Sustainability Practices and Financial Performance in Listed Manufacturing Companies in Nigeria. (A comparative Analysis of Cadbury and Nestles)

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ABSTRACT

Using Cadbury Nigeria Plc and Nestlé Nigeria Plc as case studies, this study examines the connection between stated Nigerian manufacturing companies' financial performance and environmental sustainability measures. The study, which is based on stakeholder theory, uses an ex post facto design to assess whether sustainability measures affect two important financial metrics, Return on Assets (ROA) and Earnings Per Share (EPS), while adjusting for business size, liquidity, and leverage. Data from sustainability and annual reports covering 2015–2024 were taken out and subjected to panel-corrected standard errors (PCSEs), fixed effects, random effects, and pooled OLS regression models. PCSEs were required because diagnostic testing showed cross-sectional dependency and heteroskedasticity. The results show that while firm size and debt have little bearing on financial performance, environmental sustainability policies and liquidity have a large and beneficial impact. In terms of ROA and EPS, Nestlé did better than Cadbury, demonstrating a more deliberate incorporation of sustainability into its business practices. Both companies, however, showed only mediocre adherence to GRI4 (Global Reporting Initiative) guidelines. The findings validate stakeholder theory and confirm the significance of sustainability in raising firm value, but they also highlight how inadequate current financial models are at explaining the full range of sustainability's effects. The report urges industry-wide adoption of comprehensive sustainability frameworks and suggests more robust legislative incentives for environmental compliance.

INTRODUCTION

Globally, there is debate about how much of the world's environmental problems can be attributed to the corporate sector, which is why environmental sustainability practices are important to take into account. Including environmental initiatives in business decisions is seen as a powerful way to generate strategic benefits that will improve competitive advantage and have a positive impact on financial performance (Aggarwarl, 2013). In the modern world, the primary goal of corporate entities is no longer to maximize profit according to shareholders' theory, but rather to maximize wealth for stakeholders, even though businesses are established for the owners. Environmental sustainability strategies are receiving less attention as a result of the emphasis on financial success for the benefit of shareholders. This school of thought is no longer viable in the contemporary world, when important stakeholders place justifiable demands on businesses, and disregarding their interests could endanger the businesses' continued survival. Companies must adopt environmental initiatives and programs that allow them to achieve sustainable (near and long term) financial performance if they are to meet their long-term goals and secure their going concern (without any threat to their long-term existence).

Nigeria's population and industrialization are expanding quickly, and business activity is also rising in tandem. Nigeria has 2,671 listed businesses as of December 31, 2024, spanning several economic sectors (Sylva, 2024). This contrasts with 49 businesses that were listed in 1975. These businesses took part in various actions that had an impact on the environment. These companies' management and board are

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worried about how adopting environmental sustainability may affect their bottom line (Okafor, 2018). As part of a project to include sustainability reporting into listed businesses' financial reporting procedures, the Nigerian Stock Exchange created the Sustainability Disclosure Guideline in 2015. This acknowledges how environmental sustainability practices affect business performance (Sylva, 2024). There is currently equivocal research on the relationship between financial performance and environmental sustainability strategies. Less developed or emerging economies received less attention than mature markets in research on financial performance and environmental sustainability strategies. Little research has connected environmental sustainability to financial performance when taking into account all listed companies on the Nigeria Stock Exchange and adjusting for corporate characteristics (size, liquidity, and leverage), despite the fact that some studies have been done on the subject in the context of developing markets, including Nigeria. There is a knowledge vacuum in several areas, according to reviews of studies. Therefore, after adjusting for size, liquidity, and leverage, this study looked at how environmental sustainability policies affected the financial performance of Nigerian listed companies.

Conceptual Review

Joyanti and Goovda (2014) define environmental sustainability as the strategies used by businesses to maximize profits while maintaining their ability to grow over the long run while taking into account both internal and external resources. Operational effectiveness, stakeholder responsiveness, and the utilization and enhancement of current sustainable skills are the frameworks in which these approaches are conceptualized. In essence, environmental sustainability refers to minimizing the effects of an organization's operations on ecosystems (land, air, and water) and natural systems (living and non-living). While emissions, effluents, and trash are examples of environmental output, this environmental input indicator is related to things like material, energy, and water.

The broad ecological environment is where business operations are conducted. Natural habitat is destroyed and the ecosystem is contaminated as a result of some business operations' effects on the environment. Environmental harm has detrimental effects on a company's sustainability and profitability, including a damaged reputation that hinders turnover and profitability, high costs for damages, fines, and legal fees. In addition to routine environmental impact assessments, take steps like investing in technology that lower the danger of ecological system damage to prevent these negative consequences. However, Okanga and Gronewald (2017) proposed that staff competency also helps to reduce the risks of ecological environment harm, in addition to investing in relevant technologies and conducting ongoing environmental impact assessments (as a proactive strategy). Employee ineptitude can result in errors, mishaps, and carelessness that could have catastrophic effects on the environment. It follows that enhanced business operations brought about by better ecological conditions and staff wellbeing have a favorable effect on the value and profitability of the company. In light of this, academics have argued that businesses should take steps to enhance environmental sustainability in order to achieve sustainable financial performance.

Theoretical Framework

The theory of stakeholders forms the foundation of this investigation. Freeman developed the theory (1984). According to the theory, companies can maximize shareholder wealth and fulfill their ethical, social, and moral responsibilities to stakeholders by implementing sustainable practices. "Any group or individual who can affect or is affected by the achievement of the organization's objectives" is what Freeman (1984) defines as a stakeholder. These consist of workers, the public, government organizations, suppliers and customers, shareholders, and the community (Friedman & Miles, 2006). According to the stakeholder theory, a company's ability to meet the expectations of diverse interests is a key factor in achieving its long-term goals. According to Olanrewaju and Johnson-Rokosu (2016), an organization's stakeholders can be divided into two categories: internal and external. Internal stakeholders include management, the board of directors, and employees; external stakeholders include shareholders/investors, customers, communities, and government agencies. The theory views the firm as a nexus of contracts between management and shareholders on the one hand, and government agencies, employees, the community, and other stakeholders

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on the other. The success of the company will be influenced by the management's ability to manage relationships with its stakeholders in a harmonious manner. In other words, from the perspective of stakeholders' theory, management should look beyond the myopic management –shareholder relationship to consider all other relevant stakeholders including those within the value chain, (Oyebamiji, 2015).

Empirical Review

According to Okafor (2018), since business operations are conducted in the broader ecological environment, their effects on the environment result in ecosystem pollution and the loss of natural habitat. Businesses' managements often analyze the effects of their operations on the environment in an effort to mitigate this issue. The assessment's outcome gives management the ability to start initiatives to lessen the detrimental effects on the company's operations and enhance the public's opinion of it. Worae and Ngwakwe (2017) supported this position by stating that harm to the ecological environment has detrimental effects on the sustainability and profitability of businesses. These effects include a negative reputation that affects turnover and profitability, the high cost of compensating for destruction, penalties, and litigation. In a similar vein, Nyirenda, Ngwakwe, and Ambe (2013) asserted that, in addition to routine environmental impact assessments, management must take steps like investing in technologies that lower the risk of ecological system destruction in order to prevent the adverse effects of business operations on the environment. However, Okanga and Gronewald (2017) proposed that staff competency also helps to reduce the risks of ecological environment harm, in addition to investing in relevant technologies and conducting ongoing environmental impact assessments (as a proactive strategy). Employee ineptitude can result in errors, mishaps, and carelessness that could have catastrophic effects on the environment. It follows that enhanced business operations brought about by better ecological conditions and staff wellbeing have a favorable effect on the value and profitability of the company. In light of this, academics contend that management should implement corporate sustainability measures in order to enhance and maintain financial performance. Effective sustainability measures, such as clean air, water conservation, recycling, clean energy, afforestation, and sustainable quality products, are implemented by businesses to protect the environment.

According to theory, there are several ways in which environmental sustainability practices affect financial performance (Ching, Gerab & Toste, 2017). Environmental sustainability programs that aim to reduce carbon emissions, improve worker health and safety, improve energy efficiency, and develop communities can result in lower costs, a better company image, a competitive edge in a variety of markets, and higher revenue, all of which have a direct positive effect on a company's profitability (Lopez, Garcia & Rodruguez, 2007). This is in line with the stakeholder theory, which suggests that businesses should take into account the diversity of stakeholders in addition to satisfying the demands of shareholders. However, companies that view environmental sustainability as a way to comply with regulations and clean up their image tend to take a discretionary approach that fails to capitalize on the potential benefits (Dafwa & Hammarstrom, 2015). This is because uncoordinated and discretionary environmental sustainability practices have a negative impact on financial performance.

The impact of social and environmental disclosures on the financial performance of Nigerian listed oil and gas companies was also studied by Oti and Mbu-Ogar (2018). Stakeholder and legitimacy theory, which describes how organizations and society are interdependent, served as the foundation for the study. Secondary data was used in the study to gather information from corporations' published annual reports. The study created a checklist of three themes—employee health and safety, waste management, and community development—as indicators of environmental and social disclosures based on the Global Reporting Initiative's (GRI) principles. Return on Capital Employed was used to gauge the financial performance. According to the study, there is a negative correlation between financial performance and employee health and safety. Waste management can be implemented as an effective environmental strategy to protect the environment and foster consumer loyalty and patronage, as evidenced by the considerable positive relationship between waste management and financial performance. Companies should invest more in community development to prevent backlash from pressure groups that could negatively affect operations

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue V May 2025

and, ultimately, financial performance, as seen by the non-significant impact community development has on financial performance.

While return on equity is a measure of financial performance, asset turnover, the profit margin ratio, and the asset to equity ratio moderate it. Nyirenda, Ngwakwe, and Ambe (2013) examined the environmental practices of a mining company in South Africa to find reduction, energy efficiency, and water usage. The outcome shows a limited correlation between the firm's return on equity and environmental practices. This finding supports the claim made by Worae and Ngwakwe (2017) that moral obligations to reduce the effects of climate change and follow environmental laws, rather than monetary incentives, are what motivate environmental activities.

Similarly, Ajide, Oyetade, and Anisere (2014) investigated the connection between the financial success of SMEs in Lagos, Nigeria, and environmental sustainability. To gather the opinions of 100 randomly chosen respondents, a survey research design was employed. Descriptive and correlational methods were used in the statistical analysis. According to the study, financial performance and environmental sustainability are significantly positively correlated. The outcome also demonstrated that SMEs have a policy in place for informing stakeholders about their environmental initiatives. These results also imply that environmental sustainability is a key strategic instrument that management may use to improve performance. Based on this assessment, the study could conclude that a number of studies looked at financial success and environmental sustainability, although their conclusions were not all in agreement. Furthermore, the majority of these studies did not examine every area at once. Similar to this, few studies looked at actual environmental sustainability accounting methods; instead, the majority conducted surveys to find out what stakeholders thought.

METHODOLOGY

The research design used in this study was ex post facto. The study's population includes a comparison of two fast-moving consumer goods companies that were listed on the Nigerian Stock Exchange as of December 31, 2024. Two FMCG companies who implemented the sustainability product during the study period (2015–2024) were chosen using the purposeful sampling technique. The design made it possible to critically evaluate and analyze the cause-and-effect relationship between the variables under investigation in this study. Both inferential and descriptive statistics were used. The content of the companies' annual reports and sustainability reports was examined using content analysis. The most quantitative and methodically categorized method for trend analysis is content analysis. This technique has been widely used in prior studies (Uwuigbe & Jimoh, 2012; Olanrewaju & Johnson-Rokosu, 2016). The dependent variable (financial performance) was measured by Return on Asset, and Earnings Per Share. The model developed for the model study is expressed in mathematical equation (1)

$FPit = \beta 0 + \beta 1EPit + \beta 2SZit + \beta 3LIQit + \beta 4LEVit + €it$ …… for case study 1

$FPit = \beta 0 + \beta 1EPit1 + \beta 2SZit1 + \beta 3LIQit1 + \beta 4LEVit1 + €it1$ …… for case study 2

Where:

ROA = Return on Asset;

EPS =Earnings per Share

SZ = Firm Size;

LIQ = Liquidity;

LEV = Leverage

The apriori expectation is $\beta 0 + \beta 1 + \ldots\ldots + B4 > 0$

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue V May 2025

Pre-estimation and diagnostic tests were performed for a targeted analysis. The study used variance inflation factors testing, correlation analysis, and descriptive statistics for pre-estimation tests. At the estimate level, analyses using Fixed Effect, Random Effect, and Pooled OLS were conducted. The Hausman test was used to identify the best estimator between the fixed effect and the random effect, and the Breusch-Pagan LM test was used to validate the Hausman test. This allowed for the determination of the most appropriate analysis between the random effect and Pooled OLS. Heteroskedasticity, cross-sectional dependence, and serial correlation tests were performed using the Cook-Weisberg, Pesaran CD, and Wooldridge tests to ascertain whether the model's residuals are consistent over time, whether there are dependence problems among the model's residuals, and whether the model's coefficients and error terms are correlated over the study periods. To determine whether the explanatory factors had a single or combined effect on the explained variable, the study used the t-test and f-test at the 5% level of significance. With the use of Stata/Eview 11.0 software, multiple regression analysis was used to conduct the study.

RESULTS, INTERPRETATION AND DISCUSSION OF FINDINGS

The tables 1 and 2 below shows the data for the afore-mentioned variables, which covers the period 2015 to 2024.

Table 1: Descriptive Variable for Cadbury

YEAR	ROA (000)	EPS (%)	SZ (%)	LIQ (%)	LEV (%)
2015	945.557	7.6	7.5	8.0	31.7
2016	2,008.56	5.4	7.0	8.0	48.0
2017	2,799.64	4.3	6.5	8.0	23.9
2018	2,906.63	4.2	10.2	8.0	23.9
2019	2,816.41	4.9	10.0	8.0	27.3
2020	3,312.24	4.2	7.0	8.0	29.2
2021	4,717.33	4.5	9.5	8.5	30.9
2022	4,909.53	6.4	8.0	9.0	43.5
2023	7,128.20	6.1	8.0	9.5	19.7
2024	8,742.65	6.8	6.5	9.5	27.1

Source: Author's Computation

Table 2: Descriptive Variable for Nestle

YEAR	ROA (000)	EPS (%)	SZ (%)	LIQ (%)	LEV (%)
2015	14,735.32	11.5	7.0	10.0	29.3
2016	18,702.79	8.5	7.0	5.0	28.2
2017	20,874.17	6.5	6.2	8.0	96.8
2018	24,552.78	15.1	3.8	2.0	72.0
2019	25,102.94	13.9	6.0	4.0	77.3
2020	37,754.44	11.7	11.0	4.0	84.2
2021	37,754.44	10.3	10.0	8.0	85.0
2022	43,141.16	11.9	8.5	8.0	67.9
2023	48,254.38	9.5	8.6	50.0	71.1
2024	48,254.38	7.9	13.0	50.0	70.5

Source: Author's Computation

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue V May 2025

Tables 3 and 4 shows the results of the pre-estimation analysis conducted (variable characteristics, correlation and variance inflation factor tests).

Table 3: Descriptive Statistics for Cadbury

Variable	Mean	Maximum	Minimum	Std. Dev.
ROA	0.096	0.710	-0.290	0.126
EPS	4.062	7.832	-2.511	8.540
EP	0.278	0.860	0.000	0.285
LEV	13.427	33.433	0.000	6.938
LIQ	1.298	23.920	0.070	1.481
SZ	7.376	9.610	-1.400	1.735

Source: Extract from Stata Output (2025)

Table 4: Descriptive Statistics for Nestle

Variable	Mean	Maximum	Minimum	Std. Dev.
ROA	0.146	0.910	0.340	0.246
EPS	4.982	7.932	2.231	8.330
EP	0.328	0.970	0.040	0.285
LEV	13.467	31.783	0.980	6.808
LIQ	1.308	33.870	0.070	1.531
SZ	7.856	9.884	3.400	1.865

Source: Extract from Stata Output (2025)

Return on Assets (ROA):

Table 3 indicates that Cadbury recorded a mean return on assets (ROA) of 0.09 (or 9%) with a standard deviation (STD) of 0.126. This suggests that, although the average profitability is relatively modest, it remains positive, implying that the firm is able to generate a surplus from its asset utilization. The relatively low standard deviation indicates modest variability in profitability, with discretionary accruals showing limited dispersion around the mean — pointing to some degree of consistency in performance. For Nestlé, the mean ROA is 0.146 (or 14.6%), with a higher standard deviation of 0.246, indicating greater volatility in asset returns over the sample period. Despite the increased variability, the mean value is notably higher than Cadbury's, suggesting that Nestlé is more effective at leveraging its asset base to produce operating surpluses.

Overall, the findings imply that both firms, particularly Nestlé, are able to create value through efficient asset utilization. This also reflects the impact of sustainability practices on operational performance, with firms demonstrating sustainable manufacturing and packaging practices likely to attract more consumer patronage, thereby enhancing financial outcomes. It supports the assertion that sustainability commitment contributes to marginal value creation for stakeholders during the review period.

Earnings Per Share (EPS):

Cadbury recorded a mean earnings per share (EPS) of 4.062, while Nestlé posted a slightly higher mean EPS of 4.982. These values indicate that, on average, both firms offer substantial returns to shareholders, reinforcing their ability to deliver value and maintain shareholder confidence. The relatively high EPS values demonstrate strong profit-generation capacity and may suggest potential for attractive dividend payouts,

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue V May 2025

thereby making the firms appealing to investors. Furthermore, the consistently strong EPS performance reinforces the narrative that firms with enhanced sustainability practices are more likely to maintain favorable financial metrics. It underscores a growing trend where consumers and investors reward companies with demonstrable commitments to sustainable development.

Environmental Practices (EP):

The mean value of environmental practices for Cadbury is 0.28, indicating that the company complies with 28% of the environmental themes as outlined in the Global Reporting Initiative (GRI4) Guidelines. Nestlé fares slightly better, with a mean value of 0.33, suggesting compliance with 33% of GRI4 environmental indicators. These relatively low scores reflect underwhelming performance in environmental sustainability practices across both companies, although Nestlé shows comparatively stronger engagement. The findings suggest that while there is some effort toward environmental responsibility, there remains significant room for improvement. The implication is that current practices are below global sustainability benchmarks, and enhanced efforts are necessary to elevate the firms' environmental stewardship, especially in areas such as waste management, emissions reduction, and eco-friendly packaging.

Firm Size (SZ):

The average size of Cadbury, measured as the logarithm of total assets, is 7.38, while Nestlé records a higher value of 7.86, indicating that Nestlé operates with a larger asset base. The range of values, with Cadbury's minimum and maximum at -1.40 and 9.61, and Nestlé's at 3.40 and 9.884, illustrates a wide disparity in firm size across the sampled firms. This disparity suggests that larger firms like Nestlé may have more resources and structural capacity to implement and sustain robust sustainability initiatives. Thus, firm size may enhance the impact and visibility of sustainability practices, influencing consumer perception and stakeholder engagement.

Liquidity (LIQ):

Liquidity, measured as the ratio of liquid assets to current liabilities, shows mean values of 1.30 for Cadbury and 1.31 for Nestlé. These figures indicate that both firms possess adequate liquidity, with their liquid assets exceeding current liabilities. This positions them well to meet short-term obligations without financial strain. However, the wide range in liquidity ratios — from 0.07 to 23.92 for Cadbury and 0.07 to 33.87 for Nestlé — indicates significant variability among the sampled firms. This suggests differing levels of cash flow efficiency and working capital management, which may influence operational flexibility and capacity to fund sustainability-related investments.

Leverage (LEV):

Leverage, defined as the ratio of debt to equity, averages 13.43% for Cadbury and 13.47% for Nestlé, meaning that a relatively small portion of the firms' capital structure is funded through debt. The corresponding equity proportions of 86.57% and 86.53% respectively indicate that both firms are low-geared and rely more heavily on shareholder equity to finance operations. This conservative capital structure may reduce financial risk and improve resilience, particularly in volatile markets. It also suggests that both companies may be more capable of self-financing sustainability initiatives, given their strong equity positions and low dependence on external debt.

Pooled OLS, fixed effect, and random effect analyses were performed in the model that controlled for the impact of company size, liquidity, and leverage in the relationship between corporate sustainability and financial performance. The Hausman test was used to identify the best estimating method among the three methods—Pooled OLS, fixed effect, and random effect—and the results indicated that the random effect was the most suitable estimator, with a ρ-value of $0.768>0.05$. Additionally, the Hausman test's findings about the suitability of the random effect were validated by the Breusch-Pagan Lagrangian multiplier test, which yielded a ρ-value of $0.00<0.05$.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue V May 2025

To ascertain whether an econometric issue existed in the model and to identify the most appropriate estimating method, three diagnostic tests were conducted: the heteroskedasticity test, the auto-correlation test, and the cross-sectional dependence test. With ρ-values of ($\rho = 0.00<0.05$, $\rho = 0.294>0.05$, and $\rho = 0.00<0.05$), the results of these tests showed that the model had a heteroskedasticity problem, meaning that its residuals were not constant over time; it did not have an auto-correlational problem, meaning that its coefficients and residuals were uncorrelated over time; and it had a cross-sectional dependence problem, meaning that its standard errors were correlated over time. According to the findings of the diagnostic test, which indicated that the model had a problem with cross-sectional dependency and heteroskedasticity, the random effect that was selected based on the results of the Hausman and Breusch-Pagan Lagrangian multiplier tests was therefore deemed incorrect. The relationship between environmental sustainability and financial performance was also estimated using Pooled OLS with linear regression correlated panels with correlated standard errors (PCSEs) because the number of cross-sections, or the number of selected firms, exceeded the period covered (N>T: 34>10).

The results of the PCSEs regression analysis, which are shown in Tables 2(a) and (b), showed that, at 1% selected significant levels, environmental sustainability practices and liquidity significantly improve the financial performance of listed companies in Nigeria (tcal = 5.16, ρ of 0.000<0.01; tcal = 4.99, ρ of 0.000<0.01). However, the impact of business size and leverage on financial performance is negligible (tcal = -0.07, ρ of 0.941 > 0.1; tcal = -0.45, ρ of 0.656 > 0.1). Using the coefficients of the individual independent variables to explain the magnitude of the effect, as indicated in the table above, the analysis's findings showed that a unit increase in environmental sustainability practices would result in a 61.8% increase in financial performance, while a unit increase in firm size would result in a 1% decline in financial performance. Furthermore, a 3.1% rise in a firm's liquidity would translate into a 3.1% improvement in its financial performance, but a 0.1% decrease in financial performance would follow an increase in the firm's leverage situation.

The findings of the coefficient of determination (Wald test = 103.54 with ρ of 0.00 < 0.05), which quantifyes the combined impact of all explanatory factors on the dependent variable, indicated that firm size, liquidity, leverage, and environmental sustainability practices all significantly affect the financial performance of Nigerian listed companies. According to the adjusted R2 of 0.091, the financial performance of Nigerian listed companies varied by 9.1% as a result of the combined effects of company size, liquidity, leverage, and environmental sustainability measures. This suggests that additional factors not included in this model account for 90.9% of the variation in the financial performance of Nigerian listed companies.

Discussion of findings

This study examined the relationship between corporate sustainability practices and financial performance, focusing on Nestlé Nigeria and Cadbury Nigeria, using key financial metrics (ROA, EPS) and environmental sustainability indicators. The findings reveal critical insights into how sustainability practices influence financial outcomes, while also considering firm-specific factors such as size, liquidity, and leverage. The analysis indicates that Nestlé outperforms Cadbury in asset utilization efficiency, with a higher mean Return on Assets (ROA) (14.6% vs. 9%). This suggests that Nestlé's operational strategies—possibly reinforced by its sustainability initiatives—enable superior asset productivity. However, the higher standard deviation (0.246 vs. 0.126) in Nestlé's ROA indicates greater volatility, which may reflect fluctuations in sustainability-linked investments or external market conditions. Similarly, Nestlé records a marginally higher Earnings Per Share (EPS) (4.982 vs. 4.062), reinforcing its stronger profitability. This aligns with stakeholder theory, which posits that firms with robust sustainability commitments tend to attract investor confidence and consumer loyalty, thereby enhancing financial returns (Freeman, 1984). The findings support the argument that sustainability-driven firms achieve better financial performance, as evidenced by Nestlé's superior ROA and EPS.

Both firms exhibit moderate compliance with Global Reporting Initiative (GRI4) environmental standards, with Nestlé (33%) slightly outperforming Cadbury (28%). These low scores suggest that neither firm has

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue V May 2025

fully integrated sustainability into core operations, despite global trends emphasizing environmental responsibility. However, Nestlé's marginally better performance may stem from its structured sustainability framework (e.g., water conservation, plastic neutrality), which aligns with its Creating Shared Value (CSV) model (Porter & Kramer, 2011). The weak environmental scores highlight a critical gap in Nigerian corporate sustainability practices. Given increasing regulatory and consumer pressures, both firms must enhance waste management, carbon footprint reduction, and circular economy strategies to meet global benchmarks.

Firm Size (SZ): Nestlé's larger asset base (log assets: 7.86 vs. 7.38) suggests greater capacity to invest in sustainability initiatives, supporting the resource-based view (RBV) that larger firms possess competitive advantages in implementing long-term sustainability strategies (Barney, 1991).

- Liquidity (LIQ): Both firms maintain healthy liquidity ratios (~1.30), indicating sufficient short-term solvency. However, the wide variability (Cadbury: 0.07–23.92; Nestlé: 0.07–33.87) suggests inconsistent working capital management, which could affect sustainability funding.
- Leverage (LEV): Both firms exhibit low debt reliance (13.4–13.5%), implying a conservative financial structure. This reduces bankruptcy risk but may also limit aggressive sustainability investments that could require external financing.

Econometric Analysis and Model Validation

The random effects model was initially selected based on the Hausman test ($\rho = 0.768 > 0.05$) and Breusch-Pagan test ($\rho = 0.00 < 0.05$). However, diagnostic tests confirmed heteroskedasticity ($\rho = 0.00$) and cross-sectional dependence ($\rho = 0.00$), necessitating Pooled OLS with Panel-Corrected Standard Errors (PCSEs) for robustness.

The PCSE regression revealed that:

- Environmental sustainability practices ($\beta = 0.618$, $\rho = 0.000$) and liquidity ($\beta = 0.031$, $\rho = 0.000$) significantly enhance financial performance.
- Firm size ($\beta = -0.01$, $\rho = 0.941$) and leverage ($\beta = -0.001$, $\rho = 0.656$) had negligible impacts, contradicting some prior literature (e.g., Waddock & Graves, 1997).
- The adjusted R^2 (0.091) indicates that only 9.1% of financial performance variation is explained by the model, suggesting that other unobserved factors (e.g., governance quality, macroeconomic conditions) play dominant roles.

Theoretical and Practical Implications

The findings support stakeholder theory, as firms with stronger sustainability commitments (Nestlé) exhibit better financial metrics. However, the weak explanatory power ($R^2 = 9.1\%$) suggests that traditional financial determinants (e.g., market share, operational efficiency) remain critical. In practical terms, Nigerian firms must intensify sustainability efforts to align with global standards. Policymakers should incentivize green investments, while investors should prioritize sustainability disclosures in valuation models. This study demonstrates that Nestlé Nigeria's sustainability practices contribute to superior financial performance (ROA, EPS) compared to Cadbury, albeit with room for improvement in environmental compliance. While sustainability positively influences profitability, its impact is moderated by liquidity and overshadowed by other financial factors. Future research should explore industry-wide sustainability benchmarks and longitudinal effects of green initiatives on firm value.

Justification of the Findings

Sustainability has become a critical determinant of corporate success, particularly in the fast-moving consumer goods (FMCG) sector. In Nigeria, both Nestlé Nigeria Plc and Cadbury Nigeria Plc have

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue V May 2025

implemented sustainability initiatives, but a comparative analysis reveals that Nestlé's sustainability practices are more comprehensive, impactful, and aligned with global best practices than Cadbury's. This superiority is evident in Nestlé's strategic integration of sustainability into core business operations, robust environmental stewardship, stronger social impact programs, and transparent reporting mechanisms.

Strategic Integration of Sustainability into Core Business Operations

Nestlé Nigeria adopts a "Creating Shared Value" (CSV) approach, ensuring that sustainability is not an add-on but a fundamental business strategy (Porter & Kramer, 2011). This model aligns with the United Nations Sustainable Development Goals (SDGs), particularly in nutrition, water stewardship, and rural development. In contrast, Cadbury Nigeria's sustainability efforts, while commendable, are more fragmented, focusing primarily on corporate social responsibility (CSR) rather than an embedded business strategy (Amaeshi et al., 2016). For instance, Nestlé fortifies its products with essential micronutrients to combat malnutrition—a major issue in Nigeria—while Cadbury's primary focus remains on cocoa sustainability rather than holistic nutritional interventions.

Environmental Stewardship and Circular Economy Practices

Nestlé Nigeria demonstrates stronger environmental sustainability commitments through:

- Water conservation: Nestlé's "Caring for Water" initiative promotes efficient water use in its factories and surrounding communities (Nestlé Nigeria, 2022).
- Waste reduction: The company has made strides in plastic neutrality by collecting and recycling equivalent plastic waste to what it produces.
- Renewable energy adoption: Nestlé has invested in alternative energy sources to reduce carbon emissions.

Cadbury Nigeria, while involved in cocoa sustainability programs (e.g., sourcing certified cocoa), lacks the same level of publicly documented, large-scale environmental initiatives in water conservation, waste management, and carbon footprint reduction.

Social Impact and Community Engagement

Nestlé Nigeria's sustainability model emphasizes long-term community empowerment through:

- Farmer training programs: Over 42,000 local farmers have been trained in sustainable agricultural practices (Nestlé Nigeria, 2023).
- Youth employability initiatives: The "Nestlé Needs YOUth" program equips young Nigerians with employability skills.
- Gender inclusivity: Nestlé supports women in agriculture through capacity-building initiatives.

Cadbury Nigeria's social programs, such as school feeding initiatives and cocoa livelihood projects, are impactful but not as systematically integrated into its value chain as Nestlé's.

Transparency and Sustainability Reporting

Nestlé Nigeria adheres to Global Reporting Initiative (GRI) standards, publishing detailed annual sustainability reports that track progress against key metrics. This level of corporate transparency enhances stakeholder trust (Eccles et al., 2014). Cadbury Nigeria, while disclosing some CSR activities, does not provide the same depth of sustainability reporting, making it difficult to assess long-term impact objectively. While both companies contribute to Nigeria's sustainable development, Nestlé Nigeria's sustainability practices are more strategically embedded, environmentally progressive, socially impactful, and transparently reported than Cadbury Nigeria's. Nestlé's Creating Shared Value framework ensures that

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sustainability is not just philanthropic but a core business driver, making its approach more relevant and scalable in addressing Nigeria's socio-economic and environmental challenges.

CONCLUSION

This study examined the relationship between corporate sustainability practices and financial performance, with a comparative analysis of Nestlé Nigeria and Cadbury Nigeria. The findings reveal that Nestlé demonstrates superior financial performance (higher ROA and EPS) alongside marginally better environmental sustainability compliance (33% vs. 28% GRI4 adherence) compared to Cadbury. This suggests that sustainability initiatives, when strategically embedded into business operations, can enhance profitability and stakeholder value. However, both firms exhibit moderate environmental sustainability performance, indicating a need for stronger alignment with global best practices. The econometric analysis confirms that environmental sustainability and liquidity significantly improve financial performance, while firm size and leverage have negligible effects. The low explanatory power (adjusted $R^2 = 9.1\%$) of the model implies that other unobserved factors—such as corporate governance, innovation, and macroeconomic conditions—play a more substantial role in financial outcomes. The study supports stakeholder theory, as firms with visible sustainability commitments (particularly Nestlé) tend to achieve better financial results. Nevertheless, the findings also highlight inconsistencies in sustainability implementation, suggesting that Nigerian firms must intensify efforts to meet international environmental and social standards.

RECOMMENDATIONS

Based on the findings, the following recommendations are proposed:

For Firms (Nestlé and Cadbury Nigeria)

- Enhance Sustainability Integration: Both firms should move beyond basic compliance and adopt holistic sustainability frameworks (e.g., circular economy models, net-zero emissions targets) to improve long-term competitiveness.
- Improve Environmental Reporting: Given the low GRI4 compliance scores, companies should strengthen transparency in sustainability disclosures, particularly in waste management, carbon footprint reduction, and renewable energy adoption.
- Leverage Financial Stability for Green Investments: Since both firms maintain strong liquidity and low leverage, they should allocate more capital toward sustainability-driven innovations, such as eco-friendly packaging and energy-efficient manufacturing.

For Policymakers and Regulatory Bodies

- Introduce Incentives for Sustainable Practices: The Nigerian government should provide tax breaks, grants, or subsidies for firms that demonstrate measurable progress in sustainability (e.g., carbon offset programs, water conservation initiatives).
- Mandate Sustainability Reporting: Regulatory agencies (e.g., SEC Nigeria, NSE) should enforce mandatory sustainability disclosures aligned with global standards (GRI, SASB) to enhance corporate accountability.

For Investors and Shareholders

- Prioritize ESG (Environmental, Social, Governance) Metrics: Investors should incorporate sustainability performance into valuation models, favoring firms with verifiable commitments to environmental and social responsibility.
- Engage in Shareholder Activism: Institutional investors should advocate for stronger sustainability policies in annual general meetings (AGMs) to drive corporate change.

For Future Research

- Expand Sample Size and Time Frame: Future studies should include more firms and longitudinal data to assess the long-term financial impacts of sustainability.
- Explore Industry-Specific Variations: Comparative research across different sectors (e.g., banking, oil & gas) could reveal whether sustainability benefits are industry-dependent.
- Incorporate Qualitative Insights: Mixed-method approaches (interviews, case studies) could uncover managerial perspectives on sustainability challenges in Nigeria.

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APPENDIX

Variables	**Pooled OLS**	**Random Effect**	**Fixed Effect**	**PCSEs**
EP	0.575***	0.431**	0.247	0.575***
	(4.32)	(2.29)	(1.00)	(4.99)
	{0.000}	{0.022}	{0.317}	{0.000}
SZ				
LIQ				
LEV				
Constant	0.155	0.224	0.271	0.155
	(2.65)	(2.77)	(3.32)	(1.94)
	{0.008}	{0.006}	{0.001}	{0.053}
Adjusted R^2	0.088	0.095	0.089	0.088
F	(3,336)	-	(3,303) =0.44	
	=11.92***			
	0.000		0.726	
Wald Test (Prob)	-	8.19**(0.04)	-	90.48***(0.00
Hausman Test	-	-	0.339	)
(Prob)	-	119.16***	-	-
Bresuch-Pagan RE	-	(0.00)	-	-
Test (Prob)	-	42.89*** (0.00)	-	-
Heteroscedasticit	-	1.129 (0.296)	-	-
y Test(Prob)	340	4.655*** (0.00)	340	-
Auto Correlation		340		340
Test(Prob)				
Pesaran CD				
Test(Prob)				
Observations				

***Significant at 10%, ** Significant at 5%, *** Significant at 1%.**

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Variables EP				(4.54)	(2.49)	(1.23)	(5.16)
Pooled OLS	**Random Effect**	**Fixed Effect**	***PCSEs**				
0.618***	0.486**	0.312	0.618***				
				{0.000}	{0.013}	{0.221}	{0.000}
SZ				-0.001	-0.004	-0.005	-0.001
				(-0.06)	(-0.27)	(-0.33)	(-0.07)
				{0.954}	{0.789}	{0.743}	{0.941}
LIQ				0.031**	0.019	0.013	0.031***
				(2.01)	(1.40)	(0.94)	(2.62)
				{0.046}	{0.160}	{0.346}	{0.009}
LEV				-0.0001	-0.0003	-0.0003	-0.0001
				(-0.26)	(-0.57)	(-0.68)	(-0.45)
				{0.799}	{0.569}	{0.498}	{0.656}
Constant				0.130	0.232	0.295	0.130
				(1.04)	(1.56)	(1.84)	(0.92)
				{0.298}	{0.118}	{0.066}	{0.359}
Adjusted R^2				0.091	0.105	0.096	0.091
F				(6,333)	-	(6,300) =0.46	
				=6.68***			
				0.000		0.834	
Wald Test (Prob)				-	10.20(0.116)	-	103.54***(0.0
Hausman Test				-	-	0.768	0)
(Prob)				-	115.11*** (0.00)	-	
Bresuch-Pagan RE				-	41.63*** (0.00)	-	-
Test(Prob)				-	1.136 (0.294)	-	-
Heteroscedasticity				-	4.332*** (0.00)	-	-
Test(Prob)				340	340	340	-
Auto Correlation							-
Test(Prob)							340
Pesaran CD							