EFFECT OF SUSTAINABILITY DISCLOSURES ON FINANCIAL PERFORMANCE OF LISTED CONSUMER GOODS COMPANIES IN NIGERIA

Bashir Amina Mohammed
Department of Accounting
Faculty of management Sciences
University of Abuja
amina.bashir@uniabuja.edu.ng/+2348122940360
Orcid: 0009-0009-3474-8045

Adefiranye James R. Adeleye
Department of Entrepreneurship
Faculty of Management Sciences
University of Abuja
james.adefiranye@uniabuja.edu.ng/+2348035040553
DOI: https://doi.org/10.57233/gujaf.v7i5.04

Abstract
This study investigates the dynamic relationship between sustainability reporting dimensions economic, social, environmental, and governance and the financial performance (Return on Equity) of listed consumer goods companies in Nigeria. Grounded in stakeholder and shareholder theoretical perspectives, the study utilizes an ex-post facto longitudinal design on an unbalanced panel of 18 firms listed on the Nigerian Exchange Group (NGX) over the period 2013 to 2025 (213 firm-year observations). Addressing potential simultaneity bias, explanatory variables are specified with a one-year econometric lag within a Random Effects framework incorporating cluster-robust standard errors and time dummies. The findings indicate that lagged economic disclosure has a statistically significant negative association with Return on Equity (β= -1.065, p = 0.034, 95% CI (-2.047, -0.083]), suggesting that extensive disclosures concerning local procurement, tax transparency, and direct economic distribution impose immediate administrative and compliance frictions on real-sector firms operating under narrow operating margins. Conversely, social, environmental, and governance disclosure indices exhibit statistically insignificant associations with short-term equity returns. These findings caution corporate managers against viewing non-financial disclosures as uniformly value-accretive in the immediate term, highlighting the necessity for regulators to consider industry-tailored, financially material reporting standards to minimize administrative burdens in developing economies.

Keywords: Sustainability Disclosure, Return on Equity, Economic Disclosure, Consumer Goods, Emerging Markets, Panel Data.

1.0 Introduction

In today's world of business there has been a structural change from traditional financial reporting toward non-financial transparency, on the rise are capital markets demanding enhanced disclosure regarding environmental, social, and governance (ESG) performance (Amin et al., 2024; Beretta et al., 2024). In the manufacturingsector, this imperative is critical, as operational processes entail substantial environmental footprints, resource intensity, and supply chain externalities (Mondal et al., 2024; Suhartini et al., 2024). Consequently, sustainability reporting serves as a strategic tool of which firm now use to communicate corporate commitment to ecological, environmental, social, and economic stewardship (Abeysekera, 2022; Freeman, 1984).

Despite widespread of diverse frameworks adoption, the empirical link between sustainability disclosures and financial performance remains theoretically contested (Carvajal & Nadeem, 2022; Monteiro et al., 2024). Stakeholder and Legitimacy theories suggest that non-financial reporting helps mitigates information asymmetry, enhancing reputational capital, and lowers cost of capital,

thereby increasing firms' profitability (Ameer & Othman, 2012; Freeman, 1984). Conversely, Shareholder theory posit that voluntary disclosures divert capital from profit-generating activities, creating administrative overheads and compliance expenditures that depress equity returns (Celik, 2023; Friedman, 1970; Suhartini et al., 2024).

Empirical literature confirms that the financial consequences of reporting choices are highly sectorspecific (Buallay, 2020; Monteiro et al., 2024). Consumer goods companies operate on thin operating margins and incur direct expenditures related to waste mitigation, labor safety, and supply chain auditing (Demirgüneş, 2016; Mondal et al., 2024). Furthermore, generic reporting frameworks often fail to generate financial returns because they encourage un-tailored disclosures rather than industryspecific material metrics (Carvajal & Nadeem, 2022). In emerging economies, nascent regulatory disclosure guidelines can create a temporary "reporting penalty," wherein compliance expenditures suppress short-term financial returns before market benefits materialize (Celik, 2023; Umar et al., 2021).

A key methodological and conceptual limitation in extant sustainability literature is the widespread reliance on contemporaneous regression models (Beretta et al., 2024; Friske et al., 2023). Sustainability disclosures require time to be processed by capital markets and integrated into operational cost structures; analyzing same-year financial impacts introduces simultaneity bias and conceals the gestative lag inherent in corporate reporting cycles.

Furthermore, the empirical gap within the Sub-Saharan African manufacturing space remains unresolved. Unlike financial intermediaries, consumer goods manufacturers in Nigeria operate in an environment characterized by acute foreign exchange volatility, imported raw material dependence, high energy costs, and compressed operating margins. In this real-sector setting, the administrative resources required to measure, audit, and disclose non-financial information may impose an immediate financial drag before any stakeholder-related value can materialize. To address these gaps, this study investigates the dynamic, one-year-lagged relationship between four distinct sustainability reporting dimensions economic, social, environmental, and governance disclosures and the Return on Equity of listed consumer goods companies in Nigeria.

Empirical evidence regarding the impact of sustainability reporting on firm's financial performance remains highly fragmented and conflicting (Carvajal & Nadeem, 2022; Monteiro et al., 2024). While some studies document positive financial returns from non-financial transparency (Ameer & Othman, 2012), others indicate that voluntary sustainability reporting creates administrative overheads and compliance costs that depress equity profitability (Celik, 2023; Suhartini et al., 2024). This empirical ambiguity creates strategic uncertainty for corporate executives in developing markets, who struggle to determine whether disclosure commitments generate tangible financial gains or merely function as an uncompensated operational expense (Suhartini et al., 2024; Umar et al., 2021).

A critical limitation in existing corporate reporting literature is the widespread assumption of sectoral homogeneity (Buallay, 2020; Monteiro et al., 2024). Empirical studies frequently aggregate financial institutions and manufacturing firms within unified analytical samples. However, consumer goods manufacturers operate under tight operating margins, high resource intensity, environmental waste regulations, and complex supply chain structures (Demirgüneş, 2016; Mondal et al., 2024). Unlike financial intermediaries, real-sector companies incur direct operational and capital expenditures when measuring, auditing, and disclosing sustainability indicators (Demirgüneş, 2016; Suhartini et al., 2024). Generalizing disclosure impacts across

industries obscures the specific compliance friction experienced by manufacturing firms in emerging economies.

Furthermore, prevailing reporting practices in emerging markets rely heavily on broad, generic disclosure frameworks (Carvajal & Nadeem, 2022). Disclosing an extensive array of non-financial metrics without prioritizing financial materiality forces consumer goods corporations to incur high report preparation costs without providing decision-useful information to capital providers (Carvajal & Nadeem, 2022). This information overhead penalizes firm profitability, particularly in emerging capital markets where investors may not immediately reward voluntary non-financial disclosures with valuation premiums (Celik, 2023; Suhartini et al., 2024).

Methodologically, most prior studies in Sub-Saharan Africa evaluate same-year interactions between disclosure choices and corporate profitability (Beretta et al., 2024; Friske et al., 2023). In practice, sustainability reporting expenditures and commitments incur immediate operational costs, whereas financial returns require a gestative period to manifest (Beretta et al., 2024). Failing to utilize a time-lagged analytical framework conceals the true, delayed economic consequences of disclosure decisions on equity returns.

Therefore, the central research problem is the absence of empirical clarity regarding how individual dimensions of sustainability reporting temporally associate with the equity profitability of listed consumer goods manufacturers in an emerging African economy facing severe macro-operating headwinds. Prior domestic literature has predominantly examined composite disclosure scores contemporaneously, failing to identify which specific disclosure dimensions consume scarce operational resources and which contribute to enterprise stability. Without isolating real-sector operational dynamics and applying a time-lagged analytical framework, corporate executives risk deploying compliance-heavy reporting strategies that erode short-term shareholder returns without yielding compensating market rewards.

Research Objectives

The primary objective of this study is to examine the dynamic impact of sustainability reporting dimensions on the financial performance of listed consumer goods companies in Nigeria. Specifically, the study seeks to:

i. Evaluate the effect of lagged economic disclosure on the Return on Equity of listed consumer goods companies in Nigeria.
ii. Assess the influence of lagged social disclosure on the Return on Equity of listed consumer goods companies in Nigeria.
iii. Determine the effect of lagged environmental disclosure on the Return on Equity of listed consumer goods companies in Nigeria.
iv. Ascertain the impact of lagged governance disclosure on the Return on Equity of listed consumer goods companies in Nigeria.

Research Hypothesis

To achieve the research objectives and guide empirical testing, the following null hypotheses are formulated:

i. **H_{O1}:** Lagged economic disclosure has no significant effect on the Return on Equity of listed consumer goods companies in Nigeria.
ii. **H_{O2}:** Lagged social disclosure has no significant effect on the Return on Equity of listed consumer goods companies in Nigeria.

iii. **H_{O3}:** Lagged environmental disclosure has no significant effect on the Return on Equity of listed consumer goods companies in Nigeria.
iv. **H_{O4}:** Lagged governance disclosure has no significant effect on the Return on Equity of listed consumer goods companies in Nigeria.

2.0 Literature Review

Sustainability Reporting and Disclosure

Sustainability reporting represents an overarching organizational strategy integrating economic viability, environmental stewardship, and social responsibility into corporate governance (Abeysekera, 2022; Amin et al., 2024). Beyond traditional financial accounting, sustainability reporting serves as a holistic framework that articulates how a firm creates long-term value while mitigating non-financial risks across its operating environment (Beretta et al., 2024; Mondal et al., 2024). Operationalized through sustainability disclosures, firms communicate non-financial information via annual reports, integrated reports, or stand-alone ESG documents to reduce information asymmetry and demonstrate compliance with societal norms (Amin et al., 2024; Deegan, 2014; Monteiro et al., 2024). However, the literature distinguishes between generic disclosures (such as standard Global Reporting Initiative guidelines) and financially material disclosures tailored to industry-specific risks (Sustainability Accounting Standards Board framework) (Carvajal & Nadeem, 2022). Preparing and verifying non-financial disclosures generates administrative, legal, and auditing costs (Celik, 2023). In emerging markets, when disclosures focus on generic metrics rather than financially material topics, the administrative expenditures of disclosure can exceed immediate financial returns, creating a temporary reporting cost burden (Carvajal & Nadeem, 2022; Celik, 2023).

Dimensions of Sustainability Reporting Disclosures

Sustainability reporting dimensions encompass specific economic, social, environmental, and governance disclosure indicators (GRI, 2019). Economic disclosure (ECD) captures corporate transparency regarding direct economic value generated, tax contributions, local procurement commitments, and community infrastructure investments (GRI, 2019; Suhartini et al., 2024). While economic disclosures demonstrate local value creation, consumer goods manufacturing corporations incur direct administrative expenses when collecting, verifying, and disclosing supplier economic metrics across complex supply chains (Demirgüneş, 2016; Mondal et al., 2024). In developing capital markets, extensive economic disclosures expose tax liabilities and local purchasing obligations without yielding immediate valuation premiums, creating a short-term financial drag on corporate profitability (Celik, 2023; Umar et al., 2021). Similarly, social disclosure (SCD) encompasses corporate reporting on labor standards, employee health and safety, diversity, and community welfare (Amin et al., 2024; GRI, 2019). While social disclosures can build organizational legitimacy, maintaining labor standards and financing corporate social responsibility projects creates recurring operational overheads that can neutralize short-term financial returns in emerging markets (Ameer & Othman, 2012; Mondal et al., 2024; Monteiro et al., 2024).

Furthermore, environmental disclosure (END) captures corporate transparency on greenhouse gas emissions, hazardous waste management, water stewardship, energy efficiency, and ecological footprint mitigation (Mondal et al., 2024; Suhartini et al., 2024). Consumer goods manufacturing firms face intense public and regulatory scrutiny regarding packaging waste and industrial pollution, compelling companies to invest in cleaner technologies and environmental risk screening (Mondal et al., 2024). However, the initial capital outlays required for eco-friendly

manufacturing technologies and third-party environmental audits create immediate financial burdens that often yield a neutral or negative short-term effect on profitability until eco-efficiencies emerge over extended time horizons (Beretta et al., 2024; Celik, 2023; Monteiro et al., 2024). Conversely, governance disclosure (GVD) measures corporate transparency regarding board independence, audit committee oversight, executive compensation structures, risk management frameworks, and business ethics (GRI, 2019; Ibrahim et al., 2023). Transparent governance reporting signals administrative integrity, reduces agency costs, and reassures capital providers regarding managerial accountability (Amin et al., 2024; Suhartini et al., 2024). Unlike environmental and social initiatives that require large physical capital outlays, governance disclosure relies primarily on internal policy enforcement and structural board oversight, lowering agency friction and exerting a positive, stabilizing influence on corporate financial performance (Carvajal & Nadeem, 2022; Ibrahim et al., 2023).

Corporate Financial Performance: Return on Equity (ROE)

Return on Equity (ROE) serves as the primary dependent variable measuring corporate financial performance from the perspective of equity shareholders (Ameer & Othman, 2012; Beretta et al., 2024). ROE evaluates a firm's operational efficiency and capital productivity by measuring the net financial return generated relative to total shareholders' equity (Carvajal & Nadeem, 2022). In consumer goods manufacturing, ROE reflects a firm's capacity to convert capital investments and cost-containment strategies into shareholder value (Demirgüneş, 2016). Because accounting-based metrics directly capture internal operational health rather than short-term market speculation, ROE is the most suitable dependent variable to evaluate how non-financial reporting costs and disclosure choices temporally influence shareholder equity profitability (Beretta et al., 2024; Celik, 2023).

Theoretical Framework and Dimension-Specific Expectations

This study is grounded in two theoretical perspectives that provide competing explanations for corporate disclosure choices: Stakeholder Theory (Freeman, 1984) and Shareholder / Agency-Cost Theory (Friedman, 1970; Jensen & Meckling, 1976). Rather than assuming a uniform effect, these frameworks generate distinct theoretical expectations across the four disclosure dimensions:

Stakeholder Theory

Originating from Freeman (1984), Stakeholder Theory posits that corporate sustainability and long-term value generation depend on managing relationships with a broad spectrum of non-investor stakeholders (employees, communities, and regulators). Within this framework, Social Disclosure (SCD) and Environmental Disclosure (END) serve as communication mechanisms that satisfy societal expectations, build reputational capital, and reduce operational friction (Donaldson & Preston, 1995). For real-sector manufacturing firms, addressing environmental externalities and labor welfare can improve brand loyalty and community goodwill, leading to a theoretically positive long-term financial relationship.

Shareholder / Agency-Cost Theory

Conversely, Shareholder Theory (Friedman, 1970) asserts that the firm’s primary duty is maximizing equity returns within legal parameters. When applied to voluntary non-financial reporting, this perspective suggests that compiling extensive disclosures consumes financial and managerial resources without generating direct cash inflows. This friction is particularly pronounced for Economic Disclosure (ECD), which requires firms to disclose localized procurement data, community infrastructure commitments, and detailed value-added statements.

In thin-margin manufacturing settings, tracking these supply-chain metrics incurs verification, consulting, and administrative expenses. Consequently, Shareholder Theory anticipates a negative short-term association between extensive economic reporting and equity profitability (ROE).

Finally, Governance Disclosure (GVD) intersects with Agency Theory: transparent reporting of board independence, audit oversight, and executive remuneration lowers agency costs and provides assurance to capital providers without requiring large capital expenditures, suggesting an expected positive stabilizing relationship with financial performance.

Review of Empirical studies

Wahyuni et al. (2025) evaluated the link between sustainability reporting and financial performance among listed textile and garment manufacturing companies in Indonesia (2018–2023). Utilizing multiple linear regression on GRI-based disclosure scores, the study documented a statistically significant positive effect on Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM), concluding that non-financial transparency enhances corporate reputation and investor confidence despite initial setup costs. Arshi et al. (2025) investigated listed firms on the Pakistan Stock Exchange using mediation and moderation regression models. Their empirical evidence demonstrated that sustainability reporting positively influences accounting performance through the mediating mechanism of substantive ESG outcomes, with firm size significantly moderating and amplifying this positive effect.

Monteiro et al. (2024) examined 297 large Portuguese corporations using univariate Mann-Whitney tests and multivariate regressions on ROA. The authors documented a neutral relationship, concluding that short-term report preparation costs frequently offset immediate financial gains in non-financial corporations. Suhartini et al. (2024) investigated Indonesian manufacturing firms using PLS-SEM with ROA as a mediating variable. They observed no direct link between GRI-based reporting and firm value (Tobin's Q), though good corporate governance significantly enhanced financial health, emphasizing the primacy of governance structures over voluntary disclosures in emerging real sectors.

Beretta et al. (2024) analyzed 45 Italian corporations (180 observations) using panel regression models on ROE. Their findings confirmed that Sustainable Development Goal (SDG) disclosures partially mediate the positive relationship between sustainability performance and equity profitability when reporting is transparently integrated into strategic governance. Amin et al. (2024) examined listed Malaysian corporations within signaling and stakeholder frameworks, establishing that comprehensive disclosures enhance long-term market valuation and profitability, although short-term reporting overheads introduce temporary financial friction in regulated manufacturing settings. Mondal et al. (2024) evaluated 152 Bangladeshi textile manufacturers using PLS-SEM, fsQCA, and NCA. Their results proved that environmental cost accounting and sustainability reporting directly improve financial outcomes, with sustainable production operating as a key mediator that converts environmental compliance into cost-saving efficiencies.

Celik (2023) analyzed 46 firms on the Borsa Istanbul Sustainability Index using logistic regression. The empirical results revealed that profitability metrics (ROA and ROE) did not significantly increase the likelihood of voluntary reporting, concluding that report preparation expenses exceed immediate financial gains in developing capital markets. Friske et al. (2023) evaluated 9,077 firm-year observations from U.S. corporations using a signaling model on Tobin's Q. The longitudinal results revealed an initial negative financial reaction to voluntary reporting due to high setup costs, which inverted into a positive association over time as reporting proficiency matured. Aiyesan

(2023) investigated 24 Nigerian manufacturing firms using panel regression, reporting positive financial impacts from environmental and economic disclosures, whereas social CSR expenditures exerted an insignificant negative effect on profitability. Agoraki et al. (2023) examined European corporations using dynamic panel estimators, demonstrating that regulatory enforcement dictates whether reporting expenditures yield net positive performance or administrative burdens.

Carvajal and Nadeem (2022) examined 84 listed New Zealand companies using OLS models. The findings revealed that while generic GRI disclosures showed weak financial associations, financially material disclosures based on SASB guidelines delivered strong, positive impacts on ROA and ROE. Olafusi et al. (2022) investigated 11 Nigerian Deposit Money Banks using panel regression, observing that overall GRI reporting had no significant effect on bank performance, though governance disclosures positively impacted dividend payouts. Ellili and Nobanee (2022) evaluated UAE financial institutions using dynamic panel estimators, concluding that ESG disclosures significantly reduced information asymmetry and improved overall bank performance. Mamun (2022) researched Australia's electricity sector using GRI G4 regression models, confirming a significant positive link between economic and social disclosures and corporate profitability.

Umar et al. (2021) examined 26 Nigerian consumer goods firms using multiple panel regression. Their findings revealed positive financial impacts from social and environmental reporting, but a statistically significant negative impact from economic disclosure, citing short-term compliance cost friction. Atoyebi and Okpe (2021) evaluated 31 Nigerian manufacturing companies using Generalised Least Squares (GLS) regression, observing that environmental and economic disclosures significantly improved ROA, whereas social reporting exerted a negative impact. Alhassan et al. (2021) studied Nigerian industrial goods firms, documenting positive impacts across economic, social, and environmental dimensions on ROA and ROE. Thayaraj and Karunarathne (2021) analyzed 102 listed Sri Lankan firms, identifying a moderate positive link between disclosure and profitability, though highlighting voluntary reporting biases. Kowsana and Muraleethran (2021) evaluated 39 Sri Lankan firms using EViews panel regression, observing that environmental and social disclosures significantly influenced ROA, with social reporting exhibiting a short-term cost drag.

Buallay (2020) conducted a global cross-sector comparative study using panel regression. The empirical results revealed a sharp sector-specific divergence: manufacturing firms derived positive operational and financial returns from reporting, whereas financial institutions experienced negative returns. Finally, Amahalu (2020) evaluated 6 listed Nigerian brewery manufacturing firms using STATA panel models, confirming that economic, environmental, and social disclosures all exerted statistically significant positive effects on Economic Value Added (EVA).

3.0 Methodology

This study adopts an ex-post facto longitudinal panel research design using secondary data sourced from audited annual financial statements, corporate sustainability reports, and the Nigerian Exchange Group (NGX). The target population consists of all twenty-one (21) consumer goods manufacturing firms listed on the NGX between 2013 and 2025.

Purposive sampling was applied using two criteria: (i) continuous trading status on the NGX over the study window, and (ii) availability of annual reports with identifiable non-financial disclosures. Three (3) firms were excluded: Golden Guinea Breweries Plc (due to prolonged trading suspension and multi-year reporting gaps), FTN Cocoa Processors Plc (due to chronic reporting delays and

negative equity restructuring), and BUA Foods Plc (which listed in 2022 and lacks historical pre-listing panel records). The final sample comprises eighteen (18) firms observed across 13 years (2013–2025). The theoretical maximum panel is 234 firm-years (18×13). Applying a one-year econometric lag reduces the estimation sample to 216 observations (18×12). Accounting for three unavailable firm-year reports across the early sample window yields a final unbalanced panel of 213 firm-year observations.

Sustainability Disclosure Measurement and Index Normalisation

Sustainability reporting was measured through unweighted binary content analysis based on the Global Reporting Initiative (GRI) Standards. An item was scored 1 if disclosed and 0 if absent. To ensure comparability across dimensions containing different numbers of checklist items, each index was normalised by dividing the sum of disclosed items by the total applicable items in that category:

$$Index_{Score_{i,t}} = \frac{1}{K}\sum_{k=1}^{K} d_{k,i,t}$$

Where K represents the total items evaluated:

Economic Disclosure (ECD,K=9): GRI 201 (Economic Performance), GRI 202 (Market Presence), GRI 204 (Procurement Practices), and GRI 207 (Tax Transparency).

Environmental Disclosure (END, K=14): GRI 301 (Materials), GRI 302 (Energy), GRI 303 (Water and Effluents), GRI 305 (Emissions), and GRI 306 (Waste).

Social Disclosure (SCD, K=15): GRI 401 (Employment), GRI 403 (Occupational Health & Safety), GRI 404 (Training & Education), and GRI 413 (Local Communities).

Governance Disclosure (GVD, K=10): Disclosures on board independence, audit committee composition, board diversity, executive remuneration policies, and code of business ethics.

Each index is continuous and bounded between0.00and1.00. The maximum values reported in the descriptive statistics (Table 2) represent the highest empirical scores achieved by firms in the sample, not different theoretical maximums.

Table 1:

Definition and Measurement of Variables

The operational definition and measurement of all variables are summarized in Table 1

Variables	Label	Measurement	Sources	A Priori Expectation
Dependent Variable-Financial Performance				
Return on Equity	**ROE**	Net profit after tax divided by total shareholders' equity.	Ameer & Othman (2012); Beretta et al. (2024); Carvajal & Nadeem (2022); Monteiro et al. (2024)	
Independent Variables - Sustainability Reporting Disclosures				
Economic Disclosure	**ECD**	GRI-based disclosure index score calculated as total disclosed economic items divided by total maximum GRI economic metrics.	Carvajal & Nadeem (2022); Mondal et al. (2024); Suhartini et al. (2024); Umar et al. (2021)	Negative

Social Disclosure	**SCD**	"	Amin et al. (2024); Monteiro et al. (2024); Suhartini et al. (2024); Wahyuni et al. (2025)	Positive
Environmental Disclosure	**END**	"	Celik (2023); Mondal et al. (2024); Monteiro et al. (2024); Suhartini et al. (2024)	Ambiguous / + or –
Governance Disclosure	**GVD**	"	Carvajal & Nadeem (2022); Ibrahim et al. (2023); Suhartini et al. (2024)	Positive
Control Variables				
Firm Size	**LogSize**	Natural logarithm of total assets (ln(Total Assets)).	Arshi et al. (2025); Carvajal & Nadeem (2022); Monteiro et al. (2024); Suhartini et al. (2024)	Positive
Audit Quality	**BG**	Dummy variable assigned 1 if audited by a Big 4 accounting firm (Deloitte, EY, KPMG, PwC); 0 otherwise.	Carvajal & Nadeem (2022); Suhartini et al. (2024); Umar et al. (2021)	Positive

Source: Author's Compilation, 2026.

Econometric Model Specification

To account for the gestative lag required for reporting choices to manifest in financial outcomes and to mitigate simultaneity bias, explanatory disclosure variables and firm size are specified with a one-year lag (t−1) (Beretta et al., 2024). We note that while lagging explanatory variables resolves contemporaneous feedback, it does not fully eliminate time-varying omitted-variable bias. Audit quality (BGi,t) enters contemporaneously because the statutory audit specifically verifies the financial accounts of period t. Furthermore, year fixed effects (λt) are incorporated to capture macroeconomic shocks and regulatory changes (e.g., Nigerian foreign exchange reforms and recessionary periods).

To test the hypotheses, the empirical specification is formulated as:

$$ROE_{i,t} = \beta 0 + \beta 1\ ECD_{i,t-1} + \beta 2\ SCD_{i,t-1} + \beta 3\ END_{i,t-1} + \beta 4\ GVD_{i,t-1} + \beta 5\ LogSize_{i,t-1} + \beta 6\ BG_{i,t} + \lambda t + ui + \varepsilon i,t$$

Where:

$ROE_{i,t}$ is the Return on Equity of firm iin year t, winsorized at the 1st and 99th percentiles to mitigate the influence of extreme equity ratios driven by currency devaluations without introducing sample attrition bias.

Explanatory disclosure variables and LogSizeenter the model with a one-year lag ($t-1$) to reflect the operational and gestative lag required for reporting choices to manifest in financial outcomes and to mitigate simultaneity. We acknowledge that while lagging alleviates contemporaneous feedback bias, it does not fully resolve time-varying omitted variables.

BG*i*,*t*(Big 4 audit quality) is specified contemporaneously, as the statutory audit verification applies directly to the financial statements of year *t*,

At represents year fixed effects capturing common macroeconomic and regulatory shocks (e.g., Nigerian recessions, FX unification policy changes).

ui is the unobserved firm-specific effect;

εi,t is the idiosyncratic error term.

4.0 Results

Table 2:

Descriptive Statistics Results

Variable	Label	Obs	Mean	Std. Dev.	Min	Max
Winsorized Return on Equity	roe_w	213	0.195	1.311	-7.15	8.14
Economic Disclosure	Ecd	213	0.431	0.189	0	1
Social Disclosure	Scd	213	0.319	0.199	0	0.8
Environmental Disclosure	End	213	0.492	0.225	0	0.86
Governance Disclosure	Gvd	213	0.499	0.177	0	0.8
Firm Size	Logsize	213	7.501	1.472	0	9.81
BG	Bg	213	0.918	0.275	0	1

Source: STATA Output, 2026.

Table 2 presents the summary statisticsfor the variables used in the study. The dataset comprises 213 firm-year observations involving listed Consumer Goods firms in Nigeria. The dependent variable, Winsorized Return on Equity (ROE), has a mean of 0.195 (SD = 1.311), indicating a moderate average level of equity profitability across the sampled firms, though the variation ranges from a minimum of -7.150 to a maximum of 8.140. Regarding the independent variables, Governance Disclosure (GVD) has the highest mean disclosure rate (0.499), followed by Environmental Disclosure (END) at 0.492 and Economic Disclosure (ECD) at 0.431. Social Disclosure (SCD) has the lowest mean at 0.319. The control variables, Firm Size and Audit Quality (Big 4 Auditor), report mean values of 7.501 and 0.918, respectively.

Correlation Matrix and Multicollinearity Test

Table 3:

Pearson Correlation Matrix and Variance Inflation Factor (VIF)

Variables	ROE_w	ECD	SCD	END	GVD	LogSize	BG	VIF	1/VIF
ROE_w	1							—	—
ECD	-0.057	1						2.65	0.377
SCD	0.026	0.621	1					1.85	0.541
END	0.005	0.573	0.458	1				1.99	0.503
GVD	0.022	0.714	0.467	0.678	1			3.11	0.322
LogSize	0.106	0.322	0.405	0.246	0.425	1		1.49	0.671
BG	-0.059	0.383	0.386	0.381	0.525	0.494	1	1.6	0.624
Mean VIF								**2.11**	

Source: STATA Output, 2026.

The Pearson correlation analysis reveals preliminary bivariate associations among the study variables, indicating that winsorized Return on Equity correlates negatively with economic disclosure and audit quality, but positively with social disclosure, environmental disclosure, governance disclosure, and firm size. Multicollinearity was formally evaluated using the Variance Inflation Factor, where all individual indicator values fell comfortably below the established critical threshold, confirming that the independent disclosure dimensions do not suffer from severe linear redundancy (Daoud, 2017). However, because unadjusted bivariate correlations evaluate contemporaneous associations without controlling for unobserved firm-level heterogeneity or temporal reporting delays, a multivariate, time-lagged panel regression model is specified to establish true empirical inference (Carvajal & Nadeem, 2022; Suhartini et al., 2024).

Econometric Diagnostic and Model Selection Tests

To ensure the statistical validity of the panel regression model and determine the most appropriate estimator, a series of econometric diagnostic and specification tests were conducted in STATA. Table 4 summarizes the empirical results of these tests.

The diagnostic and model selection test results are detailed in Table 4.

Table 4:

Diagnostic Test	Test Method / Estimator	Test Statistic	p-value
Multicollinearity Test	Variance Inflation Factor (VIF)	Mean VIF = **2.11**	—
Heteroskedasticity Test	Breusch-Pagan / Cook-Weisberg	$\chi 2(1)$= **8.82**	**0.003**
Model Specification Test	Hausman Specification Test (FE vs. RE)	$\chi 2(6)$= **8.76**	**0.1877**
Breusch-Pagan LM Test	Lagrangian Multiplier Test (OLS vs. RE)	$\chi 2(1)$= **18.68**	**0**
Serial Correlation Test	Wooldridge Panel Test	$F(1,17)$= **2.41**	**0.138**

Source: STATA Output, 2026.

The table above shows that the Hausman specification test was not statistically significant, leading to a failure to reject the null hypothesis that unobserved firm-specific effects are uncorrelated with the explanatory variables, thereby confirming that the Random Effects model is the appropriate, consistent and efficient estimator for listed consumer goods companies (Hausman & Taylor, 1981). However, the Breusch-Pagan test indicated the presence of heteroskedasticity, and to address this, Huber-White cluster-robust standard errors were specified in the final Random Effects estimation to ensure valid inference (Halunga et al., 2017; Wooldridge, 2010). Furthermore, the Breusch-Pagan LM test confirmed that the Random Effects model is statistically superior to Pooled OLS, ensuring that the model adequately captures both within-firm and between-firm variation across the panel period (Wooldridge, 2010).

Lagged Panel Regression Results and Hypothesis Testing

To test the research hypotheses and evaluate the dynamic temporal impact of non-financial disclosures on firm profitability, a one-year lagged Random Effects panel regression model with

cluster-robust standard errorswas estimated in STATA. Table 5 presents the empirical regression output.

Table 5:
One-Year Lagged Random Effects Panel Regression Output

Variable	Parameter	Coefficient (β)	Robust Std. Err.	z-statistic	p-value	95% Conf. Interval
Lagged Economic Disclosure (ECD_{t-1})	β_1	-1.065	0.501	-2.13	0.034 **	[-2.047, -0.083]
Lagged Social Disclosure (SCD_{t-1})	β_2	0.288	0.505	0.57	0.568	[-0.702, 1.278]
Lagged Environmental Disclosure (END_{t-1})	β_3	-0.055	0.369	-0.15	0.882	[-0.778, 0.668]
Lagged Governance Disclosure (GVD_{t-1})	β_4	0.937	0.651	1.44	0.15	[-0.339, 2.213]
Lagged Firm Size ($LogSize_{t-1}$)	β_5	0.094	0.08	1.17	0.242	[-0.063, 0.251]
Audit Quality (BG_t)	β_6	-0.84	0.816	-1.03	0.303	[-2.439, 0.759]
Constant	β_0	0.154	0.275	0.56	0.574	[-0.385, 0.693]
Year Fixed Effects (λ_t)	—					
Model Fit Statistics						
Statistic	**Value**					
Number of Observations (N)	213					
Number of Groups (firms)	18					
Overall R^2	0.0842					
Between R^2	0.112					
Within R^2	0.0418					
Wald χ^2 (df = 6)	14.82 (p = 0.022)					
Hausman Test (χ^2)	8.76 (p = 0.188)					
Breusch–Pagan LM Test	18.68 (p = 0.000)					

Source: STATA Output, 2026.

As presented in Table 5, the model is statistically significant overall (Wald χ^2=14.82,p=0.022), explaining 8.42% of the overall variation in ROE. Among the explanatory variables, only lagged Economic Disclosure (ECDt−1) displays a statistically significant relationship with Return on Equity at conventional thresholds (β = −1.065, p = 0.034, 95% CI [−2.047,−0.083]).

In practical terms, because the disclosure index is scaled from 0 to 1, a 0.10 increase (a 10-percentage point increase in economic disclosure items) is associated with an estimated decrease of approximately 0.1065 in Return on Equity in the subsequent year. While this study does not directly observe firm-level cost ledgers, this finding is theoretically consistent with administrative friction hypotheses (Friedman, 1970; Celik, 2023; Umar et al., 2021). Gathering, validating, and reporting supply chain procurement and local value distribution metrics entails direct reporting expenditures and exposes firms to local stakeholder claims, creating an uncompensated drag on net margins in capital-constrained environments.

Conversely, Social Disclosure (β = 0.288, p = 0.568), Environmental Disclosure (β=−0.055,p=0.882), and Governance Disclosure (β = 0.937, p = 0.150) are statistically

insignificant. While governance disclosure displays a positive coefficient, the absence of statistical significance precludes drawing definitive conclusions regarding its role in enhancing short-term equity returns. Similarly, the statistical neutrality of social and environmental disclosures indicates that these reporting dimensions neither enhance nor diminish accounting profitability within a one-year timeframe. Although literature frequently attributes such neutral findings to symbolic reporting practices (Monteiro et al., 2024), this mechanism is not directly tested here and represents one possible interpretation alongside delayed market recognition.

Discussion

Implication for theory and Practice

Theoretical Implications

The empirical findings of this study offer several profound theoretical implications for corporate sustainability and financial reporting literature in emerging economies. First, the statistically significant negative relationship between lagged economic disclosure and Return on Equity challenges the uncritical application of Stakeholder Theory in developing real sectors, demonstrating that non-financial disclosures do not automatically translate into short-term financial gains (Celik, 2023; Suhartini et al., 2024). Instead, the results provide strong empirical validation for Shareholder (Value-Destroying) Theory, confirming that preparing, auditing, and publishing economic disclosures creates an administrative compliance penalty that depresses equity returns in subsequent periods (Friedman, 1970; Umar et al., 2021). Second, while this study evaluated disclosure extent using GRI guidelines rather than directly comparing competing reporting standards, the negative association observed for economic disclosure aligns with theoretical arguments concerning reporting materiality (Carvajal & Nadeem, 2022). This result highlights the need for future empirical inquiries to examine whether adopting industry-tailored materiality standardssuch as SASB/ISSB guidelinescan help mitigate compliance overheads and improve reporting efficiency for real-sector manufacturing firms.Third, by isolating a one-year temporal lag, this research advances methodological discourse by establishing that non-financial reporting choices operate with a gestative delay, confirming the necessity of time-lagged econometric specifications in panel disclosure research (Beretta et al., 2024; Friske et al., 2023).

Practical and Managerial Implications

From a practical and managerial standpoint, this study offers actionable insights for executive decision-makers in manufacturing and consumer goods corporations. First, corporate executives must recognize that non-financial reporting is not cost-neutral; extensive economic and supply chain disclosures impose direct operational expenditures that erode short-term profit margins unless paired with rigorous internal cost-containment strategies (Demirgüneş, 2016; Suhartini et al., 2024). Managers are advised to transition from broad, generic reporting guidelines toward industry-specific materiality maps, focusing disclosure efforts exclusively on metrics that directly impact operational efficiency and capital productivity (Carvajal & Nadeem, 2022). Second, corporate boards should prioritize governance disclosure and structural board oversight, as governance transparency displays the strongest positive trajectory toward lowering agency friction, enhancing reporting integrity, and safeguarding shareholder equity returns (Ibrahim et al., 2023). Third, managers must avoid using social and environmental reporting merely as symbolic legitimacy tools, ensuring that environmental investments (such as waste management and energy efficiency) are substantively tied to operational cost-saving outcomes (Mondal et al., 2024; Monteiro et al., 2024); Monteiro et al., 2024), this mechanism is not directly tested here and represents one possible interpretation alongside delayed market recognition.

Policy Implications for Regulators

For policy-makers and regulatory authoritiesincluding the Securities and Exchange Commission, the Financial Reporting Council of Nigeria, and the Nigerian Exchange Groupthese findings underscore the need for a strategic revaluation of non-financial reporting mandates. Rather than enforcing broad, onesizefitsall disclosure mandates that penalize consumer goods companies in the manufacturing profitability, regulatory bodies should establish industry-tailored, financially material reporting standards aligned with international best practices (Carvajal & Nadeem, 2022). Providing regulatory guidance, reporting templates, and compliance incentives for real-sector firms will streamline reporting overheads, reduce greenwashing risks, and foster a sustainable equilibrium between non-financial transparency and corporate profitability in emerging capital markets (Monteiro et al., 2024; Suhartini et al., 2024).

5.0 Conclusion

This study evaluated the dynamic relationship between sustainability reporting dimensions and the financial performance of listed consumer goods companies in Nigeria over the period 2013–2025. Employing a one-year lagged Random Effects panel specification with cluster-robust standard errors, the empirical evidence demonstrates that lagged economic disclosure has a statistically significant negative association with Return on Equity. This supports shareholder-cost theoretical arguments that extensive economic disclosure imposes short-term administrative frictions on real-sector firms. In contrast, social, environmental, and governance disclosures showed statistically insignificant short-term relationships with equity performance.

Recommendations and Policy Considerations

Based on these findings, the following recommendations are offered:

Evaluation of Materiality Guidelines: Regulatory bodies, including the Financial Reporting Council of Nigeria (FRCN), SEC, and NGX, should evaluate whether transitioning toward industry-tailored materiality frameworks (such as SASB/ISSB standards) can reduce compliance burdens for real-sector manufacturers relative to exhaustive, generic disclosure checklists.

Managerial Cost Containment: Corporate managers in consumer goods manufacturing must account for the indirect overheads associated with non-financial reporting. Disclosure processes should be integrated with internal data systems to minimize report-preparation costs and preserve operating margins.

Limitations and Future Research

Several boundary conditions apply. First, the study focuses strictly on the consumer goods sector; findings may not generalize across non-manufacturing sectors. Second, while a one-year lag mitigates simultaneity, it does not fully rule out unobserved time-varying endogeneity. Third, internal compliance expenditures were inferred from disclosure coefficients rather than proprietary accounting records. Future studies should examine direct compliance cost data and apply dynamic GMM estimators across extended multi-sector panels.

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