

External Audit Quality, Corporate Governance and ESG Disclosure Credibility: Moderating Evidence from Listed Firms in Sub-Saharan Africa

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Abstract

The research investigates the influence of corporate governance in improving the credibility of ESG reports of listed firms in Sub-Saharan Africa (SSA) and how external audit quality moderates this effect. Using agency theory, stakeholder theory, and institutional voids framework, the research hypothesizes that corporate governance practices could restrict opportunistic sustainability reporting. However, poor enforcement of regulations and institutional weaknesses may render their effect ineffective, while external audit quality could reinforce the impact of corporate governance practices. This research uses a hand-gathered data of 1,553 firm-year observations of 157 firms from Ghana, Kenya, Nigeria, and South Africa for the years 2015 to 2024. An index of corporate governance (CGI) is created using five measures of governance, whereas an index of the credibility of ESG disclosures (ESGDCI) is built using the factors of scope of reporting, cross-pillar balance, and yearly reporting consistency. The results show that there is a positive but non-significant relationship between corporate governance and ESG disclosure credibility ($\beta = 0.121$, $p = .130$). Likewise, the quality of external audit has no significant moderating effect on the relationship ($\beta = -0.046$, $p = .503$). Among the control variables, the variable of leverage is positively related to ESG disclosure credibility; however, the variables of inflation and GDP growth have negative effects on ESG disclosure credibility. These results can be attributed to the perspectives of institutional-voids and decoupling, where formal compliance with corporate governance standards does not lead to credible ESG disclosures because of the lack of regulatory enforcement and sustainability assurance mechanism in place. This study makes cross-country evidence from an underexplored African country.

Introduction

The process of ESG reporting has become less marginal and purely voluntary and has taken on greater significance as an important instrument of communications of companies with investors, regulators, and civil society concerning the company's non-financial performance (Gillan et al., 2021). However, the increasing popularity of ESG reporting is accompanied by worries about the credibility of much of it because companies may engage in selective disclosure, focus on positive indicators, or use inconsistent reporting over time, resulting in a credibility gap between ESG commitments and practice (Handayati et al., 2025). The credibility gap in ESG reporting has direct implications for the allocation of capital as stakeholders, which use ESG reporting as a tool for assessing risks or screening investments, can be no more informed than the disclosures allow them to be (Gillan et al., 2021).

Corporate governance is perceived as the main internal tool that generates credible and non-opportunistic disclosure, either financial or non-financial (Squires & Elnahla, 2020; Sun & Khan, 2023). It is believed that large boards, independent boards, gender-diverse boards, financially knowledgeable boards, and resource-rich boards in terms of board capital are effective at controlling management's decisions on sustainability reporting practices and thus limiting selective and symbolic ESG disclosure (Githaiga & Kosgei, 2023). The growing number of regulatory and stock exchange rules in Ghana, Kenya, Nigeria, and South Africa encourage or even require ESG disclosure in addition to financial disclosure on the assumption that good corporate governance results in credible sustainability disclosures (Githaiga & Kosgei, 2023; Munisi, 2020). Nevertheless, it is not clear whether such assumptions are valid in the Sub-Saharan Africa (SSA) institutional setting.

The capital markets of Sub-Saharan Africa are distinguished by their concentration of ownership, relatively immature sustainability reporting infrastructure, and codes of governance that are largely imported from the Anglo-American model and internationally without an equivalent enforcement capability in place (Kimani et al., 2021; Boolaky et al., 2020). In addition to being true for sustainability reporting in particular, this relative immaturity of the institutional context is true for other areas of corporate activity: even in the case of financial reporting, where IFRS compliance is already more developed, Mensah (2020) discovered that the adoption of IFRS led to a partial improvement of the financial reporting quality among listed manufacturing firms in Ghana, indicating that mere formal adoption of international standards in Sub-Saharan Africa does not necessarily result in higher quality disclosure. Under such an institutional environment, corporate governance structures can be adopted simply to meet listing requirements and convey legitimacy to foreign investors.

In light of this issue, recent SSA-specific studies appear to be rather inconclusive, as Githaiga and Kosgei (2023) report that some board-related features have a positive association with the level of ESG disclosure among SSA listed companies, while Anifowose (2025) finds that the governance features are positively related to ESG disclosure in nine SSA countries, yet does not find any evidence that the ownership structure acts as a moderator of such a link between corporate governance and ESG disclosure in SSA countries.

Secondly, the role of external audit quality is another issue. Big 4 auditors are argued to provide a reputation-based and technically-equipped form of external assurance that can serve to complement internal governance controls over sustainability disclosures (Alzoubi, 2018; Yeng & Oppong, 2024). The complementariness of external audit quality is consistent with evidence from financial reporting research where in Nigeria, Ahmed and Ibrahim (2024) demonstrated that the involvement of Big 4 auditors, rather than board independence per se, was the key driver that successfully restrained earnings management of listed non-financial companies, suggesting that external audit quality is a more effective safeguard of disclosure quality than internal board structures in West African countries. Recent findings from Indonesia indicate that Big 4 auditors positively moderate the association between gender-diverse boards and sustainability performance (Handayati et al., 2025), and therefore external audit quality and internal governance appear to be complementary mechanisms of sustainable corporate reporting. However, whether this complementariness of the two variables is present in SSA listed companies given different audit market conditions and institutional features remains an open question that has not, to the author's best knowledge, been investigated.

To fill these gaps, the study explores (i) the direct impact of corporate governance on ESG disclosure credibility, and (ii) the moderating impact of external audit quality on this relationship, based on a manually curated sample of 1,553 firm-year data points of 157 listed firms in Ghana, Kenya, Nigeria, and South Africa for the period of 2015–2024. This study makes three key contributions. First, it contributes to the field of ESG disclosure research, which is overwhelmingly characterized by studies conducted in developed markets and major emerging economies like China, Indonesia, and India, by focusing on an extensive and multicountry African panel of the continent's four most advanced stock markets. Second, it develops a credible ESG Disclosure Credibility Index (ESGDCI) based on three disclosure characteristics that are independently observable – scope of ESG disclosure, cross-pillar balance, and consistency over time.

Third, through a joint analysis of corporate governance and audit quality in a fixed-effects panel data framework, the study sheds light on the extent to which these two variables serve as complements in an

institutional setting which is quite different from that in which much of the governance-ESG literature has been conducted.

The structure of the rest of this paper is as follows. Section two begins with the review of the theoretical and empirical literature and hypothesis development. Section three deals with data and methodology. Section four covers the results of the analysis. Finally, Section five contains the conclusions drawn from the findings.

Literature Review and Hypothesis Development

Theoretical Framework

This research adopts three different yet complementary theoretical frameworks. Firstly, agency theory (Squires & Elnahla, 2020; Solomon et al., 2021) views the board of directors as the key internal body that acts as a monitoring and control agent for the discretionary activities of managers in disclosing information, including non-financial disclosures, on behalf of the shareholders and other stakeholders. There could be incentives for managers to portray an overly positive image regarding the firm's sustainability practices as a means of acquiring ESG-based investments, succumbing to pressures from stakeholders, or even escaping potential reputational costs. Therefore, a sound corporate governance structure would act as a constraint to such behaviour (Sun & Khan, 2023).

The research design is also informed by the institutional-voids framework for understanding the corporate governance of firms in Africa, as theorized by Kimani et al. (2021) and Boolaky et al. (2020), which explains the lack of uniformity of governance-disclosure relations observed in developed and large emerging markets among firms in SSA. According to institutional theory, firms implement governance structures to gain legitimacy in the eyes of regulators and foreign capital suppliers regardless of whether these structures actually improve the processes of internal monitoring and disclosures (Boolaky et al., 2020). Kimani et al. (2021) illustrate, in the case of Kenya, that informal social ties and patronage can hinder the nomination process and proper operation of non-executive members of boards, thus destroying the monitoring potential that governance proxies should have. In cases when such decoupling occurs, governance mechanisms of the board may not result in credible sustainability disclosures despite the association with the volume of disclosures. Lastly, the research design is motivated by the existing literature on audit quality (Alzoubi, 2018; Mardessi, 2022; Handayati et al., 2025) as a framework for considering the impact of Big 4 auditor involvement as an external monitor bonded through reputation.

Corporate Governance and ESG Disclosure Credibility

A growing literature establishes associations between board governance features and ESG and sustainability disclosure outcomes. For example, Githaiga & Kosgei (2023), focusing on the SSA listed firms, found that board features were significantly related to ESG disclosure level, thus emphasizing the importance of governance at board level to sustainability disclosure in SSA. Adu et al. (2023), focusing on SSA banks, found that governance mechanisms were moderators of the effect of ownership structures on sustainable banking disclosure, further confirming the belief that quality of governance is a conditioning factor of sustainability disclosure in the financial sector of SSA. In Munisi (2020), it was established that governance structures of

SSA listed firms depend on ownership structures, thus providing a link between governance and disclosure. Sun & Khan (2023), focusing on Chinese listed firms, found that governance mechanisms are linked to quality of reporting, however, the strength of the association depends on ownership structures.

Nevertheless, SSA-related studies on the validity of ESG disclosures rather than the mere amount of ESG disclosures are much less convincing. As Anifowose (2025) showed by means of a nine-country SSA panel dataset and employing dynamic GMM, corporate governance was linked with the extent of ESG disclosures, but no mediating role of ownership structure was established, meaning that the relations between SSA governance and ESG were positive but rather fragile when accounting for other conditioning variables. The explanation can be found in the institutional void hypothesis of Kimani et al. (2021), under which formal compliance with corporate governance does not imply any substantive control of managers, especially where the independent board members are recruited from small and overlapping professional circles that lack incentives to challenge the managers' sustainability rhetoric.

Given this mixed evidence - a generally positive theoretical expectation grounded in agency and stakeholder theory, set against SSA-specific evidence that formal governance-ESG relationships are often weak or statistically fragile once institutional context is accounted for - the study advances the following hypothesis:

H1: Corporate governance is significantly and positively associated with ESG disclosure credibility among listed firms in Sub-Saharan Africa.

The Moderating Role of External Audit Quality

External audit quality is theorised to influence ESG disclosure credibility both directly and through its interaction with internal governance mechanisms. Big 4 auditors are associated with greater technical resources, reputational capital, and litigation exposure than non-Big 4 firms, and are theorised to constrain aggressive or opportunistic financial and non-financial reporting more effectively as a result (Alzoubi, 2018). In the SSA audit market specifically, Yeng and Oppong (2024) found that audit tenure and audit fees were positively and significantly related to financial reporting quality among listed firms across six SSA stock markets, while Mvunabandi and Maama (2023) documented that ethical and governance conditions specific to the SSA audit environment shape overall audit quality outcomes.

More recent studies that are not within the framework of SSA have identified audit quality to play a complementary role in the connection between governance and ESG. According to Handayati et al. (2025), who investigated the listed firms in Indonesia, Big 4 auditors had a positive moderating effect on the connection between the gender diversity of the boards and their sustainability performance such that the correlation between governance and sustainability was much stronger among Big 4 audited firms compared to non-Big 4 firms. The result of the study conforms to a complementary mechanisms approach where the involvement of an independent high-quality external auditor acts to confirm the sustainability disclosures made by the boards of directors (Mardessi, 2022). Given this evidence and the theoretical expectation that audit quality and governance operate as reinforcing, rather than substitutive, mechanisms for credible disclosure, the study hypothesises:

H2: External audit quality positively moderates the relationship between corporate governance and ESG disclosure credibility, such that the association is stronger for firms audited by Big 4 audit firms.

Control Variables

Similarly to existing research on governance and ESG disclosures, the empirical model is controlled for firm size, leverage, firm age, firm profitability, foreign ownership, and macroeconomic conditions (inflation and GDP growth), all of which have proven to affect disclosure outcomes independent from the level of governance and audit quality (Saleh et al., 2022; Munisi, 2020; Sun & Khan, 2023). Firms that are larger and more profitable experience greater pressure from stakeholders and have sufficient financial means to support sustainability reporting systems, whereas more highly leveraged firms could benefit from disclosing ESG information as an indicator of creditworthiness (Sun & Khan, 2023). Foreign ownership stands for international shareholders interested in credible sustainability reporting (Munisi, 2020).

Methodology

Research Design, Population and Sample

The research design for the study is a quantitative panel approach, which suits the objective of testing hypotheses about relationships between governance variables and the effects on disclosure, taking into account potential differences in unobservable firm characteristics and time-specific factors (Wooldridge, 2020). The population of the study consists of both non-financial and financial firms that trade on the Ghana Stock Exchange (GSE), the Nairobi Securities Exchange (NSE), the Nigerian Exchange (NGX), and the Johannesburg Stock Exchange (JSE) between 2015 and 2024. This population has been chosen as these markets include the most liquid and oldest equity markets in Sub-Saharan Africa and constitute the bulk of market capitalisation in the region.

Data has been collected manually by examining annual, integrated, and sustainability reports of firms, along with macroeconomic variables from World Bank and national central bank databases. Data has been excluded for those firm-years with substantially incomplete data for governance and disclosure dimensions. The resulting sample includes 1,553 observations on 157 firms (32 Ghanaian, 39 Kenyan, 29 Nigerian, and 57 South African firms) over a period of up to ten fiscal years from 2015–2024. The details of the sample have been provided in Table 1 below.

Table 1
Sample Distribution by Country

Country	Number of Firms	Firm-Year Observations	% of Big 4-Audited Observations
Ghana	32	310	74.2%
Kenya	39	390	61.3%
Nigeria	29	290	63.7%
South Africa	57	570	71.9%
Total	157	1,553	68.1%
Note. Big 4 refers to Deloitte, EY, KPMG, and PwC. Percentages are computed on the analytic sample used in the regression models.			

Variable Measurement

The dependent variable, ESG disclosure credibility, is not adequately captured by disclosure volume alone, since a firm may disclose extensively while still reporting selectively, inconsistently, or in an unbalanced way that overstates genuine sustainability commitment (Handayati et al., 2025; Gillan et al., 2021). Consistent with the composite-index tradition in the disclosure-quality literature (Sun & Khan, 2023; Githaiga & Kosgei, 2023), the study therefore constructs an ESG Disclosure Credibility Index (ESGDCl) from three independently verifiable and theoretically grounded disclosure attributes:

(1) reporting breadth - the total volume of hand-collected environmental, social, and economic sustainability disclosure items reported by the firm in a given year, capturing the overall extent of ESG communication; (2) cross-pillar balance - the inverse of the coefficient of variation across the firm's environmental, social, and economic disclosure shares in a given year, capturing the extent to which a firm reports in a comprehensive, non-selective manner across all three sustainability pillars rather than emphasising one dimension (commonly the social pillar) while neglecting others, a pattern associated in the literature with symbolic rather than substantive sustainability communication (Handayati et al., 2025); and (3) reporting consistency - the inverse of the firm-level average year-on-year change in total ESG disclosure volume, capturing the extent to which a firm's sustainability reporting evolves in a stable, cumulative manner rather than fluctuating erratically in ways consistent with opportunistic or impression-management-driven disclosure (Gillan et al., 2021). Each component was transformed into a percentile rank (0 to 1) to avoid the index being dominated by extreme outliers common in hand-collected disclosure data, and the three percentile scores were combined with weights of 0.4 (breadth) and 0.3 each (balance and consistency) to form the final ESGDCl, which ranges from 0 (lowest credibility) to 1 (highest credibility); breadth was weighted more heavily because a credible disclosure signal presupposes a minimum threshold of substantive reporting content.

The primary independent variable, corporate governance, is captured by a composite Corporate Governance Index (CGI) constructed from five board-level attributes consistently used in prior governance-disclosure research: board size, board independence (the ratio of independent non-executive directors to total board size), board gender diversity, board financial expertise, and board capital (Githaiga & Kosgei, 2023; Munisi, 2020). Each component was percentile-ranked and averaged with equal weights to form the CGI, which ranges from 0

(weakest governance) to 1 (strongest governance). The moderating variable, external audit quality (AUDFSIZE), is measured as a binary indicator equal to 1 if the firm's external auditor is a Big 4 firm (Deloitte, EY, KPMG, or PwC) and 0 otherwise, following the standard audit-quality proxy in the literature (Alzoubi, 2018; Yeng & Oppong, 2024). Table 2 defines all variables used in the empirical model.

Table 2
Variable Definitions and Measurement

Variable	Label	Measurement	Source
ESGDCI	ESG Disclosure Credibility Index	Composite percentile-rank index of ESG reporting breadth, cross-pillar balance, and year-on-year reporting consistency; range 0–1	Computed
CGI	Corporate Governance Index	Composite percentile-rank index of board size, board independence, gender diversity, financial expertise, and board capital; range 0–1	Computed
AUDFSIZE	External Audit Quality	1 = Big 4 auditor (Deloitte, EY, KPMG, PwC); 0 = non-Big 4	Annual report
BSIZE	Board Size	Total number of directors on the board	Annual report
BINDEP	Board Independence	Ratio of independent non-executive directors to total board size	Annual report
BGED	Board Gender Diversity	Number of female directors on the board	Annual report
FEXPERTISE	Board Financial Expertise	Number of directors with financial/accounting or sustainability qualifications or experience	Annual report
BCAP	Board Capital	Composite count of directors' external directorships, professional networks, and relevant experience	Annual report
FSIZE	Firm Size	Natural logarithm of total assets	Annual report
LEV	Leverage	Total debt divided by total equity (winsorized at 1%/99%)	Annual report
AGE	Firm Age	Natural logarithm of years since incorporation/listing	Annual report
ROA	Profitability	Return on assets (winsorized at 1%/99%)	Annual report
FOWN	Foreign Ownership	Proportion of shares held by foreign shareholders	Annual report
INFLATION	Inflation Rate	Annual consumer price inflation rate (%), country-year	World Bank / central banks
GDPG	GDP Growth	Annual real GDP growth rate (%), country-year	World Bank
<i>Note.</i> All continuous ratio variables (ROA, leverage, board independence) were winsorized at the 1st and 99th percentiles prior to index construction and estimation to limit the influence of extreme values common in hand-collected panel data.			

Model Specification

To test H1 and H2, the study estimates a two-way (firm and year) fixed-effects panel regression model, which controls for time-invariant firm heterogeneity (e.g., ownership concentration, corporate culture) and common year-specific shocks (e.g., regional macroeconomic or regulatory changes) that could otherwise confound the governance-disclosure relationship (Wooldridge, 2020). The baseline model is specified as:

$$ESGDCI_{it} = \beta_0 + \beta_1 CGI_{it} + \beta_2 AUDFSIZE_{it} + \beta_3 (CGI \times AUDFSIZE)_{it} + \beta_4 FSIZE_{it} + \beta_5 LEV_{it} + \beta_6 AGE_{it} + \beta_7 ROA_{it} + \beta_8 FOWN_{it} + \beta_9 INFLATION_{it} + \beta_{10} GDPG_{it} + \alpha_i + \gamma_t + \epsilon_{it}$$

where subscripts *i* and *t* index firm and year respectively, α_i denotes firm fixed effects, γ_t denotes year fixed effects, and ϵ_{it} is the idiosyncratic error term. Three nested models are estimated: Model 1 includes only the control variables; Model 2 adds the main effects of corporate governance and audit quality to test H1; and Model 3 adds the $CGI \times AUDFSIZE$ interaction term to test H2. All models are estimated using ordinary least squares with entity and time fixed effects, and standard errors are clustered at the firm level to account for serial correlation and heteroskedasticity within firms (Wooldridge, 2020). Variance inflation factors (VIFs) were computed for all explanatory variables to check for multicollinearity; all VIFs were below 2.0 (mean VIF = 1.26), well under the conventional threshold of 10, indicating that multicollinearity is not a material concern in the estimated models.

Results

Descriptive Statistics

Table 3 presents descriptive statistics for the 1,553 firm-year observations used in the regression analysis. The mean ESG Disclosure Credibility Index is 0.500 (SD = 0.114), indicating a broadly symmetric distribution around the sample midpoint with meaningful cross-sectional and time-series variation (range: 0.134–0.726). The mean Corporate Governance Index is 0.499 (SD = 0.223), similarly centred near the sample midpoint by construction of the percentile-rank methodology. Approximately 68.1% of firm-year observations were audited by a Big 4 firm, reflecting the significant, though not universal, penetration of international audit networks in these four markets. The average board comprises 9.3 directors (SD = 2.65), with independent directors constituting on average 39.6% of board seats, 1.85 female directors, 3.12 directors with financial expertise, and an average board capital score of 1.84.

Table 3
Descriptive Statistics (N = 1,553)

Variable	Mean	SD	Min	Max
ESGDCI	0.500	0.114	0.134	0.726
Corporate Governance Index (CGI)	0.499	0.223	0.068	0.992
Audit Quality (Big 4 = 1)	0.681	0.466	0.000	1.000
Board Size	9.270	2.653	3.000	17.000
Board Independence (ratio)	0.396	0.232	0.000	0.818
Board Gender Diversity	1.852	1.392	0.000	6.000
Board Financial Expertise	3.117	2.012	0.200	9.000
Board Capital	1.842	1.338	0.000	6.000
Firm Size (ln Total Assets)	16.984	4.318	7.527	27.500
Leverage (winsorized)	2.302	3.781	0.017	26.923
Firm Age (ln years)	3.448	0.774	0.000	4.913
Foreign Ownership	0.351	0.273	0.000	1.000
Inflation Rate (%)	10.042	7.867	3.232	38.107
GDP Growth (%)	2.539	3.074	-6.369	8.129
Note. ESGDCI = ESG Disclosure Credibility Index (range 0–1). CGI = Corporate Governance Index (range 0–1). SD = standard deviation.				

Correlation Analysis

Table 4 reports Pearson pairwise correlations among the study variables. Contrary to the hypothesised direction, the Corporate Governance Index is negatively correlated with ESG disclosure credibility at the bivariate level ($r = -.12$, $p < .01$), as are several of its individual components, including board independence ($r = -.22$) and financial expertise ($r = -.21$). Board size is the only governance component positively correlated with ESGDCI at the bivariate level ($r = .20$). Audit quality is weakly negatively correlated with ESGDCI ($r = -.06$) and positively correlated with the Corporate Governance Index ($r = .30$). Firm size is negatively correlated with ESGDCI ($r = -.24$), a counterintuitive pattern discussed further below. None of the pairwise correlations among the explanatory variables exceed the conventional 0.80 threshold associated with problematic multicollinearity, consistent with the variance inflation factor diagnostics reported in the methodology section, though the correlations among the five CGI components themselves (ranging from .57 to .86) confirm that they capture a common underlying governance-strength dimension, supporting their combination into a single composite index rather than entry as separate correlated regressors.

Table 4
Pearson Correlation Matrix

Variable	1	2	3	4	5	6	7	8	9	10	11
1. ESGDCI	-										
2. CGI	-.12**	-									
3. AUDFSIZE	-.06*	.30**	-								
4. BSIZE	.20**	.59**	.31**	-							
5. BINDEP	-.22**	.76**	.11**	.11**	-						
6. BGED	-.11**	.85**	.16**	.46**	.58**	-					
7. FEXPERTISE	-.21**	.84**	.27**	.32**	.72**	.64**	-				
8. BCAP	-.07*	.86**	.29**	.49**	.57**	.68**	.68**	-			
9. FSIZE	-.24**	.57**	.16**	.15**	.62**	.48**	.56**	.41**	-		
10. LEV	-.09**	-.04	0.05	-.06*	-.06*	-.03	.07*	-.04	-.04	-	
11. AGE	-.11**	.25**	-.03	.07*	.25**	.26**	.24**	.16**	.22**	-.08*	-

Note. N = 1,553. ESGDCI = ESG Disclosure Credibility Index; CGI = Corporate Governance Index; AUDFSIZE = Big 4 auditor dummy; BSIZE = board size; BINDEP = board independence ratio; BGED = board gender diversity; FEXPERTISE = board financial expertise; BCAP = board capital; FSIZE = ln total assets; LEV = leverage; AGE = ln firm age. Foreign ownership, inflation, and GDP growth are omitted from the matrix for space; their correlations with ESGDCI are $r = .06$, $r = -.02$, and $r = .07$, respectively. * $p < .05$. ** $p < .01$.

Diagnostic Tests

An F-test for poolability strongly rejected the null hypothesis that a pooled OLS model is preferred over the two-way fixed-effects specification ($F(165, 1377) = 21.62$, $p < .001$), confirming that firm- and year-level heterogeneity is empirically important and supporting the fixed-effects approach adopted in this study. Variance inflation factors for all explanatory variables ranged from 1.05 to 1.92 (mean = 1.26), well below the conventional threshold of 10, indicating that multicollinearity does not materially bias the coefficient estimates or standard errors reported below.

Regression Results

Table 5 presents the results of the two-way fixed-effects panel regressions. Model 1 includes only the control variables; Model 2 adds the main effects of corporate governance and audit quality; and Model 3 adds the corporate governance $\times$ audit quality interaction term.

Contrary to H1, the Corporate Governance Index is positively signed but not statistically significantly associated with ESG disclosure credibility in Model 2 ($\beta = 0.086$, $SE = 0.059$, $p = .142$), after controlling for firm size, leverage, firm age, profitability, foreign ownership, and the macroeconomic environment, and after absorbing firm and year fixed effects. The coefficient remains positive but non-significant in Model 3 ($\beta = 0.121$, $SE = 0.080$, $p = .130$). H1 is therefore not supported: once firm and year fixed effects and a full set of controls

are introduced, the strong negative bivariate correlation between governance and ESGDCI reported in Table 4 is substantially attenuated and reverses sign, but the resulting positive association does not reach conventional levels of statistical significance. Audit quality (AUDFSIZE) is not significantly associated with ESGDCI in either Model 2 ($\beta = 0.004$, $p = .551$) or Model 3 ($\beta = 0.018$, $p = .378$).

In Model 3, the interaction term ($\text{CGI} \times \text{AUDFSIZE}$) is negative but not statistically significant ($\beta = -0.046$, $\text{SE} = 0.069$, $p = .503$), indicating that audit quality does not significantly moderate the relationship between corporate governance and ESG disclosure credibility in this sample. H2 is therefore not supported. This null moderation result closely parallels the finding of Anifowose (2025), who similarly found no significant moderating effect of institutional ownership on the corporate governance-ESG disclosure relationship across a nine-country SSA panel, suggesting that the fragility of governance-ESG moderation effects may be a broader feature of the SSA institutional environment rather than an artefact specific to this study's sample or index construction.

Among the control variables, leverage is positively and significantly associated with ESGDCI across all three models (Model 3: $\beta = 0.002$, $p = .032$), consistent with a signalling interpretation in which more highly levered firms use credible sustainability disclosure to reassure creditors. Inflation ($\beta = -0.002$, $p = .006$) and GDP growth ($\beta = -0.004$, $p = .015$) are both negatively and significantly associated with ESGDCI, suggesting that macroeconomic stress and, counterintuitively, periods of stronger economic growth are both associated with lower sustainability-disclosure credibility, plausibly reflecting resource reallocation away from discretionary non-financial reporting during periods of macroeconomic volatility in either direction. Return on assets is marginally negatively associated with ESGDCI ($p = .064$). Firm size, firm age, and foreign ownership are not statistically significant at conventional levels in the fully specified model. The overall explanatory power of the model is modest (within $R^2 = .014$ in Model 3), consistent with the theoretical expectation that firm- and year-fixed effects, together with a small set of governance and firm-level controls, capture only part of the total variation in a multidimensional construct such as ESG disclosure credibility; this is discussed further as a limitation.

Table 5
Two-Way Fixed-Effects Panel Regression Results (Dependent Variable: ESGDCI)

Variable	Model 1	Model 2	Model 3
Constant	0.585** (0.164)	0.539** (0.160)	0.532** (0.160)
Corporate Governance Index (CGI)	-	0.086 (0.059)	0.121 (0.080)
Audit Quality (AUDFSIZE)	-	0.004 (0.007)	0.018 (0.021)
CGI × AUDFSIZE	-	-	-0.046 (0.069)
Firm Size (ln)	0.002 (0.008)	0.002 (0.007)	0.002 (0.007)
Leverage	0.002* (0.001)	0.002* (0.001)	0.002* (0.001)
Firm Age (ln)	-0.026 (0.027)	-0.023 (0.027)	-0.023 (0.027)
Return on Assets	-0.009† (0.005)	-0.009† (0.005)	-0.009† (0.005)
Foreign Ownership	-0.028 (0.026)	-0.031 (0.025)	-0.031 (0.025)
Inflation Rate	-0.002** (0.001)	-0.002** (0.001)	-0.002** (0.001)
GDP Growth	-0.004* (0.002)	-0.004* (0.002)	-0.004* (0.002)
Firm Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	1,553	1,553	1,553
Firms (clusters)	157	157	157
Within R ²	– .044	.013	.014
F-statistic	5.61**	5.27**	4.86**
<i>Note.</i> Cell entries are unstandardized coefficients with firm-clustered standard errors in parentheses. † $p < .10$. * $p < .05$. ** $p < .01$. All models estimated by OLS with firm and year fixed effects; standard errors clustered at the firm level (157 clusters). The negative within R² in Model 1 reflects the low explanatory power of the macroeconomic and firm-level controls alone, net of firm and year fixed effects, relative to the entity-mean benchmark; it is a standard feature of within-transformation R² in panels with modest within-firm variation and does not indicate model misspecification.			

Summary of Hypothesis Testing

Table 6 summarises the hypothesis-testing results. Neither H1 nor H2 is supported at conventional levels of statistical significance, though the direct effect of corporate governance on ESG disclosure credibility is consistently positively signed once fixed effects and controls are introduced.

Table 6
Summary of Hypothesis Testing Results

Hypothesis	Statement	Coefficient (Model 3)	Decision
H1	Corporate governance is significantly and positively associated with ESG disclosure credibility.	0.121 (n.s.)	Not supported
H2	External audit quality positively moderates the corporate governance-ESGDCI relationship.	-0.046 (n.s.)	Not supported
<i>Note.</i> n.s. = not statistically significant at conventional levels ($p > .10$).			

Discussion

This study set out to examine whether corporate governance enhances the credibility of ESG disclosure among listed firms in Sub-Saharan Africa, and whether external audit quality strengthens this relationship. Two findings stand out. First, once firm and year fixed effects and a full set of controls are introduced, the Corporate Governance Index is positively signed but not statistically significantly associated with ESG disclosure credibility - a marked departure from the strong negative bivariate correlation observed in Table 4, and a weaker result than the direct positive relationships reported by Githaiga and Kosgei (2023) and Anifowose (2025) for ESG disclosure volume in SSA. Second, external audit quality does not significantly moderate the governance-credibility relationship, in contrast to the complementary-mechanisms evidence reported by Handayati et al. (2025) for Indonesian listed firms.

Several complementary, non-mutually-exclusive explanations may account for these null findings. First, the institutional-voids perspective suggests that board governance structures in the sample markets may be adopted substantially to satisfy listing requirements or signal legitimacy to international investors, rather than to functionally constrain selective or inconsistent sustainability reporting (Kimani et al., 2021; Boolaky et al., 2020). Where independent directors, gender-diverse appointments, and board capital are assembled primarily for compliance rather than substantive oversight, a governance index built from these formal attributes may capture legitimacy-seeking behaviour more than functional monitoring capacity, attenuating its association with disclosure credibility even where it remains positively associated with disclosure volume, as in Githaiga and Kosgei (2023). Second, the finding that the null moderation result mirrors that of Anifowose (2025) - who found no significant moderating role for institutional ownership in a nine-country SSA panel - suggests that the fragility of governance-ESG moderation effects may be a structural feature of the region's disclosure environment rather than an idiosyncratic feature of this study's audit-quality proxy or index construction. Third, Big 4 designation, while a widely used audit-quality proxy, may not adequately capture the specific sustainability-assurance capacity that would be needed to meaningfully strengthen ESG disclosure credibility, since formal external assurance of sustainability reports remains comparatively rare among SSA listed firms relative to the financial-statement audit itself (Yeng & Oppong, 2024; Mvunabandi & Maama, 2023).

The significant positive association between leverage and ESG disclosure credibility is broadly consistent with a signalling interpretation, in which more highly levered firms use credible, comprehensive sustainability disclosure to reassure creditors and reduce information asymmetry, consistent with the broader logic of governance and disclosure as tools for managing stakeholder relationships beyond shareholders alone (Gillan

et al., 2021). The negative associations of both inflation and GDP growth with ESGDCI are less straightforward to interpret; one plausible reading is that firms deprioritise the consistency and comprehensiveness of discretionary sustainability reporting during periods of macroeconomic volatility, whether that volatility reflects contraction or unusually rapid growth, as management attention and resources are reallocated toward core operational and financial-reporting priorities (Sun & Khan, 2023).

These findings should be read alongside the modest explanatory power of the estimated models (within R^2 between $-.044$ and $.014$). This is consistent with the well-established difficulty of explaining cross-sectional and within-firm variation in disclosure quality using a small set of governance and firm-level variables once firm and year fixed effects have already absorbed a large share of systematic variation (Sun & Khan, 2023); it also reflects the inherent noise in any composite index constructed, as here, from observable proxies rather than from independently verified sustainability-assurance data. The non-significant coefficients on corporate governance and audit quality should therefore be interpreted as an absence of robust evidence for the hypothesised relationships in this sample, rather than as definitive proof that governance and audit quality are irrelevant to ESG disclosure credibility in an absolute sense.

Theoretical Implications

The findings contribute to corporate governance and ESG disclosure theory in three ways. First, they add to a small but growing body of SSA-specific evidence, including Anifowose (2025) and Githaiga and Kosgei (2023), suggesting that governance-ESG relationships well established in developed and larger emerging markets do not travel uniformly to Sub-Saharan Africa, reinforcing calls for governance and disclosure theory to be more explicitly contextualised rather than treated as institutionally invariant (Kimani et al., 2021). Second, the results distinguish disclosure volume from disclosure credibility as conceptually and empirically distinct constructs: where prior SSA research finds governance positively associated with the extent of ESG disclosure (Githaiga & Kosgei, 2023), this study's null finding for a credibility-focused index suggests that governance may drive firms to disclose more without necessarily disclosing more credibly. Third, the non-significant moderation result contributes to the ongoing debate over whether external audit quality and internal governance operate as complements or substitutes for credible disclosure (Handayati et al., 2025; Mardessi, 2022), suggesting that, at least when audit quality is proxied by Big 4 status, external audit and internal governance may operate largely independently of one another in the SSA sustainability-disclosure context.

Practical and Policy Implications

For regulators and stock exchange authorities in Ghana, Kenya, Nigeria, and South Africa, the findings suggest that encouraging stronger board governance structures, without complementary investment in sustainability-assurance infrastructure and enforcement capacity, may be insufficient to improve the credibility of ESG disclosure, and cannot be assumed to do so by default. Regulators may wish to consider mandating or incentivising independent third-party assurance of sustainability reports specifically, rather than relying on financial-statement audit quality as a proxy for sustainability-disclosure credibility. For boards and sustainability committees, the results underscore the importance of ensuring that governance structures translate into substantive oversight of the balance and consistency of sustainability reporting, not merely its volume. For investors and ESG rating agencies operating in these markets, the findings caution against relying

on governance scores or disclosure volume alone as proxies for disclosure credibility, and suggest that reporting balance and consistency over time may carry incremental information value not captured by governance indicators. For audit regulators, the non-significant moderating role of Big 4 status suggests a need to develop and mandate dedicated sustainability-assurance standards, distinct from financial-statement audit quality, as SSA capital markets continue to formalise ESG reporting requirements (Yeng & Oppong, 2024).

Limitations and Directions for Future Research

This study is subject to several limitations that offer avenues for future research. First, the ESG Disclosure Credibility Index, while constructed from three independently verifiable and theoretically grounded components, is a composite proxy rather than a direct measure of disclosure credibility derived from independently verified sustainability assurance or third-party ESG audit data; future research with access to formal sustainability-assurance records could validate the ESGDCI against, or extend it with, assurance-based credibility measures of the kind emerging in the international greenwashing-detection literature (Handayati et al., 2025). Second, although the two-way fixed-effects design controls for time-invariant firm heterogeneity and common year shocks, it cannot fully rule out reverse causality or dynamic endogeneity between governance structure and disclosure outcomes; future studies could employ dynamic panel GMM estimators, in the tradition of Anifowose (2025), to strengthen causal identification. Third, the audit-quality proxy is limited to a Big 4/non-Big 4 dummy; future research incorporating audit tenure, sustainability-assurance provider identity, and assurance standard type, in the spirit of Yeng and Oppong (2024), may uncover moderating effects not detected here. Fourth, while the four-country sample offers valuable regional breadth, country-specific institutional differences - in sustainability-reporting mandates, enforcement intensity, and governance code maturity - may condition the governance-ESGDCI relationship in ways this pooled analysis, despite country and year controls, cannot fully disentangle; future research could explore country-level moderation or conduct single-country deep-dive replications, following the depth of Kimani et al. (2021). Finally, the sample is restricted to listed firms on the four largest SSA exchanges; the findings may not generalise to smaller exchanges, unlisted firms, or state-owned enterprises operating under different governance and disclosure regimes.

Conclusion

This study examined the effect of corporate governance on ESG disclosure credibility among 157 listed firms across Ghana, Kenya, Nigeria, and South Africa over the 2015–2024 period, and tested whether external audit quality moderates this relationship. Using two-way fixed-effects panel regressions on 1,553 hand-collected firm-year observations, the study finds that corporate governance is positively signed but not statistically significantly associated with ESG disclosure credibility, and that external audit quality does not significantly moderate this relationship. These null findings, which closely parallel recent SSA-specific evidence on the fragility of governance-ESG moderation effects (Anifowose, 2025), suggest that the presumed benefits of strong board governance for credible sustainability disclosure documented in developed and larger emerging markets cannot be assumed to hold uniformly across institutional contexts. Policymakers, boards, auditors, and investors in Sub-Saharan African markets should look beyond formal governance structures and audit-firm brand name towards the substantive sustainability-assurance infrastructure and enforcement environment within which credible ESG disclosure is actually produced. As SSA capital markets continue to formalise ESG reporting requirements and attract sustainability-focused international capital, a more contextually grounded

understanding of what genuinely drives credible, rather than merely voluminous, sustainability disclosure remains an important and unresolved research and policy priority.

Declarations

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Consent to Participate: Not applicable.

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Availability of Data and Materials: The data that support the findings of this study were hand-collected by the author from publicly available annual, integrated, and sustainability reports of listed firms in Sub-Saharan Africa (Ghana, Kenya, Nigeria, and South Africa), together with macroeconomic data from World Bank and national central bank databases. The dataset generated and analyzed during the current study is available from the corresponding author upon reasonable request.

Author Contributions

All authors contributed to the conception and design of the study, data collection, methodology, analysis and interpretation of the results, and preparation and revision of the manuscript. All authors read and approved the final version of the manuscript.

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AI-Assisted Technologies

The authors declare that artificial intelligence-assisted tools, where used during manuscript preparation, were used only for language improvement, editing, formatting, or other supportive purposes. AI tools were not used to generate, fabricate, or manipulate the study data, statistical results, empirical findings, or conclusions. The authors retain full responsibility for the content, accuracy, originality and integrity of the manuscript.

References

1. Adu DA, Abedin MZ, Hasan M (2023) Bank ownership structures and sustainable banking initiatives: The moderating effect of governance mechanism. *Int Rev Financial Anal*, 89, Article 102783.
2. Ahmed M, Ibrahim MY (2024) Board independence, audit quality and earnings management among listed non-financial companies in Nigeria. *Malete J Acc Finance* 4(2):1–15

3. Alzoubi ESS (2018) Audit quality, debt financing, and earnings management: Evidence from Jordan. *J Int Acc Auditing Taxation* 30:69–84
4. Anifowose M (2025) Evidence of the impact of corporate governance on ESG disclosure in sub-Saharan Africa: The moderating role of ownership structure. *Int J Disclosure Gov Adv* online publication. <https://doi.org/10.1057/s41310-025-00294-3>
5. Boolaky PK, Tawiah V, Soobaroyen T (2020) Why do African countries adopt IFRS? An institutional perspective. *Int J Acc*, 55(2), Article 2050005.
6. Gillan SL, Koch A, Starks LT (2021) Firms and social responsibility: A review of ESG and CSR research in corporate finance. *J Corp Finance*, 66, Article 101889.
7. Githaiga PN, Kosgei JK (2023) Board characteristics and ESG disclosure in sub-Saharan Africa. *Corp Governance: Int J Bus Soc* 23(7):1528–1545. <https://doi.org/10.1108/CG-05-2022-0223>
8. Handayati P, Tham YH, Yuningsih Y, Sun Z, Nugroho TR, Rochayatun S (2025) ESG performance and corporate governance-The moderating role of the Big Four auditors. *J Risk Financial Manage* 18(1) Article 31. <https://doi.org/10.3390/jrfm18010031>
9. Kimani D, Ullah S, Kodwani D, Akhtar P (2021) Analysing corporate governance and accountability practices from an African neo-patrimonialism perspective: Insights from Kenya. *Crit Perspect Acc* 78:102260
10. Mardessi S (2022) Audit committee and financial reporting quality: The moderating effect of audit quality. *J Financial Crime* 29(1):368–388
11. Mensah E (2020) The effect of IFRS adoption on financial reporting quality: Evidence from listed manufacturing firms in Ghana. *Economic Research-Ekonomska Istrazivanja* 34(1):2890–2905
12. Munisi G (2020) Corporate governance and ownership structure in Sub-Saharan Africa countries. *J Afr Bus* 21(3):289–314
13. Mvunabandi JD, Maama H (2023) The impact of ethics on the audit quality of firms in Sub-Sahara Africa. *Int J Econ Financial Issues* 13(5):149–158
14. Saleh I, Abu Afifa M, Al-Hawatmah Z, Albakkar O (2022) Earnings management, earnings quality, board gender diversity and cost of equity capital: Evidence from an emerging market. *Global Bus Rev Adv* online publication. <https://doi.org/10.1177/09721509221133513>
15. Solomon SJ, Bendickson JS, Marvel MR, McDowell WC, Mahto R (2021) Agency theory and entrepreneurship: A cross-country analysis. *J Bus Res* 122:466–476
16. Squires B, Elnahla N (2020) The roles played by boards of directors: An integration of the agency and stakeholder theories. *Transnatl Corporations Rev* 12(2):126–139
17. Sun H, Khan W (2023) Corporate governance and reporting quality of accounts in China-listed firms: A moderating role of ownership pattern. *PLoS ONE*, 18(11), Article e0295253.
18. Wooldridge JM (2020) *Introductory econometrics: A modern approach*, 7th edn. Cengage Learning
19. Yeng S, Oppong C (2024) Audit independence and financial reporting quality: An insight from Sub-Saharan African stock markets. *Eur J Acc Auditing Finance Res* 12(5):1–16