



ENVIRONMENTAL, SOCIAL, AND GOVERNANCE REPORTING EVIDENCING FIRM PERFORMANCE IN EMERGING ECONOMY.

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ABSTRACT: Companies are owned by an array of stakeholders with varying interests due to separation of ownership from control. Investors are skeptical about the reliability of the annual report. The continuing demand for transparency led to the adoption of Environmental, Social and Governance (ESG) reporting to communicate firms' sustainability efforts with a view to restoring stakeholders' confidence. This study examined the influence of ESG reporting on the performance of listed manufacturing firms in Nigeria for the period 2013-2022 and employed trade-off theory for theoretical support. The 3 Stage Least Squares (3SLS) results showed that on the aggregate, the coefficient of the ESG index on Tobin's Q is -5.748, with a p -value of 0.000, indicating that ESG disclosure leads to a reduction in firm value. The coefficient of the ESG index on ROA is 71.265, with a p -value of 0.000, suggesting improvement in profitability. It was recommended that managers should be decisive on the motivations for engaging in ESG initiatives.

KEYWORDS: ESG reporting, Impact, Principle for responsible investment, Transparency.



INTRODUCTION

Corporate reporting practices, specifically environmental, social, and governance (hereafter, ESG), are a subject of debate in the academics, owing to rapid changes in the business environment and implications for the firm's overall performance. The business environment may be described as the summation of internal and external factors that enables a firm to build, retain, expand and sustain a business relationship. It is inundated with lots of information bordering on risk, globalization, population explosion, heat waves, environmental degradation, and climate change, which constitute threats to business survival, thus increasing investors' concerns about the safety of investment and firm performance. It is not in doubt that business continuity, growth, and survival are contingent on the accuracy and reliability of information provided by managers. Thus, investors demand credible information to evaluate risk with a view to taking an informed economic decision in tandem with the concept of sustainability, which is about the quest for an enduring future. Corroborating this assertion, Firmansyah, Umar, and Jibril (2023) citing Kalia and Aggarwal (2022), said that investors are more curious about their investments and the way resources were used, particularly as it affects ESG programs.

In furtherance of letting investors be aware of the possibilities in the business world, the United Nations Environment Program Finance Initiative (UNEPFI) and the United Nations Global Compact (UNGC) developed a framework known as the Principles for Responsible Investment framework (PRI, 2017) to enable investors to behave responsibly in investment choices they made. Businesses are differentiated based on sustainability strategy and the diverse range of decisions made in relation to sustainable development. For instance, investors who placed a premium on environmental cleanliness, social security and ethical conduct are fascinated by firms with high commitment to ESG programs as a testament to their sensitivity to financial transparency and accountability in the millennial age. Sustainable efforts, disposition and action-driven responses to environmental cum social infractions by firms are capable of influencing decisions made by investors. Accordingly, legitimacy theory posits that firms may gain public acceptance over its conduct through adoption and implementation of ESG initiatives, and also benefit from being sensitive to the environment and society alike. In like manner, firms' products may be tactically screened out by investors for being insensitive and lacking regard for ethical considerations (Brammer, 2005). The ESG framework protects stakeholders by assuaging their concerns and meeting their specific expectations (Chouaibi & Chouaibi, 2020). Ferrero-Ferrero, Fernández-Izquierdo, and Muñoz-Torres (2016) assert that in the long run, timely response to stakeholders' concerns may usher in greater benefits in terms of customer loyalty, brand reputation, risk management and cost saving (Ferrero-Ferrero et al., 2016).

Managers are therefore charged to integrate sustainable initiatives into business strategies and provide credible information capable of strengthening sustainable capacity in order to mitigate risk and enhance firm performance. Investors' satisfaction stimulates investment growth, leading to improved firm performance in the long run. McGahan (2021) maintained that investors would only continue to sustain relationships with businesses as long as their interest in regular payment of dividends is sustained. On the other hand, a firm may experience a decrease in performance if its activities are in clear violation of a tenet of sustainable development. Chouaibi and Chouaibi (2020) predicted negative consequences for a company or country whose attitudes to ESG practice are poorly rated.



In the literature, it is generally presumed that ESG practices improved firm valuation (Xie et al., 2019; Abdi et al., 2022; Naeem et al., 2022; Aydoğmus et al., 2022). Naeem et al. (2022) assert that availability of resources and robust stakeholder engagement stimulate ESG performance and produce positive feedback. However, dissenting opinions exist over the appropriateness or otherwise of the adoption and implementation of ESG initiatives (Brammer 2005; Duque-Grisales & Aguilera-Caracuel, 2019; Firmansyah et al. 2023). Firmansyah et al. (2023) posited that enterprise resources should not be allocated to activities that benefit no one but to promote shareholders' overall success. The author perceived as wasteful and a misplaced priority the allocation of resources to sustainable programs because it contradicts the firm's core mandate of wealth maximization. From the above submissions, we inferred that attempts by firms to build corporate reputation through sustainability ideals may be counterproductive because they may increase overall administrative costs, which in turn reduces firm value.

The motivation for this study is premised on the gaps identified in existing studies. Prior studies on sustainability disclosure focused on the linear relationship between sustainable practices and firm performance. In most cases, the concept was broken into components and was examined in different capacities as ESG components rather than on the aggregate. Further, the choice of individual components was at managers' discretion due to the absence of a regulatory framework. Given the above observations, this study investigates the impact of ESG disclosure on performance beyond linearity by establishing a bi-directional relation between ESG reporting and firm performance using the instrumental variable estimation approach. We provided evidence that ESG reporting impacts firm performance, and performance also influences ESG disclosure, suggesting the presence of a simultaneous relationship.

The rest of the paper follows this order: Section 2 gives insights into literature review and hypothesis formulation; Section 3 presents theoretical basis; Section 4 provides the research methods; Section 5 the research findings and discussion; Section 6 Conclusion; and Section 7 Limitation of the study.

LITERATURE THEORETICAL UNDERPINNING

We acknowledged diverse theoretical frameworks that have provided support to discussions around sustainability and firm performance. Shareholders' theory, propounded by Friedman (1962), opined that enterprise resources should exclusively be devoted to shareholders to promote corporate objectives consistent with their interests. Firmansyah et al. (2023) argued that firms' resources should be the exclusive right of shareholders for the purposes they were so intended. Stakeholder theory as propounded by Donaldson and Preston (1995) argue that managers should factor into consideration the interests of other relevant groups who are part of the entity in their decisions and are not entirely focusing on shareholders' well-being. Freeman (1984) proposed that good management practice exists when firms encourage managers to act with consideration to various groups and individuals. He stressed that strategic management could help firms survive in turbulent times if they understand the stakeholder concept and management. The theory has garnered wider acceptability in literature, with a consensus that resource allocation to diverse groups increases firm value. Studies by Naeem et al. (2022), Aboud (2018), Chouaibi and Chouaibi (2020), and Abdi et al. (2022) provided empirical evidence in support of stakeholder theory. Aboud (2018) reviewed the literature on the concept of the stakeholder and posited that the ESG disclosure acts as a resolution tool to



address multiple stakeholders' concerns. Chouaibi and Chouaibi (2020) found ESG initiatives as a unifying factor to manage complex relationships across stakeholders' groups that may or may not be affected by the firm.

Despite the above propositions, the current study leaned on trade-off theory for theoretical support. Trade-off theory involves selection between several alternatives whereby firms let go of something of value in exchange for something else or reach a compromise over conflicting situations. The theory realized that managers were under pressure in reaching conclusions over investment decisions with regard to the cost or benefit associated therein. There was the need to weigh the consequences of pursuing a sustainable program at the expense of shareholders' wealth maximization, and vice versa. The trade-off theory recognized that it could be a daunting task for managers to strike a balance between two opposing interests. Therefore, managers should strive to maximize the full benefits of available resources by ensuring that resources are allocated to improve firm performance in the short run without being at a disadvantage in the long run. In the words of Tarawneh et al. (2024), firms need to be decisive in the choices they make by weighing the consequences of their actions both at the moment and in the long run. To the authors, firms should consider their readiness to accept low reward in the short run while engaging in ESG practices. The theory is deemed appropriate for the current study because it painted a real-life scenario of how managers struggled to satisfy shareholders' interests without any harm to other stakeholder groups whose interests were not visible in the short run.

Several studies on the relation between ESG practices and firm performance have produced similar results on the aggregate but mixed results at disaggregated levels, respectively. Naeem et al. (2022) investigate the impact of ESG performance on financial performance in the developed and emerging economies with a sample of 383 firms for the period 2009-2018. They found out that aggregate ESG improved firm value and profitability in both economies. Also, the ESG controversy produced a positive impact on valuation, suggesting that firms got rewarded in recognition of their efforts at mitigating risk through ESG practices despite having contravened the law; thus, they witnessed improved firm value. Similarly, Aydoğmuş et al. (2022), focusing on public firms, analyzed the performance of 1,720 firms for the period 2013-2021. The panel results showed that overall ESG enhanced firm valuation and profitability. A similar result was obtained for social and governance scores, while environmental score is positively associated with profitability. Using a case study of South African listed firms between 2015 and 2019, Chininga and Alhassan (2023) found a positive association between ESG ratings and firm performance. In the same manner, Xie et al. (2019) found a non-linear positive association between ESG and firm performance at a moderate level across 74 countries. The governance score made the highest contribution to firm performance, which could be attributed to effective monitoring by the board charged with the governance mechanism. With the mixed outcome at various periods, it is an indication that timing is of importance in the relationship.

Similarly, Ahmad et al. (2021) adopted mixed methods analysis to unravel the impact of ESG indicators on firm performance of 351 firms listed on FTSE 350 Exchange spanning 2002-2018. The results indicate that ESG practices improved performance. Using structural equation model (SEM), Chouaibi and Chouaibi (2020) considered moderating effect of innovation and law on the nexus between ESG and corporate financial performance with the sample comprising 115 UK, and 90 German firms spanning 2005-2019. The results indicate that ESG practices influenced financial performance and green innovation, at the same time, innovation



intensity also moderated the relationship. With emphasis on European countries, Tahmid et al. (2022) documented an improvement in firm value and performance following ESG initiative adoption. Buallay (2020) adopted the fixed effect method and found that ESG disclosure improved firm performance in the manufacturing industry, while the banking industry experienced a decline in performance, suggesting sectorial differences. An empirical study by Desai (2024) discovered that disclosure tends to lower information asymmetry to secure stakeholders' trust and, in the process, enhance firm value. Meanwhile, the analysis further revealed that non-sensitive companies made a more significant contribution to the performance recorded than carbon-sensitive companies with low stock prices for failing to reduce their beta due to high environmental impact. This is an indication that industry classification is crucial in determining value creation via ESG. These favorable responses suggest that ESG practices are crucial to firm survival in the long run as a value creation mechanism regardless of the differences in specific contexts, including country, economy, sector and even market.

On the contrary, Duque-Grisales and Aguilera-Caracuel (2019) document a negative correlation between ESG score and firm performance among listed Multilatinas firms in Latin America. Likewise, Firmansyah et al. (2023) used the Generalized Method of Moments (GMM) estimator to examine 26 listed firms in Saudi Arabia for the duration of 2010-2020 and reported that aggregate ESG disclosure increases expenditure profile and, by extension, lowers firm value. Brammer (2005) attests that socially responsible firms experienced a reduction in stock returns using a set of 451 UK firms. Finally, Tarawneh et al. (2024) document a reduction in firm value among non-financial firms listed in the UK, while noting an insignificant association with profitability. Given the absence of consensus by existing studies, we further contend that traditional investment models are no longer adequate and sufficient in evaluating firm performance in view of increasing awareness about ESG value creation capacity in the long run. Moreover, the world is evolving, and businesses are not left out of rapid transformation. Therefore, firms can no longer be unattuned to global development towards an enduring and sustainable future. We thus proposed the following hypothesis:

H1: Overall ESG is significantly associated with firm performance

Previous studies on environmental disclosure have produced mixed results. For instance, Chininga and Alhassan (2023) reported the existence of a significant association between environmental scores and financial performance, which is in tandem with the submission of Abdi et al. (2022), who claimed that environmental awareness improved financial performance of the aviation industry. Likewise, Aydogmus et al. (2022), and Naeem et al. (2022) reported significant association between disclosure and firm performance on a positive note respectively.

Given the inconsistency of findings, the following hypothesis is proposed:

H2: Environmental initiatives impact firm performance

Investors are of diverse interests. They channeled their resources to firms whose goals and objectives were in tandem with their philosophy. The socially conscious investors adopt social criteria as a benchmark for the company's performance. For instance, employee well-being, labor relations, human rights, equal opportunities, corruption, etc. are some of the related social criteria. This means that social engagement can be a yardstick for determining sustainable efforts of firms and possible implications for firm performance. Prior studies by Aydogmus et



al. (2022), Firmansyah et al. (2023), and Abdi et al. (2022) provided mixed findings on the association between social score and firm value. We thus proposed as follows:

H3: Social initiatives influence firm performance

The governance structure of a firm is crucial to her commitment to ESG initiatives. The composition of the board could be a major determinant of her disposition towards a sustainable future. There had been reports of cases where inclusion of the female gender on board had led to improved performance. The age and qualification of directors have also produced mixed results in relation to sustainable development. A study by Abdi et al. (2022) documented a positive association between governance practice and financial performance of the selected aviation industry. Similarly, Firmansyah et al. (2023) found the influence of governance on the performance of 26 Saudi Arabian firms between 2010 and 2020, lending credence to the importance of good governance on sustainable endeavors. In the light of this, we proposed as follows:

H4: Governance initiatives is positively associated with firm performance

METHODOLOGY

Data, Sample and Measurements of Variables

The study obtained ESG scores and financial data relating to the period 2013-2022 from annual reports publicly available on the Nigeria Exchange Group (NGX) and corporate websites. The sample size was restricted to non-financial firms due to the complex regulatory requirements of financial institutions. The selection process ensured that firms whose shares were not listed on the floor of the Exchange for the period under review were eliminated from the sample, and at the end, 76 non-financial firms for 2013-2022 were selected.

Dependent Variables

In this study, we proxy firm performance as both Tobin's Q and Return on Assets (ROA), respectively. The choice of Tobin's Q, aside from being a market-based measure, was informed by ease of computation and comparison of firms irrespective of size. It considers the replacement cost of the total assets of the firms in the long run. It has equally been widely adopted by prior studies (Abdi et al., 2022; Aydogmus et al., 2022; Naeem et al., 2022; Giannopoulos et al., 2022; Aboud & Diab, 2018; Xie, Nozawa et al., 2018; Fatemi et al., 2017). Tobin's Q was measured as total equity of common shares plus market value scaled by total assets. Similarly, Return on Assets (ROA) evaluates the use to which firms' resources, particularly assets have been put and utilized to generate returns. It is a measure of managerial efficiency and is computed mathematically as income after tax scaled by total assets multiplied by 100. Both Tobin's Q and ROA are used frequently in the literature to measure firm performance.



Independent Variables

ESG is a set of guiding principles across the globe intended to evaluate and improve corporate sustainability and impactful decision-making. ESG factors ethical considerations into firms' business models to balance profitability and corporate responsibility. It advocates for all-inclusive governance by ensuring that companies are not only responsible to providers of capital in terms of returns but should also consider the interests of other known actors that may be affected by the firms. These actors include the environment, employees, communities, customers, government, etc.

Global Reporting Initiatives (GRI, 2021) provided that there are currently seven (7) environmental issues, nine (9) social issues, and nineteen (19) governance issues. Environmental score represents companies' level of commitment towards the environment in an enduring and sustainable manner. Therefore, the company should maintain a balance in ensuring that the environment is not unduly affected by its operations. Waste management, alternative energy sources, reduction in pollution and improved technology that promote green initiatives should be of interest to firm managers for a sustainable planet. It is mathematically represented as follows:

$$\text{Envr. Scores} = \frac{\text{Proportion of environmental scores disclosed}}{\text{Total Number of environmental scores expected to be disclosed}}$$

The social score represents a company's level of commitment to the society where it operates. For a company to secure its legitimacy and acceptability, it is important that it operate within the norms, customs and beliefs of the community where it is located. Legitimacy theory posits that companies should formulate policies and strategies that are acceptable to the society and be ready to conduct their affairs in observance of the norms of the society where they operate. Where a company acts in defiance of community norms, reputational damage may arise with attendant implications on firm performance. Social score is computed thus:

$$\text{Social Scores} = \frac{\text{Proportion of social scores disclosed}}{\text{Total Number of social scores expected to be disclosed}}$$

The governance score evaluates firms' level of commitment towards accountability and transparency of operations by ensuring that their affairs are in line with the laid-down rules and regulations in the overall interest of shareholders (owners). Evidence abounds in literature of the positive influence of governance attributes on firm performance. Below is the mathematical representation of the model:

$$\text{Governance Scores} = \frac{\text{Proportion of governance scores disclosed}}{\text{Total Number of governance scores expected to be disclosed}}$$

Control Variables

The control variables are percentage of debt owned by a company (leverage), market capitalization (current market share price multiplied by total number of shares outstanding), and firm size as natural logarithm of total assets in tandem with prior studies of Firmansyah et al. (2023), Abdi et al. (2022), Naeem et al. (2022), and Giannopoulos et al. (2022).



Estimation Models

To estimate the possible relationship between non-financial reporting (ESG) practices and firm performances, we estimated the following models using STATA 17:

Model 1: This model aimed to evaluate the impact of non-financial reporting (ESG) on firm performance, with each variable assuming a dependent and independent role at a time.

$$\text{TobinQ}_{it} = \alpha_0 + \beta_1 \text{ESGIDX}_{it} + \beta_2 \text{Controls}_{it} + \varepsilon_{it} \quad (\text{Model 1})$$

$$\text{ESGIDX}_{it} = \alpha_0 + \text{TobinQ}_{it} + \beta_2 \text{Controls}_{it} + \varepsilon_{it} \quad (\text{Model 1.1})$$

$$\text{ROA}_{it} = \alpha_0 + \beta_1 \text{ESGIDX}_{it} + \beta_2 \text{Controls}_{it} + \varepsilon_{it} \quad (\text{Model 2})$$

$$\text{ESGIDX}_{it} = \alpha_0 + \beta_1 \text{ROA}_{it} + \beta_2 \text{Controls}_{it} + \varepsilon_{it} \quad (\text{Model 2.1})$$

where:

ESGIDX_{it} represents overall ESG performance scores of firm i at period t .

TobinQ_{it} represents firm valuation proxy as TobinQ

ROA_{it} represents firm performance measured as return on assets

Model 2 considers the effect of overall ESG on firm performance at a disaggregated level. The model becomes:

$$\text{TobinQ}_{it} = \alpha_1 + \beta_1 \text{Environmental}_{it} + \beta_2 \text{Controls}_{it} + \varepsilon_{it} \quad (\text{Model 3})$$

$$\text{TobinQ}_{it} = \alpha_1 + \beta_1 \text{Social}_{it} + \beta_2 \text{Controls}_{it} + \varepsilon_{it} \quad (\text{Model 4})$$

$$\text{TobinQ}_{it} = \alpha_1 + \beta_1 \text{Governance}_{it} + \beta_2 \text{Controls}_{it} + \varepsilon_{it} \quad (\text{Model 5})$$

$$\text{ROA}_{it} = \alpha_1 + \beta_1 \text{Environmental}_{it} + \beta_2 \text{Controls}_{it} + \varepsilon_{it} \quad (\text{Model 6})$$

$$\text{ROA}_{it} = \alpha_1 + \beta_1 \text{Social}_{it} + \beta_2 \text{Controls}_{it} + \varepsilon_{it} \quad (\text{Model 7})$$

$$\text{ROA}_{it} = \alpha_1 + \beta_1 \text{Governance}_{it} + \beta_2 \text{Controls}_{it} + \varepsilon_{it} \quad (\text{Model 8})$$

where:

$\text{Environmental}_{it}$ refers to environmental performance scores of firm i at period t ; Social_{it} represents social performance score of firm i at period t ; and Governance_{it} represents social performance score of firm i in period t ; Controls_{it} represents control variables of firm i at period t , which are the natural logarithm of total assets, the debt-to-equity ratio, and the current market share price multiplied by the total number of shares outstanding. ε_{it} refers to the random error term. Table 1 presents the variables' descriptions as used in the study, while Table 2 presents descriptive statistics of the variables. Shapiro and Wilkinson tested for data normality, while multicollinearity assumptions were tested using variance inflation factor (VIF).

**Table 1: Variables, acronyms, measurement and data source**

Variable	Indicator	Measurement	Data Source
<i>Dependent Variables</i>			
TobinQ	TOBINQ	Total equity of common share plus market value scaled by total assets	NGX
Return on Assets	ROA	Income after tax scaled by total assets	NGX
<i>Explanatory Variables</i>			
Overall ESG Index	ESGIDX	Overall ESG performance score of the companies	NGX
Environmental	ENV	Proportion of environmental performance scores of the companies	NGX
Social	SOC	Proportion of social performance scores of the companies	NGX
Governance	GOV	Proportion of governance performance scores of the companies	NGX
<i>Control Variables</i>			
Market Capitalization	MCAP	Current market share price multiply by the total number of shares outstanding	NGX
Leverage	LEV	Total debt to market value of equity	NGX
Firm Size	FSIZE	Logarithms of total assets	NGX

Note: NGX = Nigerian Exchange Group. ESG = Environmental, Social & Governance Indicators

Authors Compilation (2025)

RESULTS/FINDINGS

Table 2 below presents descriptive statistics of variables. Tobin's Q and ROA has mean values of 1.424 and 1.195 with standard deviation of 1.591 and 17.01 respectively, suggesting that on the average, 1 unit of every asset invested will yield a return of about 1.1%. Their minimum and maximum values were 0.01 to 23.87, and -179.9 to 176.2 respectively, Overall ESG activities (ESGIDX), Environmental disclosure (ENVD), Social disclosure (SOC) and Governance disclosure (GOVD) has a mean value of 0.276, 0.099, 0.324, and 0.404 with the standard deviation of 0.146, 0.214, 0.162 and 0.194, indicating that on average, overall ESG accounted for about 27.6% for every unit of ESG metrics, environmental score accounted for about 9.9%, social is 32.4%, and governance 40.4%, while their minimum and maximum values range between 0 and 1. MCAP has a mean value of 6.724 with a standard deviation of 1.039. Leverage has a mean value of 68.26 and a standard deviation with a minimum value ranging from -20.78 to 395.4. Firm size (FSIZE) has a mean value of 7.127, a standard deviation of .0890, and minimum and maximum values of 5.03 and 9.45, suggesting that on average, firm size is bigger than the minimum value of 5 and the maximum of 9.45. Further, normality of data tested using the Shapiro-Wilkson test was not normally distributed, while the Breusch-Pagan test statistics cannot reject the null hypothesis of homoscedasticity. The value of the individual variable for VIF is below 10, which rules out the problem of multicollinearity in the sample.

**Table 2: Descriptive Statistics**

Variable	Obs	Mean	SD	Min	Max	S-W test (z)	VIF	I/VIF
Tobin_Q	760	1.424	1.591	0.01	23.87	13.34 (0.000)	-	-
Roa	760	1.195	17.01	-179.9	176.2	12.50 (0.000)	-	-
Esgidx	760	0.276	0.146	0	0.84	8.333 (0.000)	-	-
Envd	760	0.099	0.214	0	1	10.16 (0.000)	1.39	0.721
Socd	760	0.324	0.162	0	1	6.618 (0.000)	1.85	0.541
Govd	760	0.404	0.194	0	1	0.570 (0.000)	1.60	0.626
Mcap	760	6.724	1.039	3.95	10.61	5.830 (0.000)	3.96	0.252
Lev	760	68.26	43.31	-20.78	395.4	11.94 (0.000)	1.04	0.963
Fsize	760	7.127	0.890	5.03	9.45	4.041 (0.000)	3.67	0.272
Ho: homoskedasticity		14.71	(0.000)					

Source: Authors' Computation (2025)

Note: S-W means the Shapiro-Wilk test for normality

Notes: Tobin's Q, as a measure of firm value, is the proxy for total equity of common shares plus market value scaled by total assets. ROA is estimated as income after tax scaled by total assets; ESGIDX is overall ESG performance estimated as total ESG scores of the companies; ENV is environmental performance estimated as proportion of environmental scores disclosed; SOC is social performance estimated by proportion of social scores disclosed; GOV is governance performance estimated by proportion of governance scores disclosed; MCAP is market capitalization measured as the proportion of outstanding shares of the companies; LEV is leverage estimated as the proportion of total debts to the value of equity; FSIZE is firm size estimated as the log of total assets.

Table 3: Spearman Correlation Matrix

	TobinQ	Roa	Esgidx	Envd	Socd	Govd	InstOw	Mcap	Lev	Fsize
Tobin q	1									
Roa	0.127	1								
Esgidx	0.034	-0.086	1							
Envd	0.044	0.015	0.558	1						
Socd	-0.024	-0.095	0.842	0.357	1					
Govd	0.089	-0.080	0.820	0.174	0.585	1.				
Mcap	0.286	-0.017	0.586	0.323	0.496	0.508	0.025	1		
Lev	0.344	0.078	-0.140	-0.004	-0.158	-0.152	0.002	-0.120	1	
Fsize	-0.016	-0.042	0.544	0.352	0.463	0.437	-0.026	0.843	0.042	1

Source: Authors' Computation (2025)

Pairwise Granger Causality Test

Panel VAR-Granger Causality results shown in table 4 below show that there is a link between firm performance and overall ESG. The results revealed that the variables have a bi-directional link, which means that financial performance can exacerbate ESG performance, while engagement in ESG activities can enhance firm performance. Since the test results revealed a bidirectional link between dependent and independent variables, there is the need to set up a simultaneous equation model.

**Table 4: Panel VAR-Granger causality Wald test**

Equation \ Excluded	Coefficient	prob >t		Remarks
TobinQ $\longrightarrow$ Overall ESG	1	0.000	TobinQ $\longleftrightarrow$ Overall ESG	Causality
ROA $\longrightarrow$ Overall ESG	-1.49	0.009	ROA $\longleftrightarrow$ Overall ESG	Causality

Source: Authors' Computation (2025)

DISCUSSION

The study employed the instrumental variable approach of 2-stage least squares and 3-stage least squares (2SLS and 3SLS), respectively. The Hansen J. test was used to verify the validity of the instrument variables used in the study with a null hypothesis of over-identification restriction. The Hansen J. test statistic was significant for 2SLS and insignificant for 3SLS, suggesting that 3SLS is more appropriate. We present the results obtained from the estimation of the regression models using the 3SLS method since it allows us to simultaneously estimate multiple interrelated equations, capturing potential endogeneity and cross-equation correlations that may arise in our model. In this context, firm performance and ESG disclosures may influence each other, creating a system of equations where the dependent variable in one equation can be an independent variable in another. The 3SLS approach enhances estimation efficiency and consistency by accounting for this simultaneous relationship and the potential correlation of error terms across equations.

In Table 5 Column 2, the coefficient for the ESG index (ESGIDX) on TobinQ is -5.748, with a p-value of 0.000, implying a statistically significant negative relationship at 1%. This indicates that an increased attempt at ESG reporting is associated with a reduction in firm value. From a theoretical angle, this could imply that the markets might perceive ESG costs as a diversion from profit-driven initiatives, which might reduce future cash flows or profitability, thereby lowering its market valuation. Practically, an investor may be driven by short-term financial benefits, which may not be visible in the organizations that imbibed the ESG program. They therefore withdraw resources from firms that promote ESG goals with the notion that such constitute a resource drainpipe to the firm. Further, the scarcity of investment funds as a result of the aversion of investors to ESG might deny firms access to needed capital, which in turn affects firm valuation.

Also, ESG disclosure may lead to a reduction in firm valuation where investors are indifferent to communication as signaled by sustainability initiatives or when they perceive disclosure as mere greenwashing efforts. These results were in tandem with Firmansyah et al. (2023), Duque-Grisales and Aguilera-Caracuel (2019), and Fatemi et al. (2017), who concluded that ESG increased overall expenditure and, by extension, reduced firm value. The result contradicts the findings by Naeem et al. (2022), Aydogmus et al. (2022), Giannopoulos et al. (2022), and Chouaibi and Chouaibi (2020). Conversely, the coefficient of Tobin's Q on ESGIDX in Column 2 is -0.162, with a p-value of 0.000, revealing a statistically significant negative association. The finding suggests that firms with lower market valuations, as reflected in Tobin's Q, may experience loss of interest in ESG activities or disclosure, possibly due to



lack of resources to propagate the idea or a strategy to remain focused on core business areas that promise immediate financial returns. It, therefore, implies a feedback loop where lower-valued firms are less inclined to engage in ESG initiatives.

In Column 4, the relationship between ESGIDX and ROA is markedly different. The coefficient of ESGIDX on ROA is 71.265, with a p-value of 0.000, suggesting a strong positive and statistically significant association at 1%. This suggests that improved ESG practices have a greater association with higher profitability. Theoretically, this conforms with stakeholder theory, which posits that responsible management of social and environmental concerns can lead to improved operational efficiency, cost reductions, and enhanced reputation, all contributing to better financial outcomes. Practically, this finding could indicate that firms actively engaging in ESG practices benefit from improved operational processes, risk management, and customer loyalty, ultimately translating into higher returns on assets. The finding agreed with Aydogmus et al. (2022) and Velte (2017), who documented a positive association between ESG scores and profitability. Our result contradicts findings by Giannopoulos et al. (2022), who reported that investors were not rewarded in the short term but in the long run. Furthermore, the coefficient of ROA on ESGIDX is 0.007, with a p-value of 0.019, indicating a statistically significant positive association at the 5% level. This finding suggests that firms with higher profitability, as measured by ROA, have a higher propensity to engage in ESG initiatives. It reflects a practical implication where more profitable firms might have greater flexibility and resources to allocate toward ESG initiatives, reinforcing the notion that profitability can drive social and environmental responsibility. This bi-directional relationship points to a virtuous cycle where higher profitability enables better ESG disclosure, and vice versa.

Table 5. Effect of ESG disclosure index on Firm Performance—Tobin's Q and Return on Asset

	(1) 2SLS	(2) 3SLS	(3) 2SLS	(4) 3SLS
tobinq/roa				
esgidx	-2.190 (0.048) **	-5.748 (0.000) ***	6.173 (0.728)	71.265 (0.000) ***
mcap	2.128 (0.000) ***	2.337 (0.000) ***	-0.940 (0.544)	-4.766 (0.001) ***
lev	0.014 (0.000) ***	0.013 (0.000) ***	0.013 (0.382)	0.025 (0.086)
fsize	-1.804 (0.000) ***	-1.688 (0.000) ***	-0.082 (0.955)	-2.213 (0.116)
esgidx				
tobinq/roa	-0.123 (0.003) ***	-0.162 (0.000) ***	0.004 (0.269)	0.007 (0.019) **
mcap	0.305 (0.000) ***	0.383 (0.000) ***	0.061 (0.000) ***	0.063 (0.000) ***
lev	0.002 (0.009) ***	0.002 (0.000) ***	-0.000 (0.054)	-0.000 (0.023) **
fsize	-0.198 (0.011) **	-0.272 (0.000) ***	0.032 (0.002) ***	0.032 (0.002) ***



N	757	757	757	757
Hansen J. Test	52.911 (0.000)	0.110 (0.946)		

Source: *Authors' Computation (2025)* *p-values in parentheses* (** $p < 0.05$, *** $p < 0.01$)

Robustness Test

We examined the effect of ESG (environmental, social, and governance) on firm performance using Tobin's Q and ROA and vice versa. This allowed us to ascertain whether the baseline findings, which showed mixed relationships between the overall ESG index and firm performance, hold true when considering the individual components of ESG disclosures. Overall, our results confirmed that the baseline findings largely held. The results reinforced that while governance disclosure seems to drive the negative impact of ESG on market valuations, social and environmental disclosures do not exhibit significant direct effects. This underscores the complexity of ESG's impact on firm performance, where different components may carry distinct implications for market perception and operational outcomes, consistent with both theoretical expectations and practical observations in corporate strategy and market behavior.

Specifically, in Table 6, column 2, the coefficient of social disclosure (SOCD) on TobinQ is 1.548, with a p-value of 0.312, providing evidence that the link between the social pillar and firm performance is not significantly different from zero. This aligns with our earlier baseline results, where the overall ESG index (ESGIDX) showed a significant negative relationship with Tobin's Q. The lack of a significant impact from social disclosure alone suggests that the negative effect observed for the overall ESG index may not be driven primarily by social initiatives. Similarly, the coefficient of Tobin's Q on SOCD is 0.090 with a p-value of 0.380, which is also not statistically significant. This further supports the robustness of our baseline findings, indicating that firm valuation does not substantially influence the level of social disclosures, reinforcing the idea that other factors, such as regulatory pressures or ethical standards, might be the primary motivators.

Column 4 examines the link between environmental disclosure (ENVD) and Tobin's Q, with a coefficient of 7.443 and a p-value of 0.170. While the result suggests a positive association, it is not significantly different from zero, mirroring the baseline findings where the overall ESG index did not significantly enhance market value. This indicates that rewards for environmental efficiency take time to manifest (long-run) and may not be immediately capitalized by the market. Conversely, the coefficient of TobinQ on ENVD is 0.112, with a p-value of 0.618, again showing no significant association. These results support the robustness of our initial findings, implying that market valuations do not directly drive environmental disclosure practices, suggesting that firms' environmental reporting is influenced by other strategic or regulatory considerations.

In Column 6, governance disclosure (GOVD) exhibits a significant relationship with firm performance. The coefficient of GOVD on TobinQ is -3.485, with a p-value of 0.034, showing a negative but statistically significant association at 5%. This finding is consistent with the baseline result, where the overall ESG index negatively affected Tobin's Q, suggesting that governance disclosures might be a critical factor contributing to this negative association. It appears that increased governance disclosures could signal to the market potential underlying



issues or attempts to manage investor perceptions, which aligns with the earlier finding that ESG activities might be perceived as costly or non-value-enhancing in the short term. Additionally, the coefficient of Tobin's Q on GOVD is -0.235, with a p-value of 0.020, indicating a negative but statistically significant association, which suggests that firms with lower market valuations are more likely to engage in greater governance disclosure, possibly to reassure investors or comply with market expectations.

Table 6: Effect of components of ESG disclosure on firm value – TobinQ

	(1) 2SLS	(2) 3SLS	(3) 2SLS	(4) 3SLS	(5) 2SLS	(6) 3SLS
tobinq						
socd/envd/govd	0.319 (0.842)	1.548 (0.312)	3.385 (0.572)	7.443 (0.170)	-1.947 (0.420)	-3.485 (0.034)**
mcap	1.683 (0.047)**	1.391 (0.097)	-0.785 (0.870)	-1.660 (0.726)	1.402 (0.154)	1.120 (0.226)
lev	0.012 (0.351)	0.008 (0.555)	-0.054 (0.638)	-0.066 (0.561)	0.002 (0.905)	-0.007 (0.694)
fsize	-1.780 (0.014)**	-1.664 (0.021)**	0.571 (0.898)	0.100 (0.982)	-1.264 (0.236)	-0.833 (0.376)
socd/envd/govd						
tobinq	0.028 (0.796)	0.090 (0.380)	0.112 (0.619)	0.112 (0.618)	-0.101 (0.496)	-0.235 (0.020)**
mcap	0.189 (0.461)	0.079 (0.752)	0.222 (0.680)	0.222 (0.678)	-0.006 (0.987)	0.230 (0.437)
lev	0.003 (0.269)	0.003 (0.401)	0.008 (0.219)	0.008 (0.218)	-0.004 (0.296)	-0.003 (0.512)
fsize	-0.044 (0.863)	0.070 (0.778)	0.008 (0.988)	0.008 (0.988)	0.097 (0.780)	-0.145 (0.614)
N	757	757	757	757	757	757

Source: Authors' Computation (2025)
0.01

p-values in parentheses (** $p < 0.05$, *** $p < 0.01$)

A similar result is obtained for the return on asset measure of firm performance in Table 7. In Column 2, the coefficient for social disclosure (SOCD) on ROA is -9.131, with a p-value of 0.716, suggesting a non-significant association. This contradicts the baseline result, where the overall ESG index positively impacted ROA, suggesting that social disclosure alone does not contribute to the profitability of the firm as measured by ROA. The lack of significance could imply that social initiatives do not directly enhance internal efficiency or cost savings, which might be necessary to affect accounting-based measures like ROA. Additionally, the coefficient of ROA on SOCD is -0.002, with a p-value (0.752) that also indicates a non-significant relationship. This suggests that a firm's profitability does not significantly influence its level of social disclosures, which may be driven by other factors such as compliance or reputational considerations rather than financial performance.

Moving to Column 4, the coefficient of environmental disclosure (ENVD) on ROA is -126.542, with a p-value of 0.133, implying negative insignificance. This differs from the baseline, where ESG overall showed a positive impact on ROA. The negative, though non-significant,



coefficient suggests that environmental disclosure alone may not provide immediate or direct financial benefits in terms of profitability, potentially due to the costs associated with environmental initiatives or the time lag in realizing their benefits. Conversely, the coefficient of ROA on ENVD is -0.006, with a p-value of 0.684, which is also not statistically significant. The result reinforces the notion that current profitability does not determine the extent of environmental disclosure, suggesting that firms may engage in environmental reporting for reasons beyond short-term financial returns, such as long-term strategic positioning or stakeholder pressure.

In Column 6, governance disclosure (GOVD) shows a different pattern. The coefficient for GOVD on ROA is 58.629, with a p-value of 0.017, affirming a statistically significant positive association at 5%. The result is in tandem with our baseline finding that the overall ESG index positively affects ROA, suggesting that governance disclosures contribute positively to firm profitability. This result may reflect that better governance practices, such as transparency and effective oversight, enhance operational efficiency and reduce costs, thus directly benefiting profitability. Meanwhile, the coefficient of ROA on GOVD is 0.015, with a p-value of 0.009, showing a significant positive relationship at 1%. This suggests that more profitable firms have higher propensity to invest in governance disclosures, possibly to signal their strong performance and maintain investor confidence.

Table 7: Effect of components of ESG disclosure on firm performance—ROA

	(1) 2SLS	(2) 3SLS	(3) 2SLS	(4) 3SLS	(5) 2SLS	(6) 3SLS
roa						
socd/envd/govd	-1.792 (0.944)	-9.131 (0.716)	-52.171 (0.584)	-126.542 (0.133)	34.770 (0.393)	58.629 (0.017)**
mcap	3.421 (0.798)	5.167 (0.698)	43.077 (0.572)	63.504 (0.397)	9.367 (0.572)	13.740 (0.373)
lev	0.030 (0.886)	0.058 (0.782)	1.098 (0.549)	1.463 (0.419)	0.226 (0.497)	0.365 (0.181)
fsize	-3.283 (0.775)	-3.974 (0.728)	-41.142 (0.563)	-39.217 (0.580)	-12.858 (0.474)	-19.545 (0.206)
socd/envd/gov						
roa	-0.001 (0.926)	-0.002 (0.752)	-0.006 (0.685)	-0.006 (0.684)	0.007 (0.460)	0.015 (0.009)***
mcap	0.240 (0.160)	0.244 (0.151)	0.436 (0.219)	0.436 (0.218)	-0.205 (0.407)	-0.229 (0.350)
lev	0.004 (0.154)	0.004 (0.148)	0.010 (0.084)	0.010 (0.083)	-0.006 (0.121)	-0.006 (0.108)
fsize	-0.096 (0.549)	-0.101 (0.528)	-0.213 (0.524)	-0.213 (0.522)	0.302 (0.192)	0.328 (0.154)
N	757	757	757	757	757	757

p-values in parentheses (**p < 0.05, ***p < 0.01)

Source: Computed Note (1) t-statistics in parenthesis. Note (2): *p<0.1, **P<0.05, ***P<0.01

Source: Authors Computation (2025)



IMPLICATION TO RESEARCH AND PRACTICE

The results of this study are quite unique and interesting, particularly in an emerging economy like Nigeria. Contrary to the popular notion that ESG and firm performance are positively associated (Abdi et al., 2022; Naeem et al., 2022; Aydoğmus et al., 2022), the current study established that on the aggregate, environmental, social and governance (ESGIDX) disclosures reduced firm valuation and vice versa. Surprisingly, the same indicators enhanced operational efficiency to boost profitability, while profitable firms have a higher inclination towards ESG disclosure. The findings from ESG individual components produced mixed results. However, the governance indicator (GOV) was found to be crucial to overall ESG disclosure, while it also played a significant role towards profitability. Neither the social nor the environmental pillar was statistically significantly associated with disclosure.

From a theoretical perspective, the findings were consistent with the trade-off hypothesis, which opined that firms may be in a dilemma when faced with conflicting situations and the need to strike a balance. The firms' core objective: shareholders' wealth maximization might be at variance with sustainable practice as observed in the current study. The negative impact of ESG disclosure on valuation may be a reflection of several factors. Market perception: the expectation of the investors is to maximize returns; therefore, investment in sustainable disclosure may be viewed as an attempt to undermine the profitability to their own disadvantage, and they may, therefore, become skeptical towards the firm and consider their efforts as mere greenwashing, thus leading to a decline in valuation. The cost expended on disclosure might outweigh potential benefits, thus eroding short-term returns to the detriment of shareholders. Low awareness: The investors might not have adequate knowledge of potential benefits associated with ESG practice and, in the process, might screen out firms with strong commitment to such practice. Duration: sustainability initiatives take time to crystallize; therefore, their impact might not be obvious in the short run. Regulatory framework: absence of mandatory regulations to enforce implementation might have contributed to the results herein because investors might see it as not necessary except it can be proved that the tax reduction as a result of expenses on ESG will reduce the tax liability, thereby indirectly enhancing the profits available to investor (vi) Finally, the concept of sustainability is alien to emerging economies. This result underscores that sustainable goals are not much welcomed by investors in Nigeria because of interest in short-term return. This is in contrast to what is obtained in other countries, regions, and even capital markets. The study made a significant contribution to literature by adopting trade-off theory, which is consistent with Tarawneh et al. (2024), which addressed the dichotomy between ESG disclosure and firm performance.

The results hold several implications for regulatory agencies, managers, and policymakers. The regulatory bodies should create awareness and push for enlightenment of the stakeholders about the benefits of ESG. There is also the need to strengthen corporate governance in a way that the oversight of the board on the managers would be efficient and effective to ensure that managers do not take advantage of their positions to enrich themselves in the implementation of ESG. There is also the need to balance expectations of stakeholders to improve stakeholder engagement, which, in the long run, may lead to improved value of firms that engage in ESG. The board should also take time to evaluate which aspects of the ESG are more relevant to the industry and environment in which the organization finds itself.



CONCLUSION

The discussion about ESG has been going on for quite a while. However, consensus is lacking with regard to the adoption, implementation, disclosure, and potential benefits associated with the concept across the globe. In some instances, a strong regulatory framework was deployed to enforce compliance, while in several others, including Nigeria, the practice remained largely voluntary. Previous studies have equally provided mixed results while adopting several indexes as measures of sustainability initiatives. In our study, we adopted a global guideline as codified by the Global Reporting Initiatives (GRI, 2021) to lend credibility and reliability to our research findings. The current study established a non-linear relationship between ESG disclosure and firm performance by conducting an investigation that illustrates a bi-directional relationship between ESG disclosure and firm performance. Thus, filling a major gap. The sample covered a wider scope, 2013-2022, with 76 non-financial firms listed on the Nigeria Exchange Group (NGX). It, therefore, contributed to literature by providing empirical evidence on how sustainable practice could erode firm value and vice versa. Our results support a positive association between ESG disclosure and profitability, while a negative association was documented for firm valuation. The study provided several policy implications for regulatory agencies and corporate governance.

LIMITATION OF THE STUDY

Notwithstanding the efforts to unravel the impact of environmental, social and governance (ESG) reporting on firm valuation and performance, the study is not without some limitations. On the list is the fact that the sample size was restricted to firms operating in Nigeria's manufacturing industry while neglecting other sectors within the economy. Likewise, Nigeria is strategic to the African continent; therefore, it should not be out of place to include other African countries for a comparative analysis to appreciate the extent of adoption and application of ESG strategies in Sub-Saharan Africa.

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