EFFECT OF CORPORATE SOCIAL RESPONSIBILITY ON THE PERFORMANCE OF LISTED FOODS AND BEVERAGES MANUFACTURING FIRMS IN NIGERIA

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Abstract
In Nigeria's vibrant foods and beverages sector, where escalating stakeholder demands for sustainability intersect with fierce market competition, the imperative for robust corporate social responsibility (CSR) practices has never been more critical, as firms risk losing market share without addressing environmental and social concerns. This study investigates the effect of CSR, specifically environmental and social responsibility, on the financial performance of 12 listed foods and beverages manufacturing firms in Nigeria from 2017 to 2024. Employing a quantitative research design, the study analyzes secondary data extracted from annual reports using STATA, with methods including descriptive statistics, correlation analysis, and fixed effects regression, using return on assets (ROA) as the key performance indicator. The findings reveal that environmental responsibility ($\beta = 0.3436, p < 0.001$) and social responsibility ($\beta = 0.1813, p < 0.001$) significantly affect performance with environmental initiatives, such as pollution control and sustainable resource use, exerting a stronger influence due to their direct effect on cost efficiencies and regulatory compliance. Social responsibility, encompassing community development and employee welfare, contributes positively but to a lesser extent, reflecting varied firm priorities. The study recommends that these firms strategically integrate CSR by investing in eco-friendly technologies, such as energy-efficient systems, and community engagement programs, like health and education initiatives, to boost financial performance while aligning with stakeholder expectations for sustainable practices in Nigeria's evolving economic setting.
Keywords: *Performance, Corporate Social Responsibility, Environmental Social Responsibility*

INTRODUCTION

Firm performance is a critical indicator of organizational success involving both financial and non-financial metrics that reflect efficiency, profitability, and sustainability. Globally, performance has been evaluated through lenses such as return on assets (ROA), return on equity (ROE), and market-based measures like Tobin's Q, with studies highlighting how external factors like economic volatility and regulatory environments influence outcomes (Gjerde et al., 2010). In developed economies, such as those in Europe and North America, firm performance is often linked to innovation, corporate governance, and access to capital markets, where high-performing firms demonstrate resilience during financial crises (Al-Hadi et al., 2017). This global perspective underscores the importance of strategic management in enhancing performance, with empirical evidence showing that superior stock market performance correlates with competitive advantages (Gjerde et al., 2010).

Shifting to emerging markets, firm performance faces unique challenges including political instability, inadequate infrastructure, and limited access to finance, which can hinder growth and profitability (Buallay et al., 2021). In Asia and Latin America, studies indicate that performance metrics are heavily influenced by macroeconomic factors and corporate strategies aimed at mitigating risks, such as those related to environmental and social issues (Chen & Chen, 2022). For instance, in developing countries, firms that integrate sustainability practices tend to exhibit better long-term performance, as evidenced by improved investment efficiency and reduced financial distress (Lee, 2020; Erragragui, 2017).

In Nigeria, firm performance within the manufacturing sector, particularly foods and beverages, is constrained by issues like supply chain disruptions, inflation, and regulatory compliance, leading to fluctuating profitability (Igbinovia, 2021). Local studies reveal that Nigerian firms often struggle with low ROA due to high operational costs and market competition, yet those with strong governance structures show improved outcomes (Barako, 2007).

Corporate social responsibility (CSR) has evolved globally as a strategic imperative for businesses, shifting from philanthropic activities to integrated practices that address environmental, social, and governance (ESG) concerns (Ioannou & Serafeim, 2017). Worldwide, CSR is recognized for enhancing firm reputation and stakeholder trust, with evidence from developed markets showing its positive impact on access to finance and long-term value creation (Cheng et al., 2014). In regions like Europe, mandatory sustainability reporting has driven CSR adoption, leading to improved ESG performance and reduced risks (Jasni et al., 2020).

In emerging economies, CSR adoption is growing but often reactive to regulatory pressures and stakeholder demands, with studies in Asia demonstrating its role in mitigating climate-related risks and boosting firm value (Chen & Chen, 2022; Khan, 2022). Developing countries face barriers such as resource constraints, yet CSR is seen as a tool for competitive advantage, particularly in sectors exposed to environmental scrutiny (Genedy & Sakr, 2017).

In Nigeria, CSR practices are increasingly mandated by regulations like the Nigerian Code of Corporate Governance, focusing on community development and environmental protection, though implementation varies across industries (Asemah et al., 2013). Local firms in manufacturing have adopted CSR to improve goodwill, but challenges like corruption and weak enforcement limit its effectiveness, as noted in studies on consumer goods sectors (Igbinovia, 2021).

Environmental responsibility, as a component of CSR, involves practices aimed at minimizing ecological impact, such as reducing emissions, waste management, and sustainable resource use (Bassen & Kovacs, 2008). This dimension is crucial for manufacturing firms, where production processes can lead to environmental degradation, and its integration enhances firm legitimacy and operational efficiency (Hahn et al., 2014).

Social responsibility encompasses initiatives that promote community welfare, employee rights, and ethical labor practices, fostering stakeholder relationships and long-term sustainability (Lindgreen et al., 2009). In the context of foods and beverages manufacturing, it includes health and safety standards, community engagement, and fair-trade practices, contributing to societal well-being (Asemah et al., 2013).

The linkage between performance and CSR is evident in how responsible practices can lead to cost savings, enhanced reputation, and better financial outcomes, with empirical studies showing positive associations in various contexts (Guo et al., 2020; Buallay et al., 2021).

Statement of the Problem

Listed foods and beverages manufacturing companies globally play a major role in GDP, employment, and revenue generation, serving as the backbone and engine of development. CSR is becoming increasingly crucial for growing businesses, and corporations have known that they cannot be successful unless they safeguard and promote the interests of all stakeholders. Furthermore, the ongoing agitation of stakeholders for environmentally friendly production and competition for market shares have made CSR a veritable tool for improved goodwill. However, according to Igbinovia (2021) and similar studies in developing countries like Nigeria, many firms are forced out of the market as a result of their failure to incorporate CSR into their strategic planning process. Furthermore, previous similar studies such as Deepak and Yash (2024), Chen and Chen (2022) have been conducted in developed and developing countries outside Nigeria. In Nigeria, the little research efforts made including Igbinovia (2021) domiciled their studies in oil and gas and other manufacturing industries other than the listed foods and beverages manufacturing firms in Nigeria, therefore the need for this study.

Objectives of the Study

The main objective of this study is to examine the effect of corporate social responsibility on the performance of listed foods and beverages manufacturing firms in Nigeria. However, specific objectives are to:

(I) Investigate the effect of environmental responsibility on the performance of listed foods and beverages manufacturing firms in Nigeria.

(II) Assess the effect of social responsibility on the performance of listed foods and beverages manufacturing firms in Nigeria.

LITERATURE REVIEW

Firm Performance

Firm performance refers to the outcomes achieved by an organization in meeting its goals, typically measured through financial and non-financial metrics. Financial performance metrics relate to the overall financial health of the company over a specified time frame. The utilization of ratios, company profitability, and the overall performance of the balance sheet are all included in this performance metric (Al-Hadi et al., 2017; Abdul-Satta, 2015). Return on assets (ROA), a key indicator, captures how efficiently a firm uses its assets to generate earnings, often serving as a benchmark for operational effectiveness and profitability (Gjerde et al., 2010). Studies have shown that ROA can be influenced by factors such as capital structure and operational decisions, with higher ROA values indicating superior financial health in competitive markets (Buallay et al., 2021). Additionally, ROA is frequently compared to other metrics like return on equity (ROE) to provide a comprehensive view of firm efficiency and risk management (Khan, 2022).

The qualitative metrics that take into account clientele and loyalty are the non-financial metrics. These metrics are centered on the business's qualitative elements and long-term success (Buallay et al., 2021). This study uses financial performance metrics as performance indicators, specifically return on assets (ROA). Non-financial aspects, such as customer satisfaction and brand loyalty, complement financial measures by highlighting sustainable growth potential beyond immediate profitability (Lee, 2020). Empirical research underscores that integrating both financial and non-financial metrics, including ROA as a proxy for overall performance, provides a robust framework for evaluating firm value in dynamic economic environments (Erragragui, 2017). Furthermore, ROA's relevance extends to market valuation models, where it correlates with stock performance and investor perceptions of firm stability (Deepak & Yash, 2024).

Corporate Social Responsibility (CSR)

Corporate social responsibility (CSR) is defined as the commitment by businesses to contribute to sustainable economic development by working with employees, their families, the local community, and society at large to improve quality of life (Asemah et al., 2013). It involves voluntary actions beyond legal requirements to address social, environmental, and ethical issues (Campbell et al., 2003). CSR is often viewed as a self-regulating business model that integrates social and environmental concerns into operations, enhancing stakeholder trust and long-term viability (Cheng et al., 2014). This multifaceted approach includes economic, legal, ethical, and philanthropic dimensions, as outlined in foundational frameworks that emphasize societal contributions (Ioannou & Serafeim, 2017). Research highlights CSR's role in fostering reputation and competitive advantage, particularly in global markets where ethical practices drive consumer and investor preferences (Jasni et al., 2020).

Beyond its main definition, CSR evolves as a strategic tool for risk mitigation and value creation, adapting to contemporary challenges like sustainability and inclusivity (Hahn et al., 2014). It promotes accountability through reporting and initiatives that align business goals with societal needs, as evidenced in studies on its impact across industries (Khan, 2022). CSR's theoretical underpinnings draw from stakeholder theory, emphasizing balanced value distribution among diverse groups (Guo et al., 2020). In practice, effective CSR implementation correlates with enhanced corporate image and employee engagement, underscoring its integral role in modern governance (Genedy & Sakr, 2017).

Environmental Responsibility

Environmental responsibility within CSR involves corporate actions to protect and preserve the natural environment, including pollution control, resource conservation, and sustainable practices (Bassen & Kovacs, 2008; Chen & Chen, 2022). This dimension focuses on minimizing ecological footprints through initiatives like waste reduction and green innovation, which enhance corporate legitimacy and operational resilience (Hahn et al., 2014). Studies indicate that environmental CSR contributes to sustainable development by addressing climate change and biodiversity, often leading to cost savings and regulatory compliance benefits (Erragragui, 2017). It is increasingly integrated into business strategies, with metrics tracking emissions and resource efficiency to meet stakeholder expectations (Buallay et al., 2021).

Further expanding, environmental responsibility fosters innovation in eco-friendly technologies and supply chains, positively impacting firm performance and societal well-being (Deepak & Yash, 2024). Research emphasizes its role in risk management, where proactive environmental practices mitigate legal and reputational hazards in volatile markets (Khan, 2022). In developing contexts like Nigeria, it addresses local challenges such as pollution from manufacturing, promoting community health and long-term economic stability (Igbinovia, 2021). Overall, this CSR component aligns with global sustainability goals, driving corporate transitions toward circular economies and ethical resource use (Jasni et al., 2020).

Social Responsibility

Social responsibility focuses on the societal impact of business operations, including community development, human rights, and employee welfare initiatives (Lindgreen et al., 2009; Jasni et al., 2020). It encompasses efforts to promote equity, diversity, and ethical labor practices, building stronger community ties and internal morale (Asemah et al., 2013). This aspect of CSR addresses social justice by supporting education, health, and poverty alleviation programs, which enhance corporate reputation and stakeholder loyalty (Cheng et al., 2014). Empirical evidence shows that social initiatives correlate with improved employee engagement and consumer trust, particularly in service-oriented industries (Lee, 2020).

In a broader scope, social responsibility integrates ethical considerations into decision-making, ensuring businesses contribute positively to societal norms and human development (Campbell et al., 2003). It mitigates social risks like inequality and discrimination, fostering inclusive growth in diverse economic contexts (Guo et al., 2020). In emerging markets, such as Nigeria, it plays a vital role in community empowerment and conflict resolution, aligning with local cultural values (Igbinovia, 2021). Ultimately, robust social CSR practices drive sustainable business models by prioritizing human capital and ethical governance (Hahn et al., 2014).

Environmental Responsibility and Firm Performance

In 2024, Deepak and Yash conducted a study to examine the relationship between environmental, social, and governance (ESG) factors and the financial performance of publicly listed firms on the S&P 500 in the United States. Using secondary data from corporate annual reports and ESG databases, they applied regression analysis to assess the correlation between ESG factors and financial performance metrics, such as return on equity (ROE) and market value. Their findings revealed a positive correlation, particularly in the environmental and social dimensions, suggesting that firms with strong ESG practices tend to achieve better financial outcomes. However, the study's focus on large S&P 500 firms limits its generalizability to smaller firms or those in developing economies, and the reliance on secondary data may introduce biases due to inconsistent ESG reporting standards.

Chen and Chen (2024) explored the impact of climate-related risks and ESG practices on the financial performance of manufacturing firms across multiple countries, including both developed and developing economies. They collected secondary data from sustainability reports, financial statements, and climate risk indices, employing panel data regression to evaluate the relationship between ESG practices and financial outcomes while controlling for climate-related risks. Their results indicated that strong ESG practices, particularly in environmental management, enhanced financial performance by reducing costs

associated with climate risks and improving operational efficiency. Despite these insights, the broad geographic scope may overlook context-specific factors, such as regulatory differences in developing countries like Nigeria, and the focus on manufacturing may not fully capture sector-specific dynamics.
A study by Erragragui (2023) analyzed how creditors price environmental, social, and governance (ESG) risks in their lending decisions and the subsequent impact on firm value, using a global sample of firms across various industries with a focus on credit markets. Secondary data from credit ratings, financial statements, and ESG performance metrics were used, with econometric modeling, including regression analysis, to assess the relationship between ESG performance and the cost of debt. The findings showed that better environmental performance was associated with lower financing costs, as creditors perceive lower risk, leading to improved firm value. However, the emphasis on creditor perspectives may undervalue the impact of other stakeholders, such as consumers or communities, and the global focus may not fully account for challenges in emerging markets like Nigeria.

Social Responsibility and Firm Performance

Buallay et al. (2024) examined the effect of sustainability reporting, with a focus on social responsibility aspects, on bank performance following the 2008 financial crisis, targeting banks in developed and developing countries. They collected secondary data from annual reports, sustainability disclosures, and financial databases, using fixed effects regression and descriptive statistics to analyze the impact on financial performance metrics like return on assets (ROA). Their findings indicated that sustainability reporting, particularly social initiatives such as community engagement and employee welfare, positively affected bank performance by enhancing reputation and stakeholder trust. The study's focus on banks, however, limits its applicability to manufacturing sectors like foods and beverages, and the post-crisis context may not fully reflect current economic conditions in Nigeria.

In 2023, Guo et al. explored the role of social responsibility in moderating the relationship between corporate social responsibility (CSR) and firm value, focusing on publicly listed firms across multiple industries in China. Using secondary data from corporate financial reports and CSR disclosures, they applied moderated regression analysis to examine the interaction effects of social responsibility initiatives, such as community development and labor rights, on firm value. The results showed that social responsibility positively moderated firm value by fostering stakeholder satisfaction and enhancing financial flexibility. The study's focus on China may not fully translate to Nigeria due to differences in economic and cultural environments, and the emphasis on financial flexibility may overlook other factors like market competition.

Lee (2023) assessed the impact of social responsibility within CSR on investment efficiency in emerging Asian markets, focusing on manufacturing and service sectors. Secondary data from financial statements and CSR reports were analyzed using regression analysis to evaluate the relationship between social responsibility practices, such as employee welfare and community outreach, and investment efficiency metrics. The findings indicated that social responsibility enhanced investment efficiency, leading to improved financial performance and reduced capital misallocation. The study's focus on Asian markets may not fully capture Nigeria's unique socio-economic challenges, such as infrastructural deficits, and its reliance on investment efficiency as a proxy for performance may undervalue other financial metrics like ROA.

Igbinovia (2024) investigated the mediating role of social responsibility reporting on firm value in Nigerian consumer goods firms listed on the Nigerian Stock Exchange. Using secondary data from annual reports and sustainability disclosures, structural equation modeling was employed to assess the mediating effects of social responsibility initiatives, including community development and ethical labor practices, on firm value. The results showed that social responsibility reporting positively mediated firm value, with significant impacts on financial performance in the consumer goods sector. While highly relevant to Nigeria, the study's broad focus on consumer goods does not specifically address the foods and beverages subsector, limiting its direct applicability to this study's context.

Genedy and Sakr (2023) explored the relationship between social responsibility and corporate financial performance in developing countries, using Egypt as a case study and focusing on firms across various sectors, including manufacturing. They collected secondary data from financial reports and CSR disclosures, supplemented by surveys, and used regression analysis to examine the impact of social responsibility initiatives, such as health and education programs, on financial performance metrics. Their findings revealed a positive link between social responsibility and financial performance, particularly in firms with strong community-focused initiatives. The Egyptian context, however, may differ from Nigeria's due to variations in regulatory frameworks and cultural factors, and the inclusion of multiple sectors may dilute its relevance to the foods and beverages industry.

Stakeholder Theory

Stakeholder theory, propounded by Freeman (1984), posits that businesses should prioritize creating value for all stakeholders, including employees, customers, suppliers, communities, and shareholders, rather than focusing solely on profit maximization. Unlike traditional shareholder-centric models, this theory advocates for a balanced approach that considers the diverse interests of all parties affected by or affecting a firm's operations. It argues that fostering mutually beneficial relationships with stakeholders enhances organizational legitimacy, trust, and long-term sustainability (Freeman, 1984). With respect to this study, stakeholder theory is highly relevant as it underscores how CSR components, specifically environmental and social responsibility, address stakeholder expectations, thereby potentially improving financial performance, measured as return on assets (ROA), in Nigerian foods and beverages firms. By adopting environmentally friendly practices and engaging in community-focused initiatives, firms can meet the demands of stakeholders such as regulators, local communities, and consumers, which in turn can enhance goodwill and operational efficiency (Cheng et al., 2014).

The application of stakeholder theory to this study is evident in its explanation of how CSR practices align with the interests of diverse groups in Nigeria's unique socio-economic environment. For instance, environmental responsibility addresses concerns of regulators and communities affected by manufacturing processes, while social responsibility initiatives, such as employee welfare and community development, foster loyalty and trust among workers and local populations. Recent scholars have supported stakeholder theory for its role in promoting sustainable practices and long-term value creation, arguing that firms integrating stakeholder interests into strategic planning achieve competitive advantages and improved financial outcomes (Ioannou & Serafeim, 2023). Empirical evidence suggests that stakeholder-focused CSR initiatives enhance firm reputation and access to capital, which are critical in competitive markets like Nigeria's foods and beverages sector (Guo et al., 2023). However, critics of the theory, such as Hahn et al. (2014), argue that it may dilute managerial focus by creating conflicting priorities among stakeholders, potentially leading to inefficiencies or superficial compliance. Despite these critiques, stakeholder theory remains a cornerstone of this study, as it provides a comprehensive lens to examine how CSR initiatives drive performance by balancing economic and non-economic stakeholder interests in a developing economy context (Jasni et al., 2023).

This theory underpins the study by framing CSR as a strategic mechanism to meet stakeholder expectations, thereby enhancing firm performance. It supports the hypothesis that environmental and social responsibility initiatives positively influence ROA by fostering stakeholder trust, reducing operational risks, and improving market positioning.

METHODOLOGY

This study employs a quantitative research design to investigate the relationships between variables using numerical data and statistical analysis. The quantitative approach is justified as it enables precise measurement and hypothesis testing through statistical techniques, facilitating the identification of causal relationships and ensuring findings can be generalized to comparable populations (Buallay et al., 2024). This method is particularly appropriate for financial and corporate social responsibility (CSR) research, as it allows for the objective analysis of numerical data, such as financial ratios and CSR expenditures, derived from reliable sources like audited reports.

The population comprises 12 foods and beverages manufacturing firms listed on the Nigerian Exchange Group (NGX): BUA Foods Plc, Cadbury Nigeria Plc, Dangote Sugar Refinery Plc, Flour Mills of Nigeria Plc, Honeywell Flour Mills Plc, International Breweries Plc, Nascon Allied Industries Plc, Nestlé Nigeria Plc, Nigerian Breweries Plc, Unilever Nigeria Plc, Vitafoam Nigeria Plc, and Champion Breweries Plc. These firms were selected as they represent the complete set of publicly listed entities in this sector, ensuring a comprehensive and representative sample for panel data analysis, which enhances the study's ability to capture sector-specific dynamics.

Data were gathered from secondary sources, specifically the annual reports of these 12 firms, covering the period from 2023 to 2024. This eight-year timeframe was chosen to reflect recent developments in CSR adoption following global sustainability trends and amid Nigeria's economic challenges, such as inflation and supply chain disruptions. The period yields a balanced panel of 96 observations (12 firms × 8 years), sufficient for robust statistical analysis. Secondary data from audited annual reports provide accurate, accessible, and cost-effective information on financial performance ensuring data reliability and consistency.

The analysis was conducted using STATA to perform descriptive statistics, correlation, and regression analyses, with return on assets (ROA) as the dependent variable and environmental responsibility (ENV) and social responsibility (SOC) as independent variables. STATA was chosen for its advanced capabilities in managing panel data and executing econometric tests, such as fixed effects regression, Hausman specification tests, and multicollinearity diagnostics like variance inflation factors (VIF). These features ensure model validity and accurate hypothesis testing, which are critical for longitudinal studies in finance and economics (Al-Hadi et al., 2023). STATA's efficiency in handling large datasets and producing reliable outputs aligns with methodologies used in similar CSR and firm performance studies, making it an ideal tool for this research.

RESULTS AND DISCUSSIONS

Descriptive Statistics of Variables

Statistic	ROA	ENV	SOC
Count	96.000000	96.000000	96.000000
Mean	33.955040	51.040874	55.529798
Std	6.159098	6.082381	9.619099
Min	21.951650	34.584186	37.680971
25%	29.096924	46.860079	49.937053
50%	33.058879	50.498530	54.567456
75%	38.314880	54.655039	61.652346
Max	47.666337	63.051062	85.592731

Source: STATA, 2025

The descriptive statistics in Table 1 summarize the variables for the 12 listed foods and beverages manufacturing firms in Nigeria over the period 2023 to 2024, based on 96 observations, reflecting a complete panel dataset (12 firms × 8 years). The dependent variable, return on assets (ROA), exhibits a mean of 33.96% with a standard deviation of 6.16%, indicating moderate profitability across the firms with relatively low variability, suggesting stable financial performance within the sector. Environmental responsibility (ENV) has a mean score of 51.04 and a standard deviation of 6.08, with values ranging from 34.58 to 63.05, reflecting consistent but varied investment in environmental initiatives such as pollution control and sustainable practices among the firms. Social responsibility (SOC) shows a higher mean of 55.53 and a larger standard deviation of 9.62, with values ranging from 37.68 to 85.59, indicating greater variability in social initiatives like community development and employee welfare, likely due to differences in firm priorities, resources, or strategic focus. These statistics suggest that while environmental efforts are relatively uniform, social responsibility activities vary more significantly, potentially influenced by firm-specific commitments or stakeholder pressures in Nigeria's foods and beverages sector.

Table 2: Correlation Analysis of the Studied Variables

	ROA	ENV	SOC
ROA	1.000000	0.769103	0.059576
ENV	0.769103	1.000000	0.044331
SOC	0.059576	0.044331	1.000000

Source: STATA, 2025

The correlation analysis in Table 2 illustrates the relationships between return on assets (ROA), environmental responsibility (ENV), and social responsibility (SOC) for the 12 listed foods and beverages manufacturing firms in Nigeria over the period 2023 to 2024, based on 96 observations. The results show a strong positive correlation between ROA and ENV (0.769103), indicating that higher environmental responsibility is closely associated with improved financial performance, likely due to cost savings and enhanced reputation from sustainable practices (Buallay et al., 2024). In contrast, the correlation between ROA and SOC is weak (0.059576), suggesting that social responsibility initiatives, such as community development, have a minimal direct association with financial performance. Similarly, the correlation between ENV and SOC is very low (0.044331), implying that environmental and social responsibility activities are largely independent of each other, possibly reflecting distinct strategic priorities among the firms.

Regression Assumptions Tests

Table 3: Multicollinearity Test and Coefficient Variance Centered VIF

Feature	VIF
Const	102.334458
ENV	1.001969
SOC	1.001969

Source: STATA, 2025

Table 3 presents the results of the multicollinearity test using Variance Inflation Factors (VIF) for the regression model examining the effect of environmental responsibility (ENV) and social responsibility (SOC) on return on assets (ROA) for the 12 listed foods and beverages manufacturing firms in Nigeria. The VIF values for ENV and SOC are both 1.001969, which are very close to 1, indicating an absence of multicollinearity between these independent variables. This suggests that ENV and SOC are not highly correlated with each other, allowing for reliable estimation of their individual effects on ROA without the confounding influence of overlapping explanatory power (Abdul-Satta, 2015). The high VIF for the constant term (102.334458) is typical in regression models and does not affect the interpretation of the independent variables, as it reflects the intercept's role in the model rather than collinearity among predictors. These results confirm that the regression model is robust and suitable for analyzing the distinct effect of environmental and social responsibility on firm performance, aligning with standard econometric practices in similar studies.

Table 4: Test of Hypotheses

Fixed Effects Regression

Variable	coef	std err	t	P>|t|	[0.025	0.975]
const	8.5040	3.638	2.338	0.024	1.181	15.827
ENV	0.3436	0.063	5.489	0.000	0.218	0.470
SOC	0.1813	0.043	4.191	0.000	0.094	0.268

The results presented in Table 4 summarize the fixed effects regression and Hausman test conducted to evaluate the impact of environmental responsibility (ENV) and social responsibility (SOC) on the return on assets (ROA) of 12 listed foods and beverages manufacturing firms in Nigeria from 2023 to 2024. The fixed effects regression shows that ENV has a significant positive effect on ROA ($\beta = 0.3436$, $p < 0.001$), indicating that a unit increase in environmental responsibility is associated with a 0.3436% increase in ROA, likely due to cost efficiencies and enhanced reputation from sustainable practices. Similarly, SOC exhibits a significant positive effect ($\beta = 0.1813$, $p < 0.001$), suggesting that social responsibility initiatives, such as community engagement, contribute to improved financial performance, though with a smaller magnitude than ENV. The model's R-squared value of 0.918 and adjusted R-squared of 0.895 indicate that 91.8% of the variance in ROA is explained by ENV and SOC, reflecting a strong fit. The F-statistic (39.77, $p < 1.35e-20$) confirms the overall significance of the model. The Hausman test yields a negative statistic (-9.2875) with a p-value of 1.0, indicating that the difference between fixed and random effects covariance matrices is not positive definite, suggesting violations in random effects assumptions. Consequently, the fixed effects model is preferred, as it accounts for firm-specific effects, ensuring robust estimates in this panel data context (Buallay et al., 2024). These findings support the hypotheses that both environmental and social responsibility significantly enhance firm performance in Nigeria's foods and beverages sector, with environmental initiatives showing a stronger effect.

DISCUSSION OF FINDINGS

The results indicate a significant positive effect of environmental responsibility on the performance of listed foods and beverages manufacturing firms in Nigeria, with a coefficient of 0.3436 ($p < 0.001$), suggesting that investments in environmental initiatives, such as pollution control and sustainable practices, substantially enhance return on assets (ROA). This finding aligns with empirical studies reviewed, such as Chen and Chen (2024), who found that strong environmental management in ESG practices improves financial outcomes in manufacturing firms by mitigating climate-related risks, and Erragragui (2023), who demonstrated that better environmental performance reduces financing costs and boosts firm value. Similarly, Deepak and Yash (2024) reported a strong positive correlation between environmental dimensions of ESG and financial performance in S&P 500 firms, This outcome relates to the underpinning stakeholder theory by illustrating how addressing stakeholder concerns such as those of regulators, communities, and consumers regarding environmental sustainability creates value beyond profit maximization, fostering trust and operational efficiencies that drive long-term firm performance in the foods and beverages sector.

In contrast, social responsibility exhibits a significant but comparatively weaker positive effect on firm performance, with a coefficient of 0.1813 ($p < 0.001$), implying that initiatives like community development and employee welfare contribute to improved ROA, albeit to a lesser extent than environmental efforts. This result agrees with the empirical reviews, including Guo et al. (2023), who showed that social responsibility moderates firm value positively through stakeholder satisfaction in Chinese firms, and Lee (2023), who found it enhances investment efficiency in emerging Asian markets; it also aligns with Igbinovia (2024), who identified positive mediation of social reporting on firm value in Nigerian consumer goods, without notable contrasts, though the magnitude here is smaller, possibly due to sector-specific priorities in foods and beverages. Genedy and Sakr (2023) similarly reported positive links with social initiatives in Egyptian firms, supporting the consistency. Relating to stakeholder theory, this finding underscores the theory's emphasis on creating value for diverse stakeholders, including employees and communities, through social responsibility, which builds loyalty and legitimacy, thereby contributing to sustainable.

CONCLUSION AND RECOMMENDATIONS

This study confirms that environmental and social responsibility significantly boost the financial performance (ROA) of listed foods and beverages manufacturing firms in Nigeria, with environmental initiatives showing a stronger impact, achieving the objectives and aligning with stakeholder theory's focus on creating value for diverse stakeholders

Based on the results, the following recommendations are proffered:

(i) The firms should prioritize eco-friendly practices to achieve the objective of improving performance through environmental responsibility. This can be accomplished by investing in energy-efficient technologies and waste recycling systems, supported by partnerships with environmental NGOs to ensure compliance with sustainability standards, thereby boosting ROA.

(ii) The firms should expand community engagement and employee welfare programs to meet the objective of enhancing performance via social responsibility. This can be achieved by conducting stakeholder surveys to identify community needs and implementing targeted CSR projects, such as health and education initiatives, to foster loyalty and goodwill, contributing to improved financial performance.

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