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- I. Title page
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- IV. Introduction
- V. Literature Review
- VI. Methodology
- VII. Results and Discussion
- VIII. Conclusion and Recommendations
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EFFECT OF ECONOMIC, SOCIAL AND GOVERNANCE DISCLOSURES ON FIRM VALUE AND THE MODERATING EFFECT OF LEVERAGE. A STUDY OF LISTED NON-FINANCIAL FIRMS IN NIGERIA

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ABSTRACT

In recent years, ESG disclosure has been promoted as a mechanism for improving corporate transparency and enhancing firm value, yet empirical evidence from emerging economies remains inconclusive. This study explores the effect of economic, social and governance disclosures on firm value among listed non-financial firms in Nigeria. ESG disclosure scores are derived from firms' annual reports using content analysis, while firm value is measured by Tobin's Q. Recognizing that firm-specific conditions may influence market perceptions, the study introduces financial leverage as a moderating variable. Using panel data regression techniques, the findings show that economic and governance disclosures are positively associated with firm value, whereas social disclosure does not exhibit a significant effect. The interaction analysis further indicates that higher leverage weakens the valuation benefits of ESG disclosure. These results align with signalling and stakeholder theories and reflect the cautious response of investors to sustainability information in markets with elevated financial risk. The study contributes to the growing ESG literature by providing evidence from Nigeria and highlights the importance of financial structure in shaping the value relevance of sustainability reporting.

Keywords: ESG disclosure; firm value; financial leverage; sustainability reporting

1.0 Introduction

Over the past decade, environmental, social, and governance (ESG) issues have become increasingly central to discussions around corporate transparency and firm valuation. Investors, regulators, and other market participants now recognize that financial statements alone may not fully capture a firm's long-term prospects, particularly in environments marked by economic volatility and institutional weaknesses. As a result, ESG disclosures have emerged as an important source of supplementary information, offering insights into firms' risk management practices, ethical standards, and commitment to sustainable value creation (Friede et al., 2015; Bhandari & Javakhadze, 2017).

Notwithstanding this growing interest, empirical evidence on the relationship between ESG disclosure and firm value remains far from settled. While studies from developed markets frequently report that firms with stronger ESG engagement or disclosure enjoy valuation premiums, findings from emerging economies are considerably more mixed. In some cases, ESG disclosure appears to enhance firm value; in others, the relationship is weak or statistically

insignificant, and occasionally even negative. These inconsistencies suggest that the market valuation of ESG information may depend heavily on contextual factors such as institutional quality, regulatory enforcement, and firm-specific characteristics (Alareeni & Hamdan, 2020; Wong et al., 2021).

The Nigerian setting offers a particularly useful context for examining these issues. As the largest economy and capital market in sub-Saharan Africa, Nigeria presents both opportunities and challenges for ESG-oriented research. On the one hand, listed firms operate in sectors with significant environmental and social footprints, making sustainability concerns especially salient. On the other hand, the Nigerian capital market is characterized by weak investor protection, uneven disclosure enforcement, and varying levels of reporting quality. Although governance disclosures are largely mandated through corporate governance codes, environmental and social disclosures remain mostly voluntary, resulting in substantial variation across firms and sectors. This raises an important question as to whether ESG disclosures, beyond governance, are meaningfully incorporated into firm valuation by investors.

Existing studies on ESG disclosure in Nigeria and similar African markets have made valuable contributions but remain limited in important respects. Many adopt an aggregate ESG measure, thereby masking potential differences in how environmental, social, and governance disclosures individually affect firm value. Others focus predominantly on governance variables, reflecting their regulatory prominence, while paying less attention to environmental and social dimensions that are increasingly relevant to stakeholders. Consequently, there is still limited empirical clarity on which components of ESG disclosure matter most for firm value in the Nigerian context (Uwuigbe et al., 2022; Sadiq et al., 2022; Aifuwa et al., 2023).

A further limitation in the existing literature relates to the treatment of firm financial structure. Financial leverage, in particular, has typically been included as a control variable rather than examined as a factor that may shape the effectiveness of ESG disclosures. This represents an important omission, as leverage influences both managerial behaviour and investor perception. Highly leveraged firms face greater monitoring by creditors and tighter financial constraints, which may affect their ability to invest in sustainability initiatives and the credibility of related disclosures. Investors may also interpret ESG information differently depending on a firm's debt profile, especially in markets where financial risk is closely scrutinized (Issa & Zouari, 2024).

Against this backdrop, this study addresses two interrelated issues. First, it examines the separate effects of environmental, social, and governance disclosures on firm value among listed Nigerian manufacturing and consumer goods firms. Second, it investigates whether financial leverage moderates these relationships, thereby conditioning the extent to which ESG disclosures are reflected in market valuation. By focusing on a sector with relatively high exposure to ESG-related risks and by explicitly incorporating firm financial structure into the analysis, the study seeks to provide more nuanced and context-sensitive evidence on the value relevance of ESG disclosures in Nigeria.

In doing so, the study contributes to the growing ESG literature in emerging markets by moving beyond aggregate ESG measures and by highlighting the circumstances under which ESG disclosures are more or less value relevant. The findings are expected to offer useful insights for regulators seeking to strengthen sustainability reporting frameworks, for managers aiming to align disclosure strategies with market expectations, and for investors navigating ESG-related information in developing capital markets.

2.0 Literature Review

2.1 Conceptualization

Environmental, social, and governance disclosures now occupy a central place in discussions about how firms create and sustain value, particularly as investors increasingly look beyond traditional accounting numbers when forming expectations about future performance. At a conceptual level, ESG disclosures reflect how firms communicate their approach to managing non-financial risks, stakeholder relationships, and internal decision-making structures. Although ESG is often treated as a single construct, recent scholarship cautions that its constituent dimensions operate through different mechanisms and should therefore be examined separately if their economic implications are to be properly understood (Christensen et al., 2022; Fatemi et al., 2023).

Environmental disclosure relates to the information firms provide about their interaction with the natural environment, including emissions management, energy use, waste control, environmental compliance, and exposure to climate-related risks. Much of the conceptual thinking around environmental disclosure draws on legitimacy theory, which suggests that firms disclose environmental information to demonstrate alignment with societal expectations and regulatory norms. From this perspective, disclosure serves as a means of maintaining organizational legitimacy and safeguarding access to critical resources (Atan et al., 2022; Pankratz & Zeisberger, 2023). Stakeholder theory further suggests that such disclosures may influence firm value by reassuring regulators, communities, and investors that environmental risks are being actively managed.

Yet the conceptual link between environmental disclosure and firm value is far from straightforward. Environmental initiatives often entail visible and sometimes substantial costs, while their financial benefits may materialize only in the long term. In settings where regulatory enforcement is uneven or where capital markets remain short-term oriented, investors may interpret environmental disclosure less as a signal of strategic foresight and more as a compliance-driven obligation. This ambiguity is particularly evident in emerging market contexts, where environmental disclosure may be motivated by symbolic considerations rather than by a clear value-maximizing strategy (Uwuigbe et al., 2022; Broadstock et al., 2022).

Social disclosure captures firms' communication of their relationships with employees, customers, suppliers, and host communities. It typically includes information on employee welfare, health and safety, training and development, diversity initiatives, community engagement, and customer responsibility. Conceptually, social disclosure is firmly rooted in stakeholder theory, which emphasizes that long-term

firm success depends on the quality of relationships with key stakeholder groups (Barnett & Salomon, 2023). By disclosing social practices, firms signal a willingness to invest in relational capital, which may enhance reputation and foster trust.

However, the economic relevance of social disclosure is conceptually less immediate than that of governance mechanisms. The benefits associated with social initiatives are often indirect and diffuse, and their impact on financial outcomes may take time to emerge. As a result, capital markets may struggle to fully price social disclosure, particularly in institutional environments characterized by limited ESG integration or weak disclosure standards. Prior studies suggest that the valuation relevance of social disclosure varies widely across contexts, reflecting differences in investor expectations and institutional development (Adegboye et al., 2024; Wong et al., 2023).

Governance disclosure concerns firms' reporting on internal control systems and oversight structures, including board composition, board independence, ownership structure, audit committee effectiveness, executive remuneration, and risk management arrangements. Among the ESG dimensions, governance disclosure is most directly linked to agency theory, which views transparency and monitoring as essential mechanisms for reducing conflicts of interest between managers and shareholders. By disclosing governance structures, firms provide insight into how managerial discretion is constrained and how strategic decisions are supervised (García-Sánchez et al., 2023).

Conceptually, governance disclosure is often regarded as the most immediately value-relevant ESG component, particularly in emerging markets where agency problems tend to be more pronounced and investor protection mechanisms are weaker. Transparent governance arrangements can reduce information asymmetry, enhance investor confidence, and lower perceived agency risk, thereby improving firm valuation. Evidence from African markets consistently suggests that governance-related disclosures carry greater weight in investors' valuation decisions than environmental or social disclosures (Odoemelam & Okafor, 2023; Adegbite et al., 2023).

Firm value, as the outcome of interest in this study, represents the market's assessment of a firm's ability to generate future economic benefits. Conceptually, firm value reflects expectations about future cash flows, growth opportunities, and risk exposure, all of which are shaped by both financial performance and non-financial information. Market-based measures such as Tobin's Q are particularly relevant in this regard, as they incorporate investors' forward-looking

assessments and capture the perceived value of intangible assets (Albuquerque et al., 2022; Broadstock et al., 2022).

An important insight emerging from recent literature is that the relationship between ESG disclosures and firm value is not uniform across firms. Financial structure, especially the degree to which firms rely on debt financing, plays a critical role in shaping how ESG information is interpreted. In firms with high leverage, managers face tighter cash flow constraints and stronger monitoring by creditors, which may influence both the scope of ESG activities and how such disclosures are perceived by investors. Under these conditions, environmental and social disclosures may be viewed as costly commitments, while governance disclosure may be interpreted as a reassuring signal of managerial discipline and accountability (Fatemi et al., 2023; Adegboye et al., 2024).

In contexts such as Nigeria, where firms often operate under significant financing constraints and capital markets remain sensitive to risk, financial leverage is therefore central to understanding the valuation relevance of ESG disclosures. Rather than exerting a direct effect on firm value, leverage shapes the conditions under which different ESG dimensions are either rewarded or discounted by the market.

This conceptual review suggests that environmental, social, and governance disclosures influence firm value through distinct yet interconnected mechanisms, and that their effects are conditioned by firms' financial structure. On this basis, this study examines the extent to which environmental, social, and governance disclosures influence firm value, as well as whether these relationships are moderated by firms' financial leverage. To facilitate objective empirical testing, the hypotheses are stated in the null form as follows:

- i. H_{0_1} : Environmental disclosure has no significant effect on firm value.
- ii. H_{0_2} : Social disclosure has no significant effect on firm value.
- iii. H_{0_3} : Governance disclosure has no significant effect on firm value.
- iv. H_{0_4} : Financial leverage does not significantly moderate the relationship between environmental disclosure and firm value.
- v. H_{0_5} : Financial leverage does not significantly moderate the relationship between social disclosure and firm value.
- vi. H_{0_6} : Financial leverage does not significantly moderate the relationship between governance disclosure and firm value.

2.2 Empirical Literature

Empirical research examining the relationship

between environmental, social, and governance (ESG) practices and firm value has expanded rapidly in recent years, yet the evidence remains far from uniform. While a growing body of studies documents a positive association between ESG engagement and firm value, others report weak, conditional, or even negative effects, suggesting that the valuation relevance of ESG is shaped by context, firm characteristics, and institutional quality.

Several large-sample international studies find that firms with stronger ESG performance enjoy higher market valuation, commonly measured using Tobin's Q or market-to-book ratios. These studies argue that ESG engagement enhances transparency, reduces information asymmetry, and signals superior managerial quality to investors (Albuquerque et al., 2022; Broadstock et al., 2022; Fatemi et al., 2023). From this perspective, ESG practices are viewed not merely as ethical commitments but as strategic investments that strengthen long-term value creation.

More recent empirical work emphasizes the risk mitigation channel through which ESG affects firm value. Evidence suggests that ESG-oriented firms tend to experience lower downside risk, reduced stock price volatility, and greater resilience during economic shocks. Pankratz and Zeisberger (2023) show that firms with strong environmental performance are better positioned to manage climate-related risks, while studies such as Broadstock et al. (2022) and Bolton and Kacperczyk (2023) demonstrate that ESG performance becomes particularly valuable during periods of heightened uncertainty. These findings imply that ESG may contribute to firm value by stabilizing expected cash flows rather than boosting short-term earnings.

Despite these positive findings, a growing number of studies report insignificant or weak relationships between ESG performance and firm value. Christensen et al. (2022) argue that once firm fundamentals and governance quality are adequately controlled for, ESG indicators add little incremental explanatory power. Similarly, Wong et al. (2023) find that in markets where ESG reporting lacks standardization and enforcement, investors may discount ESG disclosures due to concerns about credibility and comparability.

Other studies go further by documenting negative or non-linear effects of ESG on firm value. Atan et al. (2022) report that extensive ESG investments can exert downward pressure on firm value in the short run due to high implementation and compliance costs. Barnett and Salomon (2023) also identify an inverted U-shaped relationship, suggesting that while moderate ESG engagement enhances firm value, excessive ESG commitment may lead to diminishing returns. These findings challenge the assumption that ESG engagement is uniformly value-enhancing.

An important insight from the recent literature is that the ESG–firm value relationship is often conditional on firm-specific characteristics. García-Sánchez et al. (2023) show that ESG performance is more strongly associated with firm value in firms with effective governance structures, where managerial opportunism is constrained. Nguyen et al. (2024) similarly find that firm size, leverage, and industry sensitivity significantly moderate the valuation effects of ESG activities. These results suggest that ESG outcomes depend not only on disclosure levels but also on the organizational context in which ESG practices are implemented.

Evidence from Africa and other emerging markets further highlights the importance of institutional context. Adegbite et al. (2023) demonstrate that ESG disclosure is more value-relevant in countries with stronger legal enforcement and investor protection mechanisms. In weaker institutional environments, ESG disclosures appear less informative to investors, limiting their impact on firm valuation.

Studies focusing specifically on Nigeria present particularly mixed evidence. Odoemelam and Okafor (2023) find that governance-related disclosures are positively associated with firm value, whereas environmental and social disclosures show limited or insignificant effects. Adegboye et al. (2024) report that ESG disclosure enhances firm value only when moderated by favourable firm characteristics such as lower leverage and larger firm size. Uwuigbe et al. (2022) further argue that environmental disclosure in Nigeria is often compliance-driven rather than performance-oriented, which may explain its weak valuation relevance.

Methodologically, the empirical literature continues to face challenges related to ESG measurement, endogeneity, and cross-country comparability. ESG proxies vary widely across studies, ranging from third-party ratings to disclosure indices, raising concerns about consistency. Moreover, reverse causality remains a concern, as financially strong firms may be more capable of investing in ESG initiatives (Fatemi et al., 2023; García-Sánchez et al., 2023). Although recent studies increasingly employ panel techniques and fixed-effects estimators, causal inference remains limited, particularly in African contexts.

Overall, the empirical evidence suggests that the impact of ESG on firm value is neither automatic nor uniform. Rather, it is shaped by firm characteristics, governance quality, and institutional conditions. These mixed and context-dependent findings provide a strong justification for examining the ESG–firm value relationship in Nigeria using a moderated empirical framework that explicitly accounts for firm-specific factors.



2.3 Theoretical Framework

This study is anchored primarily on stakeholder theory and signalling theory to explain the relationship between ESG disclosures and firm value, with insights from agency theory providing additional support. Stakeholder theory posits that firms create long-term value by responding not only to shareholders but also to a wider group of stakeholders, including employees, customers, regulators and host communities (Freeman, 1984). ESG disclosures serve as a mechanism through which firms communicate their commitment to responsible and sustainable practices, thereby strengthening stakeholder trust and enhancing corporate reputation. In emerging markets such as Nigeria, where formal monitoring mechanisms may be weak, transparent ESG reporting becomes particularly important in shaping stakeholder perceptions.

Signalling theory complements this perspective by suggesting that firms use voluntary disclosures to convey private information about their quality and future prospects to the market (Spence, 1973). ESG disclosures can therefore act as positive signals, helping to reduce information asymmetry between managers and investors. Firms with stronger environmental, social and governance practices are expected to disclose more credible ESG information, which may translate into higher market valuation. However, the strength of this signal may depend on firm-specific conditions, such as financial leverage, which can influence how investors interpret sustainability-related information.

Agency theory further provides a useful lens by highlighting potential conflicts between managers and shareholders arising from information asymmetry and divergent interests (Jensen & Meckling, 1976). From this perspective, ESG disclosure can function as a monitoring tool that constrains managerial opportunism and improves transparency, thereby supporting firm value. Taken together, these theories provide a coherent framework for understanding how ESG disclosures influence firm value and why this relationship may vary across firms.

3.0 Methodology

This section contains a discussion on the research design, population, sample, model specification, variable measurement and technique of analysis of the study. This study adopts an ex post facto research design, which is appropriate given that the analysis relies on historical firm-level data. Ex post facto designs are widely used in empirical accounting and finance research, particularly in studies examining the relationship between ESG performance and firm value, as they allow researchers to infer associations from observed corporate behaviour over time (Albuquerque et al., 2022; García-Sánchez et al., 2023). The choice of this design is further justified by

the nature of ESG practices, which evolve gradually and are embedded within firms' strategic and reporting decisions. The analysis focuses on Manufacturing and Consumer goods firms listed on the Nigerian Exchange Group (NGX). This sector was selected because it is among the most environmentally and socially exposed sectors in Nigeria and has shown relatively higher engagement with sustainability and governance disclosures compared to other non-financial sectors. Manufacturing firms are subject to greater regulatory scrutiny regarding environmental compliance, labour practices, and corporate governance, making them suitable for examining the value relevance of ESG disclosures. The final sample comprises 52 listed firms, yielding 416 firm-year observations after controlling for missing data. This sample size provides sufficient variation across firms and time to support panel regression analysis. The analysis begins with descriptive statistics to provide an overview of the key variables and to highlight general patterns in ESG disclosures and firm value across the sample firms. A correlation analysis is then conducted to examine the direction of association among the variables and to ensure that multicollinearity is not a concern. To test the study's hypotheses, panel regression models are estimated. Both fixed effects and random effects specifications are initially considered, and the Hausman test is employed to guide the selection of the most appropriate model for the analysis. To assess the moderating role of financial leverage, interaction terms between the ESG disclosure components and leverage are incorporated into the regression model. All estimations and statistical analyses are performed using Stata.

Model Specification: The firm model which is the baseline model is specified to allow the study to examine whether investors in Nigeria respond differently to each ESG dimension. The baseline model is specified as:

$$FV_{it} = \beta_0 + \beta_1 ENVD_{it} + \beta_2 SOCD_{it} + \beta_3 GOVD_{it} + \beta_4 SIZE_{it} + \beta_5 AGE_{it} + \epsilon_{it} \dots \dots \dots 1$$

where FV_{it} denotes firm value (Tobin's Q) for firm i in year t , $ENVD_{it}$, $SOCD_{it}$, and $GOVD_{it}$ represent environmental, social, and governance disclosure scores, respectively; $SIZE$ and AGE are control variables of firm size and firm age respectively and ϵ_{it} is the error term.

The second model is stated as below to determine the moderating effect of leverage on the relationship between ESG disclosure and Firm value:

$$FV_{it} = \beta_0 + \beta_1 ENVD_{it} + \beta_2 SOCD_{it} + \beta_3 GOVD_{it} + \beta_4 LEV_{it} + \beta_5 (ENVD_{it} \times LEV_{it}) + \beta_6 (SOCD_{it} \times LEV_{it}) + \beta_7 (GOVD_{it} \times LEV_{it}) + \epsilon_{it} \dots \dots \dots 2$$

This specification allows the study to examine whether leverage strengthens or weakens the valuation effects of each ESG dimension.

Table 1: Variable Measurement

Variable	Symbol	Measurement	Source / Supporting Literature
Firm Value	FV	Tobin's Q = (Market value of equity + Book value of total liabilities) / Book value of total assets	Albuquerque et al. (2022); Broadstock et al. (2022); Fatemi et al. (2023)
Environmental Disclosure	ENVD	Environmental disclosure index based on content analysis of annual and sustainability reports; items scored 1 if disclosed, 0 otherwise, scaled	Atan et al. (2022); Uwuigbe et al. (2022); Pankratz & Zeisberger (2023)
Social Disclosure	SOCD	Social disclosure index capturing employee welfare, community engagement, health and safety, diversity, and customer responsibility	Barnett & Salomon (2023); Adegboye et al. (2024)
Governance Disclosure	GOVD	Governance disclosure index covering board structure, independence, ownership structure, audit committee, executive compensation, and internal controls	García-Sánchez et al. (2023); Odoemelum & Okafor (2023)
Financial Leverage	LEV	Total debt divided by total assets	Atan et al. (2022); Fatemi et al. (2023); Adegboye et al. (2024)
Firm Size	SIZE	Natural logarithm of total assets	Nguyen et al. (2024)
Firm Age	AGE	Number of years since incorporation	Adegbite et al. (2023)

4.0 Results and Discussion

This section presents and discusses the empirical findings on the relationship between environmental, social, and governance (ESG) disclosures and firm value among listed Nigerian firms.

4.1 Descriptive Statistics

The table below presents the descriptive statistics result

Table 2 Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
Tobin's Q	1.28	0.54	0.61	3.45
Environmental Disclosure (ENVD)	0.37	0.18	0.05	0.82
Social Disclosure (SOCD)	0.42	0.21	0.08	0.89
Governance Disclosure (GOVD)	0.63	0.17	0.29	0.94
Financial Leverage (LEV)	0.46	0.19	0.11	0.81
Firm Size (SIZE)	22.91	1.37	20.04	26.88
Firm Age (AGE)	34.6	18.2	5	94

The mean Tobin's Q of 1.28 indicates that, on average, market valuation exceeds book value, although there is considerable dispersion. Governance disclosure exhibits the highest mean among the ESG dimensions, reflecting the relatively stronger emphasis Nigerian firms place on governance-related reporting, largely due to regulatory requirements. Environmental disclosure records the lowest mean, consistent with evidence that environmental reporting remains largely voluntary and uneven across Nigerian firms.

4.2 Correlation Matrix

This sub-section presents the Pearson correlation coefficients among the key variables.

Table 3: Correlation Matrix

Variable	TQ	ENVD	SOCD	GOVD	LEV
Tobin's Q	1.00				
ENVD	0.18***	1.00			
SOCD	0.22***	0.54***	1.00		
GOVD	0.31***	0.41***	0.48***	1.00	
LEV	-.00	-0.07	-0.05	-0.14**	1.00



4.3 Regression Results
Table 4: Regression Result for Model 1

Variable	Coefficient	t-value	p-value
ENVD	0.214	2.31	0.021
S OCD	0.167	1.94	0.053
GOVD	0.382	4.87	0.000
LEV	-0.298	-3.76	0.000
SIZE	0.145	2.89	0.004
AGE	0.061	1.21	0.227
R square	0.41		
F. statistics	18.72		0.001

The correlations suggest a positive association between ESG disclosures and firm value, particularly for governance disclosure. Financial leverage is negatively correlated with firm value, consistent with the risk-sensitive nature of the Nigerian capital market. Importantly, no correlation coefficient exceeds 0.70, indicating the absence of serious multicollinearity concerns.

The results in Table 4.3 show that environmental disclosure has a positive and statistically significant effect on firm value ($\beta = 0.214$; $p = 0.021$), indicating that firms with more extensive environmental reporting tend to enjoy higher market valuation. This finding supports stakeholder and legitimacy theories, which suggest that environmental transparency enhances stakeholder confidence and organizational legitimacy. The result is consistent with prior Nigerian and African studies that document a positive link between environmental disclosure and firm value (Adegboye et al., 2022; Ofoegbu et al., 2023). Accordingly, the null hypothesis that environmental disclosure has no significant effect on firm value is rejected.

Social disclosure is positively related to firm value ($\beta = 0.167$), although the effect is only marginally significant ($p = 0.053$). This suggests that social disclosure is weakly valued by investors, reflecting the largely discretionary nature of social reporting in Nigeria. Similar mixed results have been reported in earlier studies on emerging markets. Therefore, the null hypothesis on social disclosure is rejected at the 10% level, indicating limited but positive value relevance.

Governance disclosure exhibits a strong positive and highly significant association with firm value ($\beta = 0.382$; $p < 0.001$). This confirms that governance transparency is the most value-relevant ESG component in the Nigerian market. The result is consistent with agency and signalling theories and

Table 4.4 shows that the positive direct effects of environmental ($\beta = 0.246$; $p = 0.010$), social ($\beta = 0.181$; $p = 0.044$), and governance disclosures ($\beta = 0.401$; $p < 0.001$) remain robust after introducing interaction terms.

The interaction between environmental disclosure and leverage is negative and significant ($\beta = -0.129$; $p = 0.047$), indicating that high leverage weakens the positive effect of environmental disclosure on firm value. This finding supports signalling theory, as ESG disclosures from highly leveraged firms may be viewed as less credible. Accordingly, the null hypothesis that leverage does not moderate the environmental disclosure–firm value relationship is rejected.

aligns with prior evidence from Nigeria and other African economies. Consequently, the null hypothesis that governance disclosure has no effect on firm value is rejected.

Financial leverage is negatively and significantly associated with firm value ($\beta = -0.298$; $p < 0.001$), suggesting that higher debt levels reduce market valuation. This finding supports agency theory and leads to the rejection of the null hypothesis relating to leverage.

Overall, the baseline model explains approximately 41% of the variation in firm value ($R^2 = 0.41$), and the model is statistically significant ($F = 18.72$, $p < 0.001$), indicating a good fit for panel data drawn from the Nigerian manufacturing sector.

Table 4: Regression Result for Model 2

Variable	Coefficient	t-value	p-value
ENVD	0.246	2.58	0.010
S OCD	0.181	2.02	0.044
GOVD	0.401	5.21	0.000
LEV	-0.341	-4.12	0.000
ENVD \times LEV	-0.129	-1.99	0.047
S OCD \times LEV	-0.098	-1.72	0.086
GOVD \times LEV	-0.162	-2.68	0.008
R square	0.47		
F. statistics	16.94		0.001

Similarly, the interaction between social disclosure and leverage is negative and marginally significant ($\beta = -0.098$; $p = 0.086$), suggesting that leverage dampens the valuation effect of social disclosure. This result aligns with prior evidence from emerging markets and leads to the rejection of the null hypothesis at the 10% level.

The interaction between governance disclosure and leverage is negative and statistically significant ($\beta = -0.162$; $p = 0.008$), indicating that although governance disclosure enhances firm value, its effect diminishes in highly leveraged firms. This finding refines agency theory by showing that governance mechanisms are less effective when financial risk is high. The null hypothesis relating to

governance–leverage interaction is therefore rejected. Overall, the increase in explanatory power (R^2 rising from 0.41 to 0.47) confirms that financial leverage plays a significant moderating role in the ESG–firm value relationship among Nigerian firms.

5.0 Conclusion and Recommendation

The findings indicate that ESG disclosures enhance firm value in Nigeria, but the impact is not uniform. Governance transparency is most valued by investors, reflecting concerns about accountability and information quality in the market. Environmental disclosure is increasingly relevant, while social disclosure remains less strongly priced. High leverage limits the value relevance of ESG disclosures, implying that sustainability signals are less effective when financial risk is elevated. Overall, ESG disclosures matter, but their influence depends on firms' financial conditions.

Regulators should improve the consistency and depth of ESG reporting standards, particularly for environmental and social disclosures. Firms should focus on credible governance and sustainability reporting that aligns with their financial capacity. Investors are encouraged to assess ESG disclosures together with leverage and other risk indicators. Future studies may explore other firm characteristics or sectors to further explain differences in ESG value relevance in emerging markets.

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