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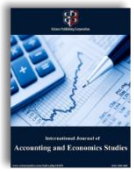

Environmental, Social, and Governance (ESG) Costs and Market Performance of The Listed Agricultural Firms in Emerging Markets

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Abstract

The rise in the global sustainability movement has also made ESG elements more important in corporate management, especially in developing nations such as Nigeria. In this research, the authors attempted to examine how the costs of ESG impact the market performance of listed agricultural corporations in Nigeria. This study assessed the effects of expenditure on environmental, social , and governance on market performance. This paper employed a post facto research design. It centered the attention on all 5 agricultural companies that were listed on the Nigerian Exchange Group (NGX) up to December 31, 2023, where the information on them was gathered based on annual reports, ESG disclosures, and financial databases between the period of 2010 through 2023. A census sampling method was applied to make it as representative as possible. The result of the regression-based analysis showed that social costs have a positive and significant relationship with the market performance of the Nigerian agricultural firms. It was also shown that market performance was negatively and significantly influenced by environmental costs as well as governance costs. These results showed that ESG investments boost company performance and improve investor perception, and there is a need to use more focused and coordinated sustainability spending. In line with the results of the emerging findings, this research paper considers that companies ought to make some eco-friendly initiatives to become an intrinsic part of their operation as a strategy to ensure that such initiatives contribute to their sustainable and a monetary gain.

Keywords: *Environmental Costs; Social Costs; Governance Costs; Market Performance.*

1. Introduction

The performance of the market is very important to many stakeholders all over the world, such as investors, corporations, regulators, and consumers, since it shows the effectiveness and profitability of businesses in an economy (Dagunduro et al., 2024a). To investors, high performance in the market will lead to high returns, low risk, and greater confidence in the financial markets. A vibrant market attracts investments both in the country and abroad, which enhances economic growth and economic stability (Baker & Wurgler, 2022). Bright prospects in the market are beneficial to organisations since they enhance the valuation of the organisation, ease capitalisation, and promote competitive positioning. Companies that are performing well in the market often enjoy easy finance, increased shareholder value, and efficiency in decision making (Dagunduro et al., 2025; Demirguc-Kunt & Levine, 2023). Moreover, policymakers apply markers of the performance of the market to determine the effectiveness of the economic policies, regulate financial institutions, and enhance the existence of transparency in the market, thereby enhancing sustainable economic growth (Claessens & Kodres, 2023).
Constant market performance not only helps consumers and the economy at large in the development of jobs, even the distribution and innovation. The good market will enable the business to grow, invest in research and development (R&D), and innovate new goods that

will enhance consumer welfare (Shleifer & Vishny, 2023). Moreover, retirement accounts and pension schemes, which depend on the market, have access to great results and have long-term safety for individuals (Bodie et al., 2023). Alternatively, unfavorable performances in the market may lead to decreasing profits from business, unemployment, and economic recessions, which affect consumer attitudes, as well as purchases (Dagunduro et al., 2023).

The world is becoming more focused on sustainability, and as a result, an issue that is relevant to the corporate decision-making process, especially in a developing nation such as Nigeria, the ESG factors have gained importance. There is enhanced monitoring of the ESG performance of organisations by investors, regulators, and other stakeholders, who are believed to base the financial performance and market prices of the organisation on ESG performance (Boluwaji et al., 2024; Friede et al., 2023). Considering the direct contribution of the agricultural sector to the environmental and social trends, the topic of ESG costs is paramount as the indicator of sustainable performance and competitiveness of companies (Nguyen et al., 2023). The use of resources, waste disposal, emission of carbon, and biodiversity protection programmes are often the source of environmental cost in agricultural business ventures (Zhao & Li, 2024). The social costs involve labour conditions, community involvement, and fair-trade standards, and the governance costs involve compliance, diversity of the board, and ethics of the company (Khan et al., 2024). The ability of firms to manage these costs in a manner that ensures they are controlled effectively is associated with significant effects on their performance in the market, on investor perception, as well as their long-term profitability (Rahman & Alam, 2024). Nevertheless, the debate is raging as to whether ESG investments add corporate value or provide an unwanted financial weight, especially in capital-starved areas (Adegbite et al., 2023).

The market performance of the listed agriculture enterprises in Nigeria is therefore unstable and fluctuates in spite of the increased attention to sustainability and corporate responsibility. The turbulence in financial returns and plummeting market valuation is attributable to climate change, regulatory inconsistency, poor corporate governance models, and vagrant levels of investor confidence (Adegbite et al., 2023; Khan et al., 2024). Moreover, substantial cost involved in ESG compliance often stretches the financial capability of these organisations, and this begs the question of the compromise between sustainability investments and profitability (Rahman & Alam, 2024). Although some research argues that ESG investments have positive effect on the financial performance of companies because it attracts responsible investors and the reduction in operational risks (Clark et al., 2023), there is also an argument that investments may not give immediate financial returns especially in markets with weak regulatory enforcement and overall low levels of sustainability awareness (Okonkwo & Adeyemi, 2023). Consequently, it is of great necessity to empirically investigate the impact of ESG costs on the market performance of agricultural enterprises listed in Nigerian markets to proffer pragmatic, actionable findings to the stakeholders and policymakers.

Although the study occurrence of ESG factors and the corporate financial performance of companies has been widely studied in developed markets over the years (Clark et al., 2023), limited research has been done involving agricultural companies in emerging markets like Nigeria, where the institutional setup, regulatory framework, and market composition are vastly different (Okonkwo & Adeyemi, 2023). Since sustainability reporting is increasingly becoming a standard and agricultural enterprises are requested to adhere to high international ESG standards, it is important to assess the effects of ESG costs on performance in the market. Additionally, the leading research has achieved mixed outcomes when it comes to the financial consequences of ESG investments and certain factors stated supportive relationships are located between ESG performance and market value (Li & Thompson, 2024), whereas others suggest that there are possible trade-offs between short-term expenses and long-term gains (Mahmood & Chen, 2023). Moreover, the sets of expectations of stakeholders and legal frameworks governing ESG practices are rapidly changing across emerging markets, which creates a dynamic environment in which there are constantly emerging questions that could be answered continuously through empirical studies (Orazalin, 2024).

The study contributed to filling a research gap by exploring whether the ESG costs affect the market performance of the listed agricultural enterprises in Nigeria. The study aimed to explain how environmental, social, and governance expenditures affect market performance factors such as stock returns. The results will enable the governments and investors, as well as corporate managers in the developing nations, to bridge the difference between sustainability initiatives and corporate performance requirements.

2. Literature Review and Hypotheses Development

2.1. Theoretical framework

The study is anchored on two theoretical frameworks: stakeholder theory and institutional theory, each providing unique insights into ESG costs and firm performance.

2.1.1. Stakeholder theory

Stakeholder theory is the concept created by Freeman (1984) that presupposes that corporations are under obligations to their stockholders, yet they also owe other, broader parts, such as employees, customers, suppliers, and their local communities (Kolawole et al., 2023). Its theory requires businesses to contend with the interests of these parties to attain legitimate success and viability in the long term (Dagunduro et al., 2022). It presupposes that organisations do not work in a vacuum; therefore, the company is answerable to a wide web of stakeholders (Igbekoyi et al., 2021). Additionally, the stakeholder theory assumes that the stakeholders possess valid interests in the trade selections of the company, and their welfare should be taken into consideration in realizing corporate decisions (Freeman, 1984). In recent studies, stakeholder theory has been used in ESG accounting, which indicates that it has been effectively used in the transparency and governance of corporations. According to Giner and Pardo (2022), European companies rely on ESG accounting to deal with issues raised by the stakeholders, whereas Chen and Lee (2023) observed that ESG practices contribute to better governance systems. Another aspect pointed out by Parker and Goh (2021) concerns the role of ESG accounting in improving corporate reputation and financial performance.

The stakeholder theory is very applicable in the discussion around the ESG costs and market performance since it highlights the need to keep in check the interests of many stakeholders and not only those of the investors, since a firm is required to address the needs of the customers, the employees, the regulators, and the communities as well (Dagunduro et al., 2025). The cost of ESG, including expenditure on environmental sustainability, social accountability, and governance frameworks, is used when fulfilling stakeholders' demands and improving long-term value (Li & Thompson, 2024). As elements of ESG engagements, good governance processes can enhance transparency, minimize risks, and bolster investor confidence, which can result in an enhanced market performance (Dagunduro et al., 2023; Gerged et al., 2024). Nevertheless, ESG expenses can decrease profitability and shareholder value in case they are too high or do not correlate directly with stakeholder concerns, making it essential to have intelligent ESG investments that resonate with the bottom-line financial and stakeholder interests (Okonkwo & Adeyemi, 2023).

Stakeholder theory provides a lens to understand ESG costs, environmental, social, and governance expenditures as strategic investments aimed at meeting the expectations of diverse stakeholders, including employees, customers, communities, regulators, and investors (Putri

& Weli, 2023). By allocating resources to social initiatives, environmental management, and good governance, firms signal that they take non-financial responsibilities seriously, which can enhance legitimacy, stakeholder trust, and corporate reputation (Dagunduro et al., 2024a; Zheng, 2024). This, in turn, can improve market performance and financial outcomes, as investors often reward firms demonstrating strong ESG practices with greater confidence, lower perceived risk, and higher valuations (Kumar, 2023; Chen, 2024). In particular, social costs such as community development, employee welfare, and philanthropic spending are shown to contribute directly to market performance in emerging markets by strengthening stakeholder relationships and promoting long-term sustainability (Matemane et al., 2025).

Although the stakeholder theory is very broad, it possesses quite a few limitations. First, it does not give straight rules about how to manage conflicting stakeholder interests, and it is quite difficult to have a company focus on the needs of one category of stakeholders and leaving those of another group (Donaldson & Preston, 1995). Second, the theory implies that the interests of all the stakeholders can be addressed successfully, and it is not always possible in the rank competitive environment that a multinational company occupies. Third, the general nature of the theory may be a problem in terms of turning its concepts into practice, since the companies may not know how to quantify and meet various and often competing needs of their stakeholders (Harrison et al., 2015). Such restrictions imply that the stakeholder theory is rather a broad framework that should be accompanied by other theories or practical models to be applied effectively in corporate decision-making.

2.1.2. Institutional theory

The institutional theory argues that organisations aim at attaining legitimacy through compliance with norms, values, and expectations of their institutional environment (DiMaggio & Powell, 1983). It claims that firms are not only motivated by efficiency or profit but also by external forces such as regulatory necessities, industry practices, and expectations. It is isomorphic that organisations are likely to adopt structures and behavioural standards as a result of coercive, mimetic, and normative pressures (Tahmid et al., 2022). Research on ESG accounting with institutional theory in mind shows how companies adjust their institutions to satisfy institutional norms in an attempt to gain legitimacy for their reporting. Van der Laan et al. (2020) revealed that the ESG standards are followed to fulfill the regulatory pressure by the EU firms, whereas Garc2021c-S31zSanchez et al. (2021) demonstrated a response of the Spanish firms to the institutional norm and adopted CSR practices. On the same note, Ameer and Othman (2012) showed the way Malaysian companies recognize disclosures of environmental information to gain legitimacy. All these studies show the importance of institutional pressures and their influence on ESG practices.

Institutional theory is one of the most applicable theories in determining the correlation between the cost of ESG to the market performance since it accounts for how corporate action is influenced by the outside forces exerted by government regulatory agencies, stakeholders, and norms, which may be financial, political, or associated with societal beliefs. The motives behind the ESG practices are not confined to monetary benefits, and the companies are willing to engage in the ESG practices to comply with the institutional expectations, ensure legitimacy, and secure their social license to operate (Adegbite et al., 2023). ESG investments can create a stronger performance on the market and might result in the attraction of investors and the creation of consumer trust in the environment with high levels of regulation and societal pressure on sustainability (Zhao & Li, 2024). Nonetheless, in the economies of lesser institutions, the gains of ESG spending can be less proximal or even recessive in case companies view this kind of spending as a reimbursement rather than an advantage-bringing thing (Rahman & Alam, 2024). This school of thought can support how ESG effects on market performance can be different among regions and industries, supporting how governance strategies could be location-specific.

Institutional theory, by contrast, emphasizes the role of external pressures, regulatory requirements, societal norms, industry standards, and institutional frameworks in shaping firms' ESG-related behaviors. According to this perspective, ESG expenditures may often be compliance-driven rather than strategically oriented, particularly in emerging markets where institutional enforcement is weak (Matemane et al., 2025). Environmental and governance costs may therefore create short-term financial strain if they are reactive, capital-intensive, or misaligned with core business activities. Firms that fail to integrate ESG practices strategically may face inefficiencies that reduce short-term profitability despite fulfilling institutional or normative expectations (Baharom, 2025). Thus, institutional theory highlights the conditional and context-specific nature of ESG investments, explaining why similar ESG expenditures can yield varying market outcomes across countries and industries.

Although the institutional theory is applicable, it has some limitations. To begin with, it is also dealing with less agency of individual actors in organisations, which indicates that organisations are inert objects of external influence that are not dynamic actors in their own environments (Greenwood et al., 2008). Second, institutional theory tends to imply that organisations seek legitimacy without giving a thought about what exact consequences their actions will have on their internal results or efficiency in operation (Oliver, 1991). This restriction may conceal the intrigue of how organisations prioritise their legitimate goals over other strategic drives, including profitability or innovation. Third, the institutional theory is biased towards homogeneity of organisational practices, provided all organisations in the given institutional field use similar practices in the long term, which ignores the versatility of strategies and adjustments made by firms as part of different settings (Meyer and Rowan, 1977). The weaknesses of these limitations prompt the importance of a more nuanced view of organisational behaviour that would consider, on the one hand, institutional pressures and, on the other hand, strategic decision-making.

2.3. Empirical review

Aligned with the goals of this research, prior studies conducted by various scholars are reviewed and categorised according to each specific objective.

2.3.1. Environmental cost and market performance

The reviewed studies collectively highlight that environmental accounting can substantially influence financial performance across industries and geographies. Empirical evidence from Malik et al. (2021) in Malaysia showed that risk management committee attributes, such as expertise, positively affected firm performance, while other factors, like size or token female representation, sometimes correlated negatively. Similarly, research in Nigeria (Ilelaboye & Alade, 2022), Iraq (Fatah & Hamad, 2022), and the mining sector (Agyemang et al., 2023) demonstrated that environmental costs, including restoration, compliance, and community development, affect financial outcomes, though effects vary by context. Other studies (Jafari & Nikbakht, 2023; Liu & Wang, 2023; Matovu & Ssempijja, 2023) emphasized that environmental accounting and disclosure strengthen corporate reputation, CSR performance, and investor confidence, suggesting that transparent environmental reporting yields strategic advantages beyond mere compliance. South Korean firms also showed similar benefits, linking environmental disclosure to financial stability and credibility (Kim & Lee, 2023). Conversely, some studies highlighted negative

financial impacts of certain environmental expenditures, such as remediation or waste management costs (Okeke & Nnadi, 2023; Kolawole et al., 2023), indicating that not all environmental investments translate immediately into financial gains.

The broader trend in environmental accounting research underscores a strong link between sustainability practices and long-term financial performance. Several studies (Agyemang & Ansong, 2023; Bashir & Umar, 2023; Chen & Zhang, 2023) confirmed that environmental accounting improves corporate governance quality, market valuation, and shareholder value. Global evidence from Africa, Asia, and Latin America supports the financial advantages of transparency in environmental management (El-Gamal & Shehata, 2023; Frimpong & Amoako, 2023; Gupta & Singh, 2023). More recent research (Aremu & Adegbie, 2024; Gerged et al., 2024) highlighted that while some environmental costs can impose short-term financial burdens, strategic environmental management, including stakeholder integration and innovation, leads to sustainable competitive benefits. Studies focused on risk management committees in Nigerian insurance firms (Awotomilusi et al., 2025) further indicated that attributes such as size, independence, and gender diversity can positively influence market performance, while meeting frequency may have negative effects. Despite extensive research, there remains a scarcity of studies examining the agricultural sector in Nigeria, particularly the specific effects of environmental cost components such as pollution control, land restoration, and regulatory compliance on market performance. This study, therefore, aims to address these gaps, offering empirical evidence on how environmental costs affect the market performance of listed agricultural firms in Nigeria, with implications for corporate sustainability policies and strategies, and tests the hypothesis that environmental costs have no significant effect on market performance.

$H_0$1: Environmental costs have no significant effect on the market performance of listed agricultural firms in Nigeria.

2.3.2. Social costs and market performance

The reviewed studies collectively demonstrate that corporate social responsibility (CSR) accounting and sustainability reporting can influence financial performance, though the effects vary depending on context, industry, and the nature of social investments. For example, Azebi (2022) found that community development costs had a non-linear effect, while waste management costs negatively affected profits in Nigerian oil and gas firms. Similarly, Shahwan et al. (2023) observed that CSR accounting positively influenced return on assets in Jordanian firms during the COVID-19 pandemic. These findings highlight that while CSR activities can enhance financial outcomes, their effectiveness is conditional on how the initiatives are implemented and managed. Complementing these economic perspectives, Negari et al. (2022) emphasized the importance of spiritually informed CSR practices in promoting corporate accountability and social trust, while Chukwuekezie and Udo (2023) linked CSR to broader national objectives, such as security and sustainable development in Nigeria. Collectively, these studies suggest two key dimensions of CSR: one that focuses on economic benefits and another that underscores socio-ethical contributions.

Sustainability reporting further reinforces the link between CSR and firm performance. Dagunduro et al. (2024a) reported that sustainability reporting positively impacted market performance in Nigerian insurance companies, whereas Lawal et al. (2024) found that social sustainability disclosures improved earnings per share in manufacturing firms, though environmental sustainability disclosures sometimes had negative financial implications due to associated costs. Likewise, Dagunduro et al. (2024b) observed that environmental and social disclosures positively correlated with firm performance, while governance disclosures sometimes negatively affected outcomes, highlighting the need for firms to balance different dimensions of sustainability reporting. Despite extensive literature in sectors such as oil and gas, manufacturing, and insurance, research on CSR accounting and sustainability reporting in the Nigerian agricultural sector remains limited. Few studies have isolated the effects of social costs, such as labor welfare, community development, and philanthropic activities, on market performance. Given agriculture's critical role in national food security and its resource-intensive nature, understanding the financial impact of social expenditures in this sector is essential. This study addresses these gaps by investigating whether social costs function as value-creating strategies or impose financial burdens on listed agricultural firms in Nigeria, testing the hypothesis that social costs have no significant effect on market performance.

$H_0$2: Social Costs have no significant effect on the market performance of listed agricultural firms in Nigeria.

2.3.3. Governance costs and market performance

The reviewed studies reveal both commonalities and differences in examining the relationship between environmental, social, and governance (ESG) disclosures and firm performance. While all studies highlight the importance of ESG practices, they demonstrate variations based on board characteristics, geographic regions, and industry contexts. For instance, Wasiuzzaman and Subramaniam (2023) found that board gender diversity positively influenced ESG disclosure quality in developed countries, emphasizing that governance effectiveness varies across regions. Similarly, Agarwala et al. (2024) and Narula et al. (2024) explored the financial implications of ESG disclosure in India, yielding conflicting results: Agarwala et al. identified a U-shaped relationship where moderate ESG investments did not immediately generate financial returns, whereas Narula et al. reported no significant correlation between ESG scores and firm performance during the COVID-19 period. These differences underscore that ESG initiatives in emerging economies may require longer timeframes to influence financial outcomes.

Meta-analytic and cross-industry studies further support the nuanced effects of ESG on firm performance. Tamasiga et al. (2024) demonstrated that ESG–ESG-performance relationships vary considerably across industries and regions, aligning with findings from Wasiuzzaman and Subramaniam (2023) and Narula et al. (2024). While sectors such as food and retail experienced positive financial impacts from ESG commitments, emerging economies often showed negligible or negative effects, highlighting the influence of economic, regulatory, and cultural factors. Despite extensive ESG research, gaps remain, particularly regarding governance costs as a component of ESG that directly affects market performance. The agricultural sector, a critical but underexplored industry in ESG studies, has received limited attention despite its significance in emerging markets like Nigeria. This study addresses these gaps by focusing specifically on governance expenditures within listed Nigerian agricultural firms, hypothesizing that governance costs have no significant effect on market performance (H03), thereby providing sector-specific insights into ESG financial outcomes in emerging economies.

$H_0$3: Governance Costs have no significant effect on the market performance of listed agricultural firms in Nigeria.

2.4. Conceptual framework

Figure 1 shows the red line between the Environmental, Social, and Governance (ESG) Costs and Market Performance with the support of the Stakeholder Theory and Institutional Theory. The Stakeholder Theory suggests that, to fulfill stakeholder expectations, the corporations experience so-called ESG costs, which positively affect the level of reputation, investor confidence, and influence the outcomes of market performance. According to the Institutional Theory, the ESG practices are practiced by the organisations as a reaction to the legislative, normative, and cultural pressure that affects financial performance. Environmental, social, and governance costs or also known as ESG

costs, do affect market performance based on stock returns. Successful ESG investment might increase the market valuation, and ineffective management of ESG might diminish investor confidence, leading to a worse return. This model highlights the position of strategic role of ESG in determining the financial performance in emerging economies like Nigeria.

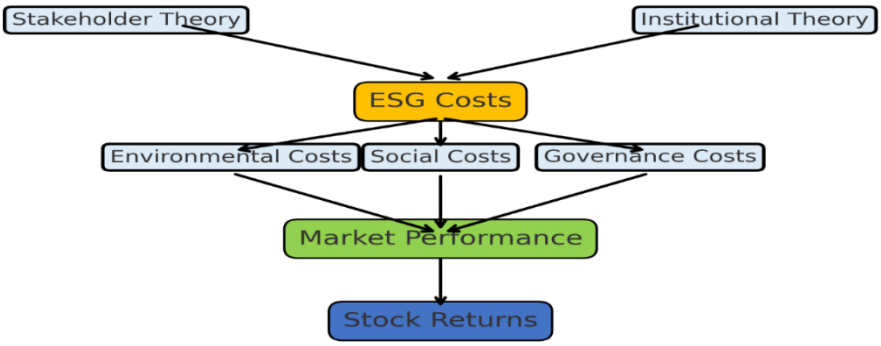

Fig. 1: Conceptual Framework.

Source: Authors' Design (2025).

3. Methodology

The research was based on an ex-post facto research design, as it is the best method when the analysis of historical data is performed without controlling the variables, and the relationship between ESG costs and market performance is assessed objectively. Information about firm ESG spending and market performance was obtained using annual reports, ESG reporting programmes, and financial databases of agricultural firms listed on the Nigerian Exchange Group (NGX) as at 31 st December 2023, which were reliable and compliant with the regulation. The study identified all 5 agricultural companies listed on the NGX, with a census sampling technique being employed to increase representativeness and eliminate selection bias. The research encompassed 14 years (20102023), a period that encompasses long ESG effects as well as the time span when the Nigerian Stock Exchange (NSE) would change into the NGX, indicating the change of corporate disclosure trends. To achieve robustness, the multiplicity of statistical techniques was utilized, which enabled conducting a more profound and accurate study of the ESG-market performance relationship. This study employed both inferential (panel regression analysis, correlational analysis, etc.) and descriptive statistics to examine the data.

3.1. Model specification

The econometric model for this study was adapted from the study conducted by Li and Thompson (2024), which examined the effects of ESG investments on the shareholder value of agricultural firms in BRICS countries. The model was specified below:

$$SV_{it} = \beta_0 + \beta_1 ENI_{it} + \beta_2 SOI_{it} + \beta_3 GOI_{it} + \varepsilon_{it}$$

Where:
SV = Shareholder Value
ENI = Environmental Investments
SOI = Social Investments
GOI = Governance Investments
Σ = Stochastic Error Term
β_0 = Intercept
β_1, β_2, β_3 = The Coefficients of the independent variable
The a priori expectation = $\beta_1, \beta_2, \beta_3 > 0$, which suggests that a positive correlation is anticipated between the explanatory variables and the dependent variable.
But the shareholder value had to be substituted by market performance and environmental investments by the environmental costs, social investments by the social costs, and governance investments by the governance costs, respectively. The following econometric model was considered and estimated:
General Form:

$$OE_{it} = \beta_0 + \beta_1 EA_{it} + \varepsilon_{it}$$

Where:
MP = Market Performance (Dependent Variable)
ESGC = Environmental, Social, and Governance Costs (Independent Variable)
Expanded Form (with details for Market Performance and Environmental, Social, and Governance Costs Metrics):

$$SR_{it} = \beta_0 + \beta_1 ENC_{it} + \beta_2 SOC_{it} + \beta_3 GOC_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots \quad \text{Mode1 3.1}$$

Where:
SR = Stock Return
ENC = Environmental Costs
SOC = Social Costs
GOC = Governance Costs
Σ = Stochastic Error Term

β_0 = Intercept
β_1, β_2, β_3 = The Coefficients of the independent variable
The a priori expectation = β_1, β_2, $\beta_3 > 0$, which suggests that a positive correlation is anticipated between the explanatory variables and the dependent variable.

3.2. Description and measurement of variables

The description and measurements of the variables are provided in Table 1, detailing their definitions, components, and how they are quantified.

Table 1: Measurement and Description of Research Variables

SN	Variable	Description	Role	Measurement	Source
1	Stock Return (SR)	Stock returns are a key measure of market performance, showing the percentage change in a company's stock price over a given period.	Dependent	It can be calculated using the following formula: [(Current Stock Price – Previous Stock Price) + Dividends Received] ÷ Previous Stock Price × 100	Fama (2023); Chen and Zhang (2024)
2	Environmental Costs (ENC)	Environmental costs refer to the expenses incurred by firms to minimise their environmental impact and comply with sustainability regulations. These costs include investments in pollution control, waste management, energy efficiency, carbon emissions reduction, water conservation, and the adoption of renewable energy sources.	Independent	Measured as the aggregate costs related to environmental activities, such as pollution control, research and development, waste management, environmental remediation, and compliance with regulations.	Igbekoyi et al. (2021); Li and Thompson (2024)
3	Social Costs (SOC)	Social costs refer to the expenses incurred by firms to promote ethical labour practices, employee welfare, workplace diversity, community engagement, and corporate social responsibility initiatives. These costs include investments in health and safety programs, fair wages, employee training, and philanthropic activities aimed at improving societal well-being.	Independent	Measured as the aggregate costs related to employees' well-being and development, Community engagement, Employees' health and safety, and Philanthropic activities.	Adegbite et al. (2023); Li and Thompson (2024)
4	Governance Costs (GOC)	Governance costs refer to the expenses incurred by a company to establish and maintain effective corporate governance structures. These costs include expenditures on board oversight, regulatory compliance, risk management, ethical business practices, transparency initiatives, and internal control systems.	Independent	This is calculated as the aggregate costs include salaries, fees, and allowances for board members, non-executive directors, and internal auditors, as well as travel and accommodation for board meetings. They also cover payments to external auditors, fees for non-audit services, regulatory compliance costs, filing fees for mandatory disclosures, and expenses for governance-related workshops and certifications.	Adegbite et al. (2023); Li and Thompson (2024)

Source: Researchers' Compilation (2025).

4. Data Analysis and Discussion of Findings

The study's findings, data analysis, and variable characteristics are all covered in this section. The variable distribution is summed up by descriptive and inferential statistics.

4.1. Descriptive statistics

The descriptive statistics presented in Table 2 reveal considerable variation across the variables used in this study. Market performance, measured by stock returns (MPER), had a mean value of 0.4406, indicating a compounded average return of 0.44 percent. The standard deviation was 1.382, reflecting high volatility in returns around the mean. Observed returns ranged from a minimum of -0.6037 to a maximum of 8.3, demonstrating a wide dispersion and indicating that stock performance was highly unpredictable over the sample period. The distribution of returns was strongly positively skewed (skew = 4.0988) and highly leptokurtic (kurtosis ≈ 21.6735), suggesting the presence of extreme positive outliers and infrequent large losses. Such characteristics highlight the volatile nature of stock returns in the Nigerian agricultural sector and underscore the risks and opportunities facing investors.
Environmental costs (ENC) were minimal on average, with a mean of 0.0026, representing only 0.26 percent of total expenses. The standard deviation was 0.0059, indicating that while most firms invested very little in environmental activities, a few firms recorded higher expenditures, with a maximum value of 0.0277. The distribution was positively skewed (skew = 2.5797) and leptokurtic (kurtosis ≈ 9.4136), showing that environmental spending was concentrated among a small number of firms. Social costs (SOC) were significantly higher, averaging 0.0961 or 9.61 percent of total expenses, with a standard deviation of 0.1433, revealing substantial variation across firms. Some

firms allocated nothing to social activities, while others invested as much as 74.83 percent of their expenses, resulting in a positively skewed distribution (skew = 2.4297) and high kurtosis (≈9.9079). Similarly, governance costs (GOC) averaged 0.1099 (10.99 percent of expenses) with a standard deviation of 0.1408, ranging from 0 to 0.6528. The distribution was also positively skewed (skew = 1.7345) and leptokurtic (≈5.8621), reflecting wide variations in governance-related expenditures. Overall, the descriptive analysis suggests that while MPER was highly volatile, most firms spent very little on environmental initiatives, and social and governance costs were relatively higher, exhibiting extreme outliers and considerable disparity among firms. These patterns indicate the differing priorities and resource allocation strategies among the listed agricultural companies in Nigeria.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
MPER	55	0.4406	1.3822	-0.6037	8.3000	4.0988	21.6735
ENC	55	0.0026	0.0059	0.0000	0.0277	2.5797	9.4136
SOC	55	0.0961	0.1433	0.0000	0.7483	2.4297	9.9079
GOC	55	0.1099	0.1408	0.0000	0.6528	1.7346	5.8621
D_MPER	26	-0.6791	1.2991	-3.8918	2.1163	-0.2418	3.6938
D_ENC	13	-4.6900	0.6328	-5.6918	-3.5866	0.2117	2.0106
D_SOC	48	-3.0996	1.4740	-6.7099	-0.2900	-0.1411	2.2803
D_GOC	53	-2.9618	1.3135	-5.2079	-0.4264	0.2599	1.6929

Source: Researchers' Computation (2025).

4.2. Test of variables

Relevant pre-estimation and post-estimation tests were done to check the model efficiency, and the pre-estimation tests included the unit root test, the correlation test, and the multicollinearity to ensure the validity and reliability of the results of the study.

4.2.1. Pre-estimation test

To make sure that the assumptions of the selected model were fulfilled and that there was enough data for analysis, the following tests were conducted.

4.2.1.1. Panel unit root test of the variables

As reported in Table 3, the variable in the panel data was checked to see if it is stationary by using the Harris-Tzavalis test. The null hypothesis assumes that there is a unit root(non-stationary) in these panels, and the alternative hypothesis assumes that the panels are stationary. In case the p-value is smaller than 0.05, the null hypothesis is rejected, and vice versa. All the p-values of the variables are 0.0000, which is less than the significance level of 0.05, and this means the null hypothesis is rejected. Thus, the research comes to the conclusion that the variables are stationary within the panels.

Table 3: Panel Unit Root Test

Variable	Harris-Tzavalis unit-root test	
	Z-statistics	P-value
MPER	-8.2683	0.0000
ENC	-3.3351	0.0000
SOC	-3.6042	0.0000
GOC	-4.0021	0.0000

Source: Researchers' Computation (2025).

4.2.1.2. Multicollinearity

Variance Inflation Factor is used to determine the degree of variance inflating in an estimate of a regression coefficient as a result of multicollinearity, as reported in Table 4. Although less than 5 indicates little multicollinearity, a VIF index of more than 10 means that there is extreme multicollinearity. VIF value of the GOC is 1.16, whereas the VIF value of ENC is 1.09. This marks a rather close multicollinearity. In the case of SOC, VIF is 1.06, which suggests that there is no concern of multicollinearity. There is no collinearity in the whole model.

Table 4: Variance Inflation Factor

Variable	VIF	1/VIF
GOC	1.16	0.863684
ENC	1.09	0.914305
SOC	1.06	0.940427
Mean		1.1

Source: Researchers' Computation (2025).

4.2.2. Post-estimation tests

As reported in Table 5, the Ramsey RESET test was applied to study the suitability of the model specifications. The alternative hypothesis states that the model is not properly specified, and the null hypothesis claims that the model is properly specified. The assumption is that F-statistics and p-values less than 0.05 indicate a model specification error. The test outcomes show that the model has a bias effect due to the omitted variables, nor is it poorly specified (with respect to the functional form). With an F-statistic equal to 1.25 and a p-value of 0.3018, the model cannot be considered biased or improperly specified. The test that was also employed was the Breusch-Pagan/Cook-Weisberg test, which was used to test the constant variance of residuals or differences with the fit values. When the p-value (p- p-value < 0.05) is significant, and the chi-square test statistic is higher, then it indicates heteroskedasticity; otherwise, homoskedasticity is indicated. The results of the test were a chi-square of 9.00 and a p-value of 0.0027. The null hypothesis of constant variance was thus rejected, and this means that there is evidence of heteroskedasticity in the residuals of the model used in the study. The implication of this is that the

variance of the residuals is not constant but depends upon the fitted values. The Shapiro-Wilk test has again been used to ascertain the normality of distributions of the variables. In case the p-value is less than 0.05, the null hypothesis is rejected; otherwise, it is accepted as one of the normal distribution. The fact that the null hypothesis may be rejected using the p-value 0.0000 means that the data used, in this case, is not distributed normally. Due to this, all variables were transformed.

Moreover, the data having distribution in autocorrelation was not found in the data through the test of Wooldridge, which has a p-value of 0.6377. This shows that autocorrelation of the first order does not exist. However, in a fixed effects model, the F-test is used to test whether the firm or the group-specific effects are zero or not. The alternate hypothesis states that some of the individual effects are not equal to zero but the null hypothesis claims that all individual effects equal to zero. The null hypothesis is accepted in cases when the p-value is not smaller than 0.05. The F-test outcomes demonstrated that the chances of the fixed model working are low, as the F-statistic is 0.83 and the p-value is 0.5109. The Breusch and Pagan Lagrange multiplier test was used to check the accuracy of the estimate between the pooled OLS and the random effect model. The test statistic = 0.30, and the p-value 0.2913. This is an indicator that the random model is more appropriate. To show which was the best of the two models, fixed effects and the random effects, the Hausman test was applied. The random model was the best because the test result chi-square was 1.39 and the probability value was 0.9195.

Table 5: Summary of Post-Estimation Test Results

Test	F-Statistic	P-value
Ramsey RESET test	1.25	0.3018
Breusch-Pagan / Cook-Weisberg test	9.00	0.0027
Shapiro-Wilk test	11.295	0.0000
Wooldridge Test	1.6277	0.6377
F test that all ui=0: F (45, 549)	0.83	0.5109
Breusch and Pagan Lagrangian multiplier test	0.30	0.2913
Hausman Test	1.39	0.9195

Source: Researchers' Computation (2025).

4.3. Environmental, social, and governance (ESG) costs and market performance of listed agricultural firms in emerging markets

As reported in Table 6, a feasible generalised least squares regression analysis (FGLS) was done because of the existence of non-normality and heteroskedasticity in the given research. The analysis indicates a Wald Chi-squared (3) of 48.36 and a p-value of 0.0000. This means that the model is significant overall, and ENC, GOC, and SOC have a between-variation in MPER. At a p-value of 0.0000, the coefficient of ENC is -1.2071. This demonstrates that a 1 percent rise in environmental costs is linked to a one percent drop in the market performance, even after controlling for other factors. It means that the increasing cost of environmental care can be regarded as a burden of environmental regulations, or can depress short-run profitability, and thereby influence the performance negatively.

Similarly, the p-value of the coefficient of SOC is 0.0000 and 1.0027. This means that when there is a 1 per cent rise in social cost, the market performance will rise by 1.00 per cent. This implies that the performance might be enhanced through investment in employee welfare, CSR, and community engagement as a way of changing the firm's reputation, productivity, or consumer loyalty. On the other hand, we have the coefficient of GOC, which is -3.3243, and the p-value is 0.0000. This implies that the increase in governance costs by 1 percent is linked to the reduction in market performance by 3.32 percent. This means that any rise in spending that relates to governance can be viewed as economically unfriendly due to a lack of efficiency and excessive regulation in the short term. Generally, the rise in both governance and environment costs has been very much linked with firm performance deterioration. The social investments, on the other hand, however, seem to have an effect of improving performance indicating a positive attitude or incentive on the market or an advantage in operations of social responsibility.

Table 6: Cross-Sectional Time-Series FGLS Regression

MPER	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
ENC	-1.2071	0.3170	-3.8100	0.0000	-1.8285	-0.5857
SOC	1.0027	0.2279	4.4000	0.0000	0.5560	1.4494
GOC	-3.3243	0.9270	-3.5900	0.0000	-5.1412	-1.5075
cons	-16.2669	2.8757	-5.6600	0.0000	-21.9031	-10.6307
Wald chi2(3)	48.3600					
Prob > chi2	0.0000					

Source: Researchers' Computation (2025).

4.4. Discussion of findings

In this paper, the researchers aimed to examine the impacts of ESG expenses on listed agricultural firms in the Nigerian market. The research aim is to ascertain the impact that environmental, social, and governance expenditure has on market performance as measured by, among others, stock returns. The result of the regression analysis done indicated that the social costs positively and significantly influence the performance of agricultural firms in the market in Nigeria. This implies that investments in corporate socially responsible practices can help to improve the corporate image, enable beneficial relations with the stakeholders, and even result in improved financial performance. These results are in line with the results of Alonso-Almeida et al. (2022), Fatemi et al. (2023), and Khan et al. (2023), to have discovered that investments in socially accountable practices can improve the corporate reputation, the trust of the stakeholders, and cause financial prospects to improve.

The findings also showed that environmental and governance expenditures exerted negative and significant effects on market performance, a result that required deeper conceptual interpretation within the context of emerging markets. In such environments, environmental compliance often carries high upfront costs, inefficient enforcement mechanisms, and limited supporting infrastructure. These conditions increase the likelihood that environmental spending becomes reactive, compliance-driven, and cost-intensive rather than strategically aligned with long-term value creation. Consequently, investors may perceive these expenses as eroding short-term profitability, especially when the benefits, such as pollution reduction, certification, or improved risk ratings, take time to materialise. Similarly, governance expenditures may generate negative responses when they reflect bureaucratic expansion, excessive monitoring structures, or regulatory-driven board adjustments that do not immediately strengthen operational efficiency. In emerging markets like Nigeria, weak institutional enforcement, fragmented regulatory oversight, and elevated compliance costs heighten the possibility that governance spending is interpreted as a

financial burden rather than as an investment in stability and transparency. These dynamics help explain why environmental and governance costs reduced market performance, aligning with cost–benefit trade-off models and risk-based theories suggesting that investors discount firms whose regulatory obligations appear costly, non-strategic, or uncertain in outcome. The findings therefore reinforce that without strategic integration and clear value pathways, ESG spending, particularly in environmental and governance domains, may generate negative risk perceptions and depress market valuations in the short run. These results confirm the results of Nwokolo et al. (2023) and Lee and Kim (2022), who discovered that environmental and governance investments are inevitable, but they can create medium-run financial impositions or state inefficiencies when not strategically integrated into the main processes.

The results of this research are consistent with both the stakeholder theory and institutional theory, according to which the relationship between corporate responsibility and market performance is rather complicated. According to the stakeholder theory, companies that tend to take the needs and the interests of key stakeholders, including employees, communities, and customers, will have higher chances of attaining sustainability in their performance (Dagunduro et al., 2023). This opinion is confirmed by the positive impact of social costs on the performance of a market, which indicates that socially responsible practices will contribute to more stakeholder faith and a corporate image to financial gains. On the other hand, the adverse effect of environmental and governance charges fits into the institutional theory, which stresses that companies can develop some practices being subjected either to regulatory pressure or normative expectations as opposed to strategic adaptation, thus, creating a compliance burden that exceeds the short-term economic gains (DiMaggio & Powell, 1983). This implies that unless environmental and governance programs are effectively incorporated into the business model, there would arise a perception that they are expensive and signs of duty elements as opposed to value-creating investment elements.

5. Conclusion and Recommendations

This study examined how Environmental, Social, and Governance (ESG) costs influenced the market performance of listed agricultural firms in Nigeria, using stock returns as the primary indicator. The findings showed that social expenditure exerted a positive and significant effect on market performance, indicating that investments in community welfare, employee-related programmes, and stakeholder engagement enhanced firm value by strengthening reputation and investor confidence. Conversely, environmental and governance costs had negative and significant effects, suggesting that in emerging markets where compliance costs are high and institutional enforcement is weak, these expenditures may impose short-term financial burdens when not strategically aligned with core business activities.

Theoretically, the study strengthened stakeholder theory by demonstrating that socially oriented investments produced tangible financial benefits through improved legitimacy and trust. It also reinforced institutional theory by showing that environmental and governance spending may become compliance-driven obligations that undermine short-term profitability when regulatory structures are weak or costly. This contributes sector-specific empirical evidence to the ESG–ESG-performance debate in emerging markets.

Based on empirical findings, several practical and policy recommendations emerged.

1) Agricultural firms should sustain and expand social investments, as their positive coefficient confirms that they enhance market valuation. Companies can operationalise this by adopting dedicated social-impact budgets, embedding community development targets into performance metrics, and improving disclosure on social initiatives to attract socially conscious investors.
2) Firms should integrate environmental costs into product pricing, invest in cleaner technologies, and adopt phased compliance strategies. Regulators can support this by offering incentives such as tax relief for green innovation and sector-specific environmental compliance roadmaps.
3) Firms should streamline board processes, adopt digital governance tools, and implement cost-effective oversight mechanisms. Regulatory bodies can enhance this by issuing benchmarks for governance expenditure and strengthening capacity-building programmes for board members.

For investors, clearer disclosure linking ESG costs to financial outcomes remains essential. Firms are encouraged to adopt integrated reporting, provide narrative explanations of ESG strategies, and specify how sustainability investments contribute to long-term value creation, thereby improving transparency and investor decision-making.

Future research could extend the analysis across multiple sectors to improve generalisability, examine moderating effects such as firm size, ownership structure, governance quality, and institutional strength, and conduct comparative cross-country studies. Further work on ESG assurance, cost–benefit trade-offs, and long-term valuation effects would deepen understanding of sustainability investment outcomes in emerging markets.

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