearity. Tolerance values above 0.7 further support the absence of multicollinearity issues.

Table 3: Collinearity Check

Coefficients ^a		Collinearity Statistics	
Model		Tolerance	VIF
1	E-Score	.627	1.596
	S-Score	.588	1.699
	G-Score	.920	1.086

a. Dependent Variable: EPS

4.3 Regression Analysis

Empirical results demonstrate a positive impact of governance on EPS, suggesting that strong governance structures enhance profitability. However, environmental investments have a lagged effect on financial outcomes, indicating that sustainability initiatives require long-term commitment.

Table 4 shows panel EGLS (Cross-section random effects) regression, which examines the influence of Environmental (E_SCORE), Social (S_SCORE), and Governance (G_SCORE) factors on Earnings Per Share (EPS) of firms, using data from 11 cross-sectional units over 8 periods (88 observations total). The constant term is positive and nearly significant at the 10% level, suggesting that in the absence of ESG scores, firms tend to have a base EPS of approximately 10.43. While this intercept is not the main focus, it establishes a baseline. This result is statistically significant at the 5% level, indicating that a one-unit increase in environmental performance is associated with a 2.03 increase in EPS. This suggests that environmentally sustainable practices enhance profitability, supporting the business case for sustainability.

Enhancing Corporate Success through the Business Sustainability Model, the role of environmental sustainability is emphasized in driving long-term financial performance. For example, firms that invest in energy efficiency, emission reduction, and sustainable resource usage tend to gain stakeholder trust, reduce operational risks, and appeal to environmentally conscious investors. Khan *et al.* (2016), which shows a positive association between material sustainability performance and financial returns, aligning with the empirical findings in your model.

The social score shows a negative but statistically insignificant effect on EPS. This may imply that social initiatives (like community engagement, employee relations, or diversity programs) are not directly linked to immediate profitability within the study period or sample.

It is noted that while social sustainability is important for corporate reputation and stakeholder engagement, its financial impact may be more long-term or indirect. Eccles *et al.* (2014), which found mixed short-term effects but noted that companies with strong social performance tend to outperform over longer horizons. This could explain the insignificant result in a shorter or medium-term panel setup.

The governance score also shows a negative effect on EPS, significant at the 10% level. Although counterintuitive, this result could suggest that increased governance controls might initially constrain profitability due to compliance costs or managerial limitations. The report references that while good governance is crucial for risk management and investor confidence, excessive or rigid governance frameworks might burden operational agility, especially in emerging markets. Aguilera *et al.* (2007), warn of diminishing returns from over-regulation in governance structures. This may help explain the marginally negative effect on EPS. The overall model explains about 4.2% of the variation in EPS, with the F-statistic nearing significance at the 10% level. This indicates a modest but noteworthy explanatory power, suggesting other variables beyond ESG scores may also affect EPS.

Enhancing Corporate Success Through the Business Sustainability Model: An Empirical Analysis of the Impact of ESG Factors on the Financial Performance of Oil and Gas Firms in Nigeria

The results suggest that environmental sustainability practices significantly enhance firm profitability (EPS), validating the environmental component of the business sustainability model. In contrast, social and governance dimensions show weaker or negative short-term effects, indicating their potential indirect or long-term impact on financial performance.

Table 4: Panel EGLS Results on EPS

Dependent Variable: EPS

Method: Panel EGLS (Cross-section random effects)

Date: 04/04/25 Time: 05:58

Sample: 1 88

Periods included: 8

Cross-sections included: 11

Total panel (balanced) observations: 88

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.43157	5.538090	1.883604	0.0631
E_SCORE	2.028947	0.916698	2.213323	0.0296
S_SCORE	-0.736999	1.138091	-0.647575	0.5190
G_SCORE	-1.482116	0.896726	-1.652807	0.1021

Effects Specification		S.D.	Rho
Cross-section random		5.201635	0.2161
Idiosyncratic random		9.906170	0.7839

Weighted Statistics			
R-squared	0.075267	Mean dependent var	4.813876
Adjusted R-squared	0.042241	S.D. dependent var	10.79595
S.E. of regression	10.56548	Sum squared resid	9376.860
F-statistic	2.279004	Durbin-Watson stat	1.616640
Prob(F-statistic)	0.085361		

Unweighted Statistics			
R-squared	0.056458	Mean dependent var	8.619068
Sum squared resid	13266.75	Durbin-Watson stat	1.142632

4. 2 Hausman Test

The Hausman test result, with a Chi-square statistic of 14.55 and a p-value of 0.0022, indicates that the null hypothesis (which assumes that the random effects model is appropriate) should be rejected in favour of the fixed effects model. This suggests that there is a correlation between the unobserved effects and the regressors, violating the assumptions of the random effects model. Specifically, the significant differences in coefficients between the fixed and random effects estimates for S_SCORE ($p = 0.0006$) and G_SCORE ($p = 0.0409$) further reinforce this conclusion, as these variables exhibit non-negligible variances in their estimated effects across the two models. Consequently, the fixed effects model is more reliable for interpreting the relationship between ESG components and Financial performance (earnings per share (EPS) and share price (SP), as it accounts for heterogeneity across firms that might otherwise bias the results in a random effects framework.

Enhancing Corporate Success Through the Business Sustainability Model: An Empirical Analysis of the Impact of ESG Factors on the Financial Performance of Oil and Gas Firms in Nigeria

Table 5: 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	14.553346	3	0.0022

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
E_SCORE	1.959309	2.028947	0.013869	0.5543
S_SCORE	1.576744	-0.736999	0.450664	0.0006
G_SCORE	-1.944416	-1.482116	0.051104	0.0409

Cross-section random effects test equation:

Dependent Variable: EPS

Method: Panel Least Squares

Date: 04/04/25 Time: 05:59

Sample: 1 88

Periods included: 8

Cross-sections included: 11

Total panel (balanced) observations: 88

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.758894	5.562633	0.855511	0.3950
E_SCORE	1.959309	0.924231	2.119934	0.0374
S_SCORE	1.576744	1.321330	1.193301	0.2366
G_SCORE	-1.944416	0.924782	-2.102566	0.0389

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.483536	Mean dependent var	8.619068
Adjusted R-squared	0.392806	S.D. dependent var	12.71282
S.E. of regression	9.906170	Akaike info criterion	7.569103
Sum squared resid	7261.783	Schwarz criterion	7.963225
Log likelihood	-319.0405	Hannan-Quinn criter.	7.727885
F-statistic	5.329382	Durbin-Watson stat	2.046061
Prob(F-statistic)	0.000001		

Based on the outcome of the Hausman text, the appropriate model, Fixed Effect Model (FEM) was used for the subsequent analyses, interpretation and discussion of findings. The results from the fixed effects model shown in Table 6 reveal a nuanced relationship between Environmental, Social, and Governance (ESG) performance and Earnings Per Share (EPS) of the sampled firms. Specifically, E_SCORE (Environmental score) shows a positive and statistically significant effect on EPS ($\beta = 1.959$, $p = 0.0374$),

Enhancing Corporate Success Through the Business Sustainability Model: An Empirical Analysis of the Impact of ESG Factors on the Financial Performance of Oil and Gas Firms in Nigeria

suggesting that better environmental practices contribute to higher profitability. This aligns with Al-Tuwaijri et al. (2004), who found that firms with superior environmental performance also achieved stronger financial outcomes. Similarly, Bae et al. (2018) asserted that environmental efficiency is increasingly being rewarded by investors, translating into improved firm value.

On the other hand, S_SCORE (Social score), while positive ($\beta = 1.577$), is statistically insignificant ($p = 0.2366$), indicating that social factors like employee welfare and community engagement do not have a strong or consistent impact on EPS in this sample. This is in contrast with Loftsgarden (2020) and Ortas et al. (2015), who found a positive association between social responsibility and firm value in developed markets, suggesting that such impact may be context-dependent or lagged in emerging markets like Nigeria.

Conversely, G_SCORE (Governance score) is negatively and significantly associated with EPS ($\beta = -1.944$, $p = 0.0389$), an unexpected outcome since sound governance is typically believed to enhance firm performance. However, this may reflect short-term compliance costs, bureaucratic rigidity, or ineffective governance frameworks not yet aligned with profitability imperatives. This finding contrasts with Bhagat & Bolton (2008), who established that good governance positively influences firm performance, suggesting that governance practices in the studied firms may be poorly implemented or merely symbolic.

The model's R-squared of 0.48 indicates that about 48% of the variation in EPS is explained by the ESG factors and firm-specific effects, which is relatively strong for panel data analysis. The Durbin-Watson statistic of 2.05 suggests no significant autocorrelation in the residuals. Overall, the results support the notion that environmental initiatives are the most financially beneficial aspect of ESG for the firms studied, while governance practices may currently be counterproductive, potentially due to weak enforcement or poor alignment with strategic goals. This underscores the need for context-specific ESG strategies that reflect institutional realities in Nigeria, as supported by previous studies ().

Table 6: Regression of EPS on ESG Factors

Dependent Variable: EPS				
Method: Panel Least Squares				
Date: 04/04/25 Time: 06:00				
Sample: 1 88				
Periods included: 8				
Cross-sections included: 11				
Total panel (balanced) observations: 88				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.758894	5.562633	0.855511	0.3950
E_SCORE	1.959309	0.924231	2.119934	0.0374
S_SCORE	1.576744	1.321330	1.193301	0.2366
G_SCORE	-1.944416	0.924782	-2.102566	0.0389
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.483536	Mean dependent var	8.619068	
Adjusted R-squared	0.392806	S.D. dependent var	12.71282	
S.E. of regression	9.906170	Akaike info criterion	7.569103	
Sum squared resid	7261.783	Schwarz criterion	7.963225	
Log likelihood	-319.0405	Hannan-Quinn criter.	7.727885	
F-statistic	5.329382	Durbin-Watson stat	2.046061	
Prob(F-statistic)	0.000001			

Table 7 reveals that among the three dimensions of ESG (Environmental, Social, and Governance), only the Environmental Score (E_SCORE) shows a positive and statistically significant relationship with the dependent variable—presumably a financial performance metric such as firm value or return (though not explicitly stated in this table). The coefficient of E_SCORE is 14.12 (p

Enhancing Corporate Success Through the Business Sustainability Model: An Empirical Analysis of the Impact of ESG Factors on the Financial Performance of Oil and Gas Firms in Nigeria

= 0.0349), indicating that improvements in environmental practices are associated with substantial gains in firm performance. This result is in strong agreement with empirical findings from prior studies like Al-Tuwaijri et al. (2004) and Friede, Busch & Bassen (2015), who consistently observed a positive link between environmental sustainability and firm performance, particularly in firms that proactively manage environmental risks and comply with environmental regulations.

In contrast, the Social Score (S_SCORE) and Governance Score (G_SCORE) are statistically insignificant ($p = 0.6043$ and $p = 0.5382$ respectively), and in the case of governance, the coefficient is even negative ($\beta = -4.06$). These findings suggest that, for the sampled firms, investments in social initiatives (such as employee welfare or community engagement) and governance reforms (such as board independence or transparency) are not directly translating into measurable financial returns. This finding may be interpreted in light of Lo & Sheu (2007) and Orlitzky et al. (2003), who acknowledge that while ESG practices can enhance reputation and risk management, their financial impact often depends on stakeholder perception, time lags, or the specific national institutional framework.

The relatively high R-squared value of 0.48 suggests that ESG dimensions and firm-specific effects collectively explain 48% of the variability in firm performance, which is relatively robust in panel data contexts. The Durbin-Watson statistic of 1.95 indicates that autocorrelation is not a major concern. These findings, in line with parts of the uploaded literature, indicate that environmental sustainability efforts are the most impactful aspect of ESG for Nigerian firms at this point, while social and governance components may require better structuring, enforcement, or longer time horizons to yield tangible financial benefits. This underscores the need for policy and managerial alignment to unlock the full potential of ESG investments in emerging markets.

Table 7: Regression of SP on ESG Factors

Dependent Variable: SP

Method: Panel Least Squares

Date: 04/06/25 Time: 15:56

Sample: 1 88

Periods included: 8

Cross-sections included: 11

Total panel (balanced) observations: 88

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	48.01103	39.53872	1.214279	0.2285
E_SCORE	14.11578	6.569356	2.148732	0.0349
S_SCORE	4.887636	9.391903	0.520410	0.6043
G_SCORE	-4.064736	6.573275	-0.618373	0.5382
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.478489	Mean dependent var	103.9609	
Adjusted R-squared	0.386873	S.D. dependent var	89.92339	
S.E. of regression	70.41221	Akaike info criterion	11.49152	
Sum squared resid	366883.1	Schwarz criterion	11.88564	
Log likelihood	-491.6269	Hannan-Quinn criter.	11.65030	
F-statistic	5.222729	Durbin-Watson stat	1.949269	
Prob(F-statistic)	0.000002			

4.4 Discussion of Findings

The objective of this study was to examine the influence of environmental, social, and governance (ESG) performance indicators on earnings per share (EPS) and corporate success of listed firms in Nigeria. Using panel data estimation methods (Fixed Effects and Random Effects), the study derived insights into how ESG variables individually and collectively impact firm performance. The

Enhancing Corporate Success Through the Business Sustainability Model: An Empirical Analysis of the Impact of ESG Factors on the Financial Performance of Oil and Gas Firms in Nigeria

discussion is structured based on the significance of each ESG dimension and interpreted through relevant theoretical lenses and prior empirical studies documented in the literature.

4.4.1 Environmental Score and Corporate Performance

The environmental score (E_SCORE) consistently demonstrated a positive and statistically significant relationship with firm performance across all regression models. In the Fixed Effects Model (EPS as the dependent variable), the coefficient for E_SCORE was 1.96 with a p-value of 0.0374, suggesting that an increase in environmental performance is associated with improved earnings per share. Similarly, in the broader model evaluating corporate performance (share price), E_SCORE maintained a significant positive coefficient of 14.12 ($p = 0.0349$), reinforcing the argument that firms prioritizing environmental responsibility tend to perform better financially.

This result is theoretically supported by the Stakeholder Theory (Freeman, 1984), which posits that firms that recognize and act upon the interests of broader stakeholder groups—including environmental constituents—gain legitimacy, loyalty, and support that enhances performance. Empirically, the findings are consistent with Al-Tuwaijri et al. (2004), who found that superior environmental performance is positively related to both better financial performance and high-quality environmental disclosures. Friede, Busch, and Bassen (2015), in a meta-analysis of over 2,000 empirical studies, also concluded that environmental sustainability has a strong and stable positive relationship with financial performance. The document uploaded further strengthens this claim, highlighting that firms that invest in environmental protection not only manage regulatory and reputational risks better but also foster operational efficiencies through energy savings, waste reduction, and innovation-driven cost advantages.

These findings imply that in Nigeria, environmental sustainability is increasingly becoming a key strategic lever through which firms drive competitive advantage, access green capital, and enhance shareholder value.

4.4.2 Social Score and Corporate Performance

The social score (S_SCORE), while positive in direction, failed to reach statistical significance across both EPS and SP regressions. For instance, in the EPS regression under the Fixed Effects model, S_SCORE had a coefficient of 1.5767 with a p-value of 0.2366, while in the SP model it showed 4.8876 with a p-value of 0.6043, indicating an inconclusive impact.

This finding invites reflection through the lens of the Resource-Based View (RBV), which suggests that intangible resources—such as reputation and human capital—should confer competitive advantages. However, the effectiveness of social investments depends heavily on the quality of implementation and perception. If social practices (e.g., community development, workforce diversity, employee well-being) are not strategically aligned with core business objectives or are poorly communicated, their potential financial value may not materialize or be captured in traditional performance metrics like EPS and SP.

Empirical literature presents a mixed view. While Orlitzky et al. (2003) reported a generally positive correlation between social responsibility and financial performance, they also emphasized the variability of results across industries and regions. Previous studies echoed this ambiguity, pointing out that in the Nigerian context, many firms engage in CSR practices for compliance or publicity rather than value creation, which may explain the weak statistical association observed.

This suggests a need for Nigerian firms to move beyond token social responsibility efforts and embed social sustainability into the fabric of human resource management, supply chain operations, and brand identity if meaningful financial returns are to be achieved.

4.4.3 Governance Score and Corporate Performance

Interestingly, the governance score (G_SCORE) was negatively related to earnings per share and share price in both models, and the relationship was statistically significant in the EPS regression (coefficient = -1.9444, $p = 0.0389$). This contradicts mainstream expectations and theoretical positions such as the agency theory (Jensen & Meckling, 1976), which advocates that strong governance mechanisms reduce agency costs, improve monitoring, and lead to superior firm outcomes.

A plausible explanation may lie in the contextual realities of Nigeria's corporate governance environment. Literature aptly highlights the problem of form over substance in corporate governance in Nigeria—where governance structures are often present in name but not in practice. Board independence, gender diversity, and audit committee activities may be weakly enforced, thereby failing to translate into real oversight or strategic guidance. Worse still, governance reforms may incur high compliance costs or disrupt internal power dynamics, thereby reducing short-term profitability.

Empirically, while studies such as Brown and Caylor (2006) and Tshipa & Mokoaleli-Mokoteli (2015) have shown positive links between governance and financial performance, recent African studies—including those cited in the uploaded document—report mixed results. For instance, Egbunike and Okerekeoti (2018) found that certain governance indicators were not significantly related to profitability among listed Nigerian firms, reinforcing the idea that local institutional quality and enforcement mechanisms are crucial moderating variables.

Enhancing Corporate Success Through the Business Sustainability Model: An Empirical Analysis of the Impact of ESG Factors on the Financial Performance of Oil and Gas Firms in Nigeria

This highlights the importance of moving beyond superficial governance checklists to ensuring genuine board independence, accountability, and alignment of managerial incentives with shareholder interests.

The overall model fit, as indicated by the R-squared values (ranging from 0.39 to 0.48 across models), suggests that ESG scores—alongside firm-specific fixed effects—explain a substantial portion of variation in firm performance. The Durbin-Watson statistics (approximately 1.95–2.05) also indicate the absence of severe autocorrelation, supporting the reliability of the regression outputs. The Hausman test results further validate the appropriateness of the Fixed Effects model, as the Chi-square value of 14.55 with a p-value of 0.0022 rejects the null hypothesis that the Random Effects model is more consistent.

These robustness checks reinforce the conclusion that ESG dimensions—especially environmental performance—are not only relevant but also statistically significant predictors of firm success in the Nigerian context.

4.4.4 Implications for Policy and Practice

The findings have profound implications. For corporate managers, there is a clear incentive to prioritize environmental sustainability, not merely as a compliance requirement but as a core strategic priority that can enhance profitability and long-term viability. For investors and regulators, the evidence supports the use of ESG scores—especially environmental indicators—as a screening tool in investment and supervisory decisions.

For policy makers, the challenge lies in strengthening the institutional frameworks that support governance and social sustainability, ensuring that ESG reporting is standardized, verifiable, and tied to firm outcomes.

This discussion underscores the nuanced role of ESG performance in influencing corporate success in Nigeria. Environmental practices have shown the most consistent and positive relationship with firm performance, while the social and governance dimensions require stronger institutional support and integration to yield measurable benefits. These findings contribute to the broader literature by validating the Business Sustainability Model within a developing country context and call for a more strategic, data-driven, and stakeholder-oriented approach to ESG integration in corporate Nigeria.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study examined the impact of environmental, social, and governance (ESG) performance on corporate success, proxied by earnings per share (EPS) and share price (SP), among listed oil and gas firms in Nigeria. Using panel data from 8 firms across 11 periods, the analysis revealed that environmental sustainability initiatives significantly enhance firm performance. The environmental score was positively and significantly associated with EPS and broader financial outcomes, indicating that firms that prioritize ecological stewardship are more likely to achieve long-term profitability and operational success. Conversely, the social and governance scores did not show consistent or significant impacts, with governance even revealing a negative and significant association with EPS.

These findings reinforce the relevance of the Business Sustainability Model in explaining corporate outcomes in emerging economies. However, they also suggest that while environmental practices are yielding positive returns, social and governance practices in Nigeria may lack depth or strategic alignment to impact firm performance effectively. Weak institutional enforcement, superficial adoption of governance codes, and disjointed social responsibility initiatives may account for these discrepancies. Thus, the study concludes that sustainability must be integrated not only at the strategic level but also in execution, monitoring, and stakeholder engagement.

5.2.1 Recommendations

- i. *Environmental Sustainability* initiatives should be prioritized. Firms should invest more in environmentally sustainable practices such as green innovation, emission reduction, and energy efficiency, which have proven to significantly impact performance.
- ii. *Governance Structures* should be reformed: Boards of directors must move beyond symbolic compliance to genuine oversight and accountability. Regulatory bodies should enforce corporate governance codes with stricter penalties for non-compliance.
- iii. *Social Investments* should be strategic: Social responsibility programs should be aligned with the core business strategy and designed to create shared value for both firms and stakeholders.

5.3 Recommendations for Future Research

Further studies should explore industry-specific ESG frameworks and assess the impact of sustainability policies on firm survival during economic downturns.

Enhancing Corporate Success Through the Business Sustainability Model: An Empirical Analysis of the Impact of ESG Factors on the Financial Performance of Oil and Gas Firms in Nigeria

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