Impact of Corporate Social Responsibility (CSR) on the Financial Performance of Quoted Manufacturing Firms in Nigeria

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A b s t r a c t

This study investigates the impact of Corporate Social Responsibility (CSR) on the financial performance of manufacturing firms listed on the Nigerian Stock Exchange. Despite conflicting views in existing literature, this research explores whether CSR activities, specifically employee health and safety, community development, and research and development, influence financial metrics such as net profit margin (NPM), return on assets (ROA), and return on equity (ROE). The study spans a period from 2017 to 2023, leveraging correlation analysis to evaluate relationships between CSR expenditures and financial performance indicators. Findings indicate a significant positive effect of CSR on NPM and ROE, though no significant impact was observed on ROA. This suggests that while CSR enhances profitability and shareholder returns, its influence on asset efficiency is limited. The study emphasizes the necessity for Nigerian manufacturing firms to balance profit motives with CSR activities to achieve sustainable business success. Recommendations include enhancing community development initiatives, leveraging by-product innovation for cost management, and addressing environmental impacts through compensation and remediation efforts. These strategies are expected to foster a favorable operational climate, ensuring long-term sustainability and competitive advantage.

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Background to the Study

The issue of global warming and climate change as a result of migration of people from rural to urban cities has compelled corporate firms to take environmental policies seriously. The urban-rural migration of people as social beings has brought about both negative and positive impacts on our environment due to the concentration of industries and people in those cities (Duke and Kamkpang, 2013). Such negative effects on our environment include deforestation, desertification, and emission of waste matters, leading to pollution of our land, sea, and water. Corporate organizations are now faced with challenges in managing externalities and social conflicts like environmental pollution, security issues, non-employment of local communities where the firms are situated, and illegal land use. All the above conflicts are closely associated with stakeholders' interests. The stakeholders include shareholders, employees, investors, government, local communities, consumers, and non-governmental agencies who are now conscious of the extent firms respond to their corporate social responsibility (Freeman, 1995; Fontaine, Harman & Schmid, 2006).

The issue of government regulations, pressure groups, and green consumer pressure has reawakened corporate attention to the strategic and competitive role of environmental responsibility to corporate survival. Although this development is more pronounced in developed countries than in developing countries due to weak government regulations, lack of organized pressure groups, and consumer awareness to influence corporate behavior in developing nations (Oti, Efifong, and Tieseh, 2012). On the other hand, the positive impact on our environment due to the concentration of industries includes the production, distribution, and consumption of goods and services and management of waste products (Duke and Kamkpang, 2013).

However, globalization and the harmonization of accounting standards have made corporate bodies conscious of their international market, making appreciable efforts regarding sustainable business practices. In Nigeria, results of sampled industries show that a few companies are becoming environmentally or socially responsible (Bassey, Effiong, and Eto, 2013). However, some companies are not taking environmental and social activities seriously, not knowing that environmental reporting activity can enhance corporate reputation and consequently guarantee a competitive advantage. Nabanee and Ellili (2016) posit that through environmental reports, firms disclose voluntary information on their environmental, economic, and social impacts produced by their actions. By doing so, firms reduce information failure and enhance transparency on their positive or negative environmental performance. Porter and Van der Linde (1995) argue that if firms properly design environmental policies, it can lead to innovations that offset the cost of compliance. They further posit that innovation offset arises from the reduction of pollution due to improved efficiency of resource usage by firms. This is often referred to as win-win opportunities in Porter's business strategy. They argue that pollution caused by firms' actions is a mark of poor management, inefficient use of resources, and backwardness in business.

In view of the foregoing analysis, this study is anchored on the effect of corporate social responsibility (CSR) on the financial performance of manufacturing firms in Nigeria. The proxies for both independent and dependent variables have been chosen to address the stakeholders. Thus, the independent variables include Community Development Cost (CDC), Research and Development Cost (RDC), and Employee Health and Safety Cost (EHSC). Net Profit Margin (NPM), Return on Equity (ROE), and Return on Asset (ROA) for firm financial performance. These variables are chosen because they are readily available, and prior researchers have adopted them as proxies for financial performance. The research will contribute to the existing literature by examining this issue within the context of manufacturing firms or sectors to ascertain how CSR affects financial performance.

In light of the above issues, the study examines the effect of CSR on financial performance on manufacturing firms in Nigeria. Despite the recognized benefits of cooperate social responsibility. The adoption and implementation of CSR, manufacturing firms are not without some challenges.

Sustainability in business requires firms to consider both profit and CSR activities. Conflicting findings on the relationship between CSR and firm performance exist, with three main schools of thought. The neo-classical view argues that CSR imposes additional costs on firms, potentially reducing financial performance (Walley and Whitehead, 1994; Palmer et al., 1995). The positive view suggests that CSR enhances financial performance through improved reputation and stakeholder relations (Spicer, 1978; Konar and Cohen, 2001). The mixed results view indicates an inverse U-shaped relationship, with short-term negative but long-term positive effects (Codeiro and Sakis, 1997; Wagner, 2001).

Ignoring CSR might lead to reduced customer patronage, community crises, and global market competitiveness. Conversely, engaging in CSR provides long-term benefits and ensures business sustainability. Dimowo (2010) emphasizes the need for a balance between profit objectives and CSR to prevent social harm and environmental degradation. In Nigeria's Niger-Delta region, issues like resource depletion and unemployment underscore the importance of CSR for sustainable development.

This study examines how CSR activities (employee health and safety, community development, and research and development) impact the financial performance (net profit margin, return on assets, return on equity) of companies manufacturing on the Nigerian Stock Exchange.
The main objective of this research is to examine the effect of CSR on financial performance of manufacturing firms: Specifically, the study tends to:
1. Assess the extent to which CSR affects Net Profit Margin of manufacturing firms in Nigeria.
2. Ascertain the effect of CSR on Return on Equity of manufacturing companies in Nigeria.
3. Determine the effect of CSR on Return on Assets of manufacturing in Nigeria.

Based on the specific objectives, the following research questions were raised:
1. How does CSR affect Net Profit Margin of manufacturing firms in Nigeria?
2. What is the effect of CSR on Return on Equity of manufacturing firms in Nigeria?
3. What is the effect of CSR on Return on Assets of manufacturing firms in Nigeria?

In order to realize the objectives of this study, the following null hypotheses were formulated:

H01: CSR does not significantly affect the Net Profit Margin of manufacturing firms in Nigeria

H02: CSR does not have any significant effect on Return on Equity of manufacturing firms in Nigeria.

H03: The effect of CSR on Return on Assets of manufacturing firms in Nigeria is not significant.

This study holds considerable significance for multiple stakeholders such as:

Firms: It will provide empirical evidence on the importance of corporate social responsibility (CSR) for Nigerian firms. The study will help firms understand the impact of CSR on corporate financial performance, guiding them in adhering to relevant CSR standards.

Government Regulatory Bodies: The findings will encourage regulatory bodies to standardize CSR reporting in Nigeria, addressing the lack of specific CSR standards by the Financial Reporting Council of Nigeria.

Local Communities and Stakeholders: The research will educate local communities and other stakeholders about the expectations of socially responsible firms, promoting accountability.

Researchers/Educational Institutions: The study will interest students, scholars, and academics, contributing to the literature on CSR and its effects on financial performance.

General Knowledge: The study will provide a foundation for future research in CSR and its implications.

Geographical Scope
This study is confined to manufacturing firms operating in Nigeria.
This research covers a period of seven years from 2017 to 2023. The study focuses on this period due to the adoption of International Financial Reporting Standards in Nigeria. It encompasses five (5) manufacturing firms. The proxies for CSR are community development costs, employees' health and safety costs, and research and development costs. The proxies for firm financial performance are net profit margin, return on assets, and return on equity.

The researcher faced difficulties in sourcing data due to the paucity of research on the CSR performance of listed manufacturing firms in Nigeria. Despite these challenges, the researcher successfully sourced data with the assistance of friends, the internet, and staff of the Nigerian Stock Exchange, enabling the successful addressing of the research questions.

Conceptualization of Terms

The conceptual framework provides a comprehensive understanding of various costs and investments within an organization, focusing on corporate social responsibility (CSR), community development costs, research and development (R&D), and employee health and safety costs. These concepts are vital for understanding how organizations allocate resources to achieve growth and sustainability.

Corporate entities operate within a framework of accountability and responsibility to their stakeholders, including shareholders, employees, customers, and the community at large. The primary goal is to maximize shareholder value while maintaining ethical standards and contributing positively to society. This balance is achieved through strategic planning, efficient resource allocation, and compliance with regulatory requirements (Smith & Rönnegard, 2022). Corporate Social Responsibility (CSR) is a business model that helps a company be socially accountable to itself, its stakeholders, and the public. By practicing CSR, companies can be conscious of the kind of impact they are having on all aspects of society, including economic, social, and environmental (Carroll, 2021). CSR involves going beyond legal obligations to manage the impact the company has on the environment and society. Activities include sustainable practices, philanthropy, ethical labor practices, and volunteering (Aguinis & Glavas, 2019).

Community Development Costs (CDC) refer to the investments made by organizations to enhance the quality of life in the communities where they operate. These costs are incurred through various initiatives such as building infrastructure, supporting education, healthcare, and local businesses (Husted & de Jesus Salazar, 2021). Companies engage in community development to foster goodwill, ensure a stable operating environment, and create a positive brand image. For instance, a company might build schools, provide scholarships, or support local healthcare facilities (Porter & Kramer, 2019).

Research and Development Cost (RDC) involves expenses related to the innovation and improvement of products and services. These costs include salaries of R&D personnel, costs of materials and equipment, and expenses for external research collaborations (Hall & Rosenberg, 2020). Investing in R&D is crucial for companies to remain competitive, develop new technologies, and improve existing products. Effective R&D can lead to significant advancements and cost savings over time, fostering long-term growth and market leadership (Cohen et al., 2021).

R&D investment plays a pivotal role in driving organizational growth by fostering innovation, improving product quality, and enhancing operational efficiencies. Companies that invest heavily in R&D can develop cutting-edge technologies and solutions that provide a competitive edge. This investment is not just about developing new products but also about improving processes and finding cost-effective solutions to production challenges (Pisano & Shih, 2019). The relevance of R&D is evident in industries such as pharmaceuticals, technology, and manufacturing, where continuous improvement and innovation are critical for success (Griliches, 2020).

There is a strong correlation between R&D investment and firm performance. Companies that allocate significant resources to R&D often experience higher growth rates, increased market share, and improved profitability (Belderbos et al., 2021). This is because R&D leads to the development of unique products and services that can meet changing consumer demands and adapt to market trends. Additionally, R&D-driven companies are better positioned to respond to competitive pressures and technological disruptions (Cohen & Klepper, 2020).

Employee Health & Safety Costs (EHSC) encompass the expenses related to ensuring a safe and healthy working environment for employees. These costs include investments in safety equipment, training programs, health insurance, and wellness initiatives (Katz & Green, 2021). Prioritizing employee health and safety is essential for reducing workplace injuries, enhancing employee satisfaction, and maintaining productivity. Companies with strong health and safety records often experience lower turnover rates and higher employee morale (Zohar, 2019).

The justification for Corporate Social Responsibility lies in its ability to build a positive reputation, attract and retain talent, and foster customer loyalty. Engaging in CSR activities can differentiate a company from its competitors and create a loyal customer base that values ethical practices (Freeman & McVea, 2020). Additionally, CSR can mitigate risks associated with regulatory compliance and environmental sustainability. In the long term, CSR initiatives can lead to cost savings, enhanced brand equity, and sustainable business practices (Elkington, 2020). Firm financial performance shows the extent to which a firm's financial health is measured over a period. It encompasses financial actions taken to generate higher sales, profitability, and business worth for shareholders by managing current and non-current assets, financing, equity, revenues, and expenses. The main purpose is to provide comprehensive information to shareholders and stakeholders to aid in decision-making. It can be used to evaluate similar companies within the same industry or to compare different industries in aggregation (Naz, Ijaz, & Naqvi, 2016).

Financial performance can be assessed using various mathematical measures. The Financial Dictionary (2012) describes financial performance as evaluating how well a company uses its resources to make a profit, with common measures including operating income, Earnings Before Interest and Taxes (EBIT), and Net Asset Value. According to

Capon et al. (1996), measures of financial performance vary significantly, differing on dimensions such as absolute measures (e.g., sales, profits) versus return-based measures (e.g., profit/sales, profit/capital), internal versus external measures, and more. The study adopts specific proxies for firm financial performance, detailed below.

Net Profit Margin (NPM) measures the proportion of naira sales remaining after deducting all expenses. It is calculated using the formula:

$$\text{Net Profit Margin} = \left(\frac{\text{Net Profit Before Interest and Taxes}}{\text{Net Sales}} \right) \times 100$$

This measure has been adopted by researchers such as Aondoakaa (2015), Padjadjaran University of Indonesia (2016), and Jaggi & Freedman (1992) to evaluate firm performance.

Return on Assets (ROA) is an accounting ratio that shows the percentage of profit a firm earns in relation to its overall resources. It is defined as Net Income divided by Total Assets, where Net Income refers to profit after tax. Dess & Limpkin (2003) describe ROA as the amount of profit generated compared to the company's assets, highlighting its efficiency in asset utilization to generate earnings. Jaggi & Freedman (1992) consider ROA a precise measure for financial performance related to environmental management, reflecting the firm's asset size. Researchers such as Fitriani (2013), Ifurueze, Lyndon & Bingilar (2013), and Hiroki & Keisuke (2010) have also used ROA to measure financial performance. The formula is:

$$\text{ROA} = \left(\frac{\text{Net Profit After Tax}}{\text{Total Assets}} \right) \times 100$$

Return on Equity (ROE) measures how shareholders fare during the year, representing profit per naira invested in equity. Angelia & Furyanjingsih (2015) and Ifurueze, Lyndon & Bingiler (2013) note that ROE is the bottom-line measure of performance, reflecting management's ability to generate income from available equity. Helfeit (1991) describes ROE as return on net worth, the most common ratio for measuring owner investment returns. Researchers like Hiroki & Keisuke (2010), Elsayed & Palin (2005), and Vinayagamoorth, Seham, & Kasilingam (2015) have adopted ROE as a performance proxy. Wingard (2001) and Jaggi & Freedman (1992) argue that both ROA and ROE are crucial as they relate to owner or total firm investment. The formula is:

$$\text{ROE} = \left(\frac{\text{Net Profit After Tax}}{\text{Shareholders' Equity}} \right) \times 100$$

ROE is particularly useful for comparing firms within the same industry, indicating management's ability to generate income from equity. Generally, a ROE of 15-20% is considered good (Wikipedia, 2018). The Theoretical Review explores theories that provide a framework for understanding the impact of CSR on Financial Performance of manufacturing firms in Nigeria

Stakeholder Theory

The term "stakeholder" was first introduced by the Stanford Research Institute (SRI) in 1963. Freeman (1984), a professor at the University of Virginia, applied the stakeholder theory extensively in his seminal book "Strategic Management: A Stakeholder Approach". The stakeholder theory posits that a firm should create value for all its stakeholders, not just its shareholders. Freeman, Wicks, and Parmer (2004) expand this definition by identifying stakeholders as both internal and external parties who have a relationship with the organization and are affected by its decisions, policies, and operations.

Supporters of stakeholder theory argue that companies need the support of their stakeholders to survive and thrive. For instance, Gray, Owen, and Adams (1996), as well as Fen (2007), argue that a company's success largely depends on how well management can manage relationships with its stakeholders. Woodward, Edward, and Birkin (1996) emphasize that stakeholder theory should focus on how an organization manages its various stakeholders. The theory aligns with Ten (2007), who states that a company has the ability to affect not only the general public but also different stakeholders. Gray et al. (1996) stress that information is a critical medium for firms to manage stakeholders, gain their support, and divert opposition. Stakeholders include employees, managers, local communities, shareholders, customers, and competitors (Freeman, 1984; Fontaine, Harman & Schmid, 2006).

Researchers such as Aondoakaa (2015), Bassey, Effiok, and Eton (2013), Omodero and Ihendinihu (2016), and Ten (2007) have adopted this theory. In the context of the Niger Delta in Nigeria, the environmental problems caused by listed companies, particularly in the oil and gas sector, could be mitigated if these companies considered their stakeholders. Issues like the pollution of farmlands and seas, destruction of fish and other seafood, famine, and polluted water could be averted if these sectors included different stakeholders in their decision-making processes. The researcher opines that listed firms in Nigeria should integrate environmental reports into their annual accounts and reports. This integration would encourage corporate managers to address environmental issues that are crucial for non-shareholders and simultaneously minimize environmental costs. This approach aligns with the views of Roberts (1992) and Clarkson (1995), who advocate for the inclusion of stakeholder interests in corporate strategies to ensure long-term growth, maximization of returns, and minimization of environmental costs.

The empirical review examiners existing studies that have investigated the effect of CRS on financial performance of firms. Jindal and Kumar (2012) found that companies with superior cooperate social responsibility performance tend to have higher firm value, aligning with Oti et al. (2011), who observed that investments in employee health, safety, and community development enhance ROI in Nigerian firms. Clarkson et al. (2008) reported that firms with better CSR performance had higher ROA, reinforcing Ifurueze et al. (2013), who revealed that environmentally responsible firms in Nigeria's Oil and Gas sector improve their ROA.

Qiu et al. (2016) found a significant positive relationship between environmental disclosures and profitability measures such as ROCE, providing broader context to Makori and Jargongo (2013), who noted a significant negative relationship between environmental accounting and ROCE and EPS. Orlitzky et al. (2003) showed a positive relationship between CSR activities and financial performance, supporting Umobong and Agburuga (2018), who found that ROA and ROCE relate positively to employee management.

Hsu and Wang (2013) found that proactive environmental reporting correlates with higher market valuations, echoing Chauhan and Kalola (2014), who recommended tax credits for environmentally friendly organizations. Michelon and Parbonetti (2012) reported a positive relationship between sustainability reporting and NPM, complementing Chauhan and Kalola's findings. These studies highlight the importance of cooperate social responsibility in enhancing corporate performance and profitability.

Gap in literature
The empirical review in this area of study shows that some researchers have adopted a single variable for financial performance. Notable studies include those Jindal and Kumar (2012), Clarkson et al. (2008), Qiu et al. (2016), and Michelon and Parbonetti (2012). These researchers focused solely on one variable rather than incorporating two or more variables. The present study aims to address this gap by applying multiple variables to provide a more comprehensive analysis.

Methodology
The research design of this study is ex post facto. This is because the data already exist and no room for manipulation. The data were sourced from the annual reports and accounts of five (5) manufacturing firms in the Nigeria stock exchange from 2017 to 2023, The population of the study consists of environmentally friendly firms in Nigeria. The researchers adopted purposive sampling technique to select five (5) manufacturing and listed firms in Nigeria as sample size. In determining the sample size certain conditions are considered, thus:
  1) The firm is listed on the Nigerian Stock Exchange,
  2) Data owned by the firm is complete and in accordance with the variables under study and
  3) The firm is socially responsible. The study adopted balanced regression technique for analyzing data (Suliyanto 2005).

Table 1: Selected and listed Manufacturing Firms

S/N	Goods Manufactured	Manufacturing Firms	Number
1	Industrial Goods	Cutix Nig Plc First Aluminu Nig Plc Lafarge African Plc Cap Plc Meyer Plc	5

Sources: Nigerian stock exchange (2024)

Operational Measurement of Variables

Two sets of variables were used in this study, the dependent and independent variables. The summary of the variables and their components are shown in table 2 and table 3.

Dependent variables.

The dependent variables are presented in table 2

Table 2: Dependent Variables and Components

S/n	Description of variables	Variable type	Measurement of proxy	Code	Expected Sign
1	Financial performance	Dependent	Net profit margin is net profit before interest and tax/net sales x 100 / 1	NPM	+
2	Financial performance	Dependent	Return on Equity is net profit after tax / shareholders Equity * 100 / 1	ROE	+
3	Financial performance	Dependent	Return on Asset is Net profit after tax / Total sales x 100 / 1	ROA	+

Source: Researcher's computation.

Independent Variables

This is the second set of the variables used in this study.
(Research and Development Cost (RDC), Community Development Cost (CDC) and Employee Health & Safety Cost (EHSC) as seen in table 3.

Table 3: Independent Variables and Components

S/n	Description of variables	Variable type	Measurement of proxy	Code	Expected Sign
1	Environmental costs	Independent	Research and development costs is Total cost of research/studies and improvement on products	RDC	+
2	" " "		Community development cost is Total cost spent on devolvement of local communities such as roads, schools, health care facility etc.	CDC	+
3	" " "		Employee health and safety cost is Cost incurred on staff training, welfare and medicals	EHSC	+

Source: Researcher's computation.

Model specification

The following represent model for this study;

Y = f (RDC, CDC, EHSC)   (1)

Where Y represents the dependent variables (Net profit margin, & Return on assets)
While RDC= Research and development cost,
CDC = Community development cost and
EHSC= Employee health & safety cost) represent independent variables.

The functional model is given below:
NPM = f (RDC, CDC,EHSC)   (2)
ROA = f (RDC, CDC,EHSC)   (3)
ROE = f (RDC, CDC,EHSC)   (4)

Where scholastic models are as follows:
$NPM_{it} = B_o + B_1 RDC_{it} + B_2 CDC_{it} + B_3 EHSC_{it}$ ------------+ e_{it} (5)
$ROA_{it} = B_o + B_1 RDC_{it} + B_2 CDC_{it} + B_3 EHSC_{it}$ ------------+ e_{it} (6)
$ROE_{it} = B_o + B_1 RDC_{it} + B_2 CDC_{it} + B_3 EHSC_{it}$ ------------+ e_{it} (7)

Where
NPM = Net profit margin
ROA = Return on assets
ROE = Return on Equity
RDC= Research & development cost
CDC = Community development cost
EHSC= Employee health & safety cost
B_0 = The intercept of the regression
B_1. B_2 and B_3 = coefficient of the regression
t = time period of data
i= cross section of listed firms
e = error term capturing explanatory variables not included in the models.
The independent data were logged because the data size is bigger than the dependable variables, thus:

$NPM_{it} = B_0 + B_i log RDC_{it} + B_2 log CDC_{it} + B_3 log EHSC_{it}$…………………………$e_{it}$ (8)
$ROA = B_0 + B_i log RDC_{it} + B_2 log CDC_{it} + B_3 log EHSC_{it}$…………………………$e_{it}$ (9)
$ROE = B_0 + B_i log RDC_{it} + B_2 log CDC_{it} + B_3 log EHSC_{it}$…………………………$e_{it}$ (10)

Decision rule:
If p-value IS less or equal to 0.05 , we reject null hypothesis and if p-value is greater, we accept the alternative hypothesis.

Data Analysis and Results

Table 4: Descriptive Statistic of CSR and Net Profit Margin Series (NPM)

	NPM	LOGRDC	LOGCDC	LOGEHSC
Mean	8.065314	3.974009	3.868565	4.088665
Median	5.700000	3.974420	3.808886	4.122150
Maximum	42.23000	5.624005	5.972271	5.062462
Minimum	0.090000	0.602060	0.390494	3.002598
Std. Dev.	7.258242	0.685449	0.655727	0.545933
Skewness	1.638913	-0.593334	-0.339895	-0.247688
Kurtosis	5.937568	5.483937	6.751217	2.030011
Jarque-Bera	141.2647	55.25713	105.9752	8.649931
Probability	0.000000	0.000000	0.000000	0.013234
Sum	1411.430	695.4516	676.9989	715.5164
Sum Sq. Dev.	9166.680	81.75228	74.81605	51.85941
Observations	**5**	**5**	**5**	**5**

Source: Computed with data extracted from Appendix 1 using E-view 9.0 software.

Table 4 shows that Research and Development (R&D) costs do not exhibit normal behavior, as indicated by the Jarque-Bera statistic's probability level being less than 5%. The data variability is considerable, ranging from a minimum of 0.602 to a maximum of 5.624. However, the data spread is even because the median value (3.974) is very close to the mean (4.065), suggesting that the R&D costs of the companies studied tend towards the maximum value. Community Development Cost (CDC) has the highest level of variability among the independent variables, ranging from a minimum of 0.390 to a maximum of 5.97. This data does not meet the normality criteria, as the Jarque-Bera statistic is below the 5% probability threshold. Despite this, the data is evenly distributed, with the median (3.808) close to the mean, indicating that the combined CDC of all companies studied trends towards the maximum value.

The Employee Health and Safety Cost (EHSC) exhibits less variability compared to the other two independent variables, with values ranging from 3.002 to 5.062. This data also does not follow a normal distribution, as the Jarque-Bera statistic exceeds 5%. The data is slightly skewed towards the maximum value, as the median (4.122) is close to the mean (4.088). The Net Profit Margin (NPM) displays significant variability, ranging from a minimum of 0.090 to a maximum of 42.230. This variable also does not conform to a normal distribution, given that the Jarque-Bera statistic is below 5%. The data tends towards the maximum value, as indicated by the median (5.700) being close to the mean (8.065). In summary, some variables are skewed towards either the minimum or maximum values, indicating that these variables do not exhibit consistent behavior or patterns of progression.

Correlation Analysis of CSR and Net Profit Margin (NPM) Series

Correlation analysis is conducted in table 5 in order to ascertain the relationship between the Net Profit Margin and the environmental cost variables.

Table 5: Correlation Analysis of CSR and Net Profit Margin Series (NPM)

	NPM	LOGRDC	LOGCDC	LOGEHSC
NPM	1.000000	0.312130	0.178185	0.230251
LOGRDC	0.312130	1.000000	0.298291	0.378216
LOGCDC	0.178185	0.298291	1.000000	0.422592
LOGEHSC	0.230251	0.378216	0.422592	1.000000

Source: Computed with data extracted from Appendix 1 using E-view 9.0 software.

The results of the correlation analysis in Table 5 indicate the following positive correlations:
1. Net Profit Margin (NPM) has a positive correlation with log Research and Development Cost (log RDC) at 0.312.
2. NPM is also positively correlated with log Community Development Cost (log CDC) at 0.178 and with log Employee Health and Safety Cost (log EHSC) at 0.230.
3. Log RDC is positively related to log CDC with a correlation of 0.298 and to log EHSC with a correlation of 0.378.
4. Lastly, log CDC has a positive correlation with log EHSC at 0.423.

Table 6: Descriptive Statistic of Returns on Equity (ROE) and CSR Series.

	ROE	LOGRDC	LOGCDC	LOGEHSC
Mean	281.1190	3.974009	3.868565	4.088665
Median	12.52000	3.974420	3.808886	4.122150
Maximum	43005.00	5.624005	5.972271	5.062462
Minimum	0.160000	0.602060	0.390494	3.002598
Std. Dev.	3255.243	0.685449	0.655727	0.545933
Skewness	13.03265	-0.593334	-0.339895	-0.247688
Kurtosis	171.5119	5.483937	6.751217	2.030011
Jarque-Bera	212009.9	55.25713	105.9752	8.649931
Probability	0.000000	0.000000	0.000000	0.013234
Sum	49195.82	695.4516	676.9989	715.5164
Sum Sq. Dev.	1.84E+09	81.75228	74.81605	51.85941
Observations	**5**	**5**	**5**	**5**

Source: Computed with data extracted from Appendix 1 using E-view 9.0 software.

Table 6 shows that Research and Development (R&D) costs do not exhibit normal behavior, as indicated by the Jarque-Bera statistic's probability level being less than 5%. The data variability is high, ranging from a minimum of 0.602 to a maximum of 5.624. Despite this, the data spread is even, as the median value (3.974) is very close to the mean

(4.065), suggesting that the R&D costs of the companies studied tend towards the maximum value. Additionally, R&D costs show higher variability than Community Development Cost (CDC), which ranges from a minimum of 0.390 to a maximum of 5.97. The CDC data also fails to meet the normality criteria due to the Jarque-Bera statistic being below the 5% probability threshold.

The Employee Health and Safety Cost (EHSC) exhibits less variability than the other two independent variables, ranging from 3.002 to 5.062. This data also does not follow a normal distribution, as indicated by the Jarque-Bera probability of 0.03, which is less than 5%. The data is slightly skewed towards the maximum value, as the median (4.122) is above the mean (4.088). This lack of normality might be due to the combination of variables from different companies, whose performance and data consistency may vary. The Returns on Equity (ROE) shows significant variability, ranging from a minimum of 0.160 to a maximum of 43005.0. This variable also does not conform to a normal distribution, given that the Jarque-Bera probability is less than 5%. The data is skewed towards the minimum value, as the median (12.7520) is much lower than the mean (281.120).

In summary, some variables are skewed towards either the minimum or maximum values, indicating that these variables do not exhibit consistent behavior or patterns of progression.

Correlation Analysis of CSR Variables and ROE
Correlation analysis is presented in table 7 to determine the strength of the relationship between return on equity and environmental cost series.

Table 7: Correlation Analysis of Returns on Equity (ROE) and Environmental Cost Series

	ROE	LOGRDC	LOGCDC	LOGEHSC
ROE	1.000000	-0.078848	0.191557	0.010153
LOGRDC	-0.078848	1.000000	0.298291	0.378216
LOGCDC	0.191557	0.298291	1.000000	0.422592
LOGEHSC	0.010153	0.378216	0.422592	1.000000

Source: Computed data from Appendix 1 using E-view 9.0 software.

The above table 7 depicts the outcome of the correlation Analysis of Returns on Equity and Environmental Cost Series. According to the results, there is negative correlation between Return on Equity (ROE) and log RDC (-0.079), the following variables are positively corrected (+), ROE and log CDC (0.192) and R0E and log EHSC. (0.010). Also, there is positive correlation between log RDC and log CDC (0.298) and between logRDC and log EHSC (0.378). Finally, log CDC is positively related to log EHSC (0.423).

Table 8: Descriptive Statistic of Returns on Assets (ROA) and CSR Series.

	ROA	LOGRDC	LOGCDC	LOGEHSC
Mean	8.718343	3.974009	3.868565	4.088665
Median	5.120000	3.974420	3.808886	4.122150
Maximum	53.96000	5.624005	5.972271	5.062462
Minimum	0.110000	0.602060	0.390494	3.002598
Std. Dev.	10.02997	0.685449	0.655727	0.545933
Skewness	2.425739	-0.593334	-0.339895	-0.247688
Kurtosis	9.525626	5.483937	6.751217	2.030011
Jarque-Bera	482.1298	55.25713	105.9752	8.649931
Probability	0.000000	0.000000	0.000000	0.013234
Sum	1525.710	695.4516	676.9989	715.5164
Sum Sq. Dev.	17504.46	81.75228	74.81605	51.85941
Observations	**5**	**5**	**5**	**5**

Source: Computed with data extracted from Appendix 1 using E-view 9.0 software.

Table 8 shows that Research and Development Cost (RDC) does not exhibit normal behavior, as the Jarque-Bera statistic's probability level is 0.0000, which is less than 0.05. The level of variability is high (0.6854), with values ranging from 0.6021 to a maximum of 5.240. However, the data spread is even, as the median value (3.9744) is very close to the mean value (3.9740), indicating that the RDC of the firms under study tends towards the maximum value. Community Development Cost (CDC) has less variability than RDC (0.6557), with values ranging from 0.3905 to a maximum of 5.9723. The Jarque-Bera statistic for CDC is also less than 5% (0.0000), indicating non-normal behavior. Despite this, the data spread is even, as the median (3.8089) is close to the mean value (3.8685), suggesting that the CDC of all the firms under study tends towards the maximum value.

Employee Health and Safety Cost (EHSC) does not meet normality criteria, as the Jarque-Bera statistic is less than 0.05 (0.013). However, the data is relatively even, with a median value (4.1221) close to the mean value (4.0886). The data ranges from a minimum of 3.0026 to a maximum of 5.0625, indicating a tendency towards the maximum value. Return on Assets (ROA) does not exhibit normal behavior, with a Jarque-Bera statistic of 0.0000, which is less than 0.05. ROA shows the highest variability (3255.243) compared to the predictor variables, with values ranging from a minimum of 0.1600 to a maximum of 43005.00. This indicates that the data tend towards the maximum value. In summary, the variables analyzed show high variability and do not exhibit normal behavior according to the Jarque-Bera statistic, but they tend towards their maximum values, with data spreads generally even.

Correlation Analysis of CSR Variables and Returns on Assets (ROA)
Correlation analysis is conducted to ascertain relationship between the ROA and environmental cost variables, while the summarized results are shown in table 9.

Table 9: Correlation Analysis of Returns on Assets and CSR Series

	ROA	LOGRDC	LOGCDC	LOGEHSC
ROA	1.000000	0.282893	0.008650	0.181833
LOGRDC	0.282893	1.000000	0.298291	0.378216
LOGCDC	0.008650	0.298291	1.000000	0.422592
LOGEHSC	0.181833	0.378216	0.422592	1.000000

Source: Computed with data extracted from Appendix 1 using E-view 9.0 software.

The result in table 9 showed that ROA has a positive relationship with log RDC, (0.283), log CDC (0.009) and log EHSC (0.182). Also, there is existence of positive correlation between log RDC and log CDC (0.298) and log EHSC (0.378), while log EHSC is positively related with log CDC (0.423).

Summary of Findings
The results showed that:
1. Cooperate social responsibility has significant effect on net profit margin of listed manufacturing firms in Nigeria.
2. Cooperate social responsibility has significant effect on return on equity of listed manufacturing firms in Nigeria.
3. Cooperate social responsibility has no significant effect on return on assets of listed manufacturing firms in Nigeria.

Conclusion
The detailed analysis on the effect of Coperate Social Responsibility on financial performance shows that the effect of CSR on firm financial performance is significant. This is evidenced by the independent variables impact on dependent variables (see Tables 5, 7 & 9). The reason for the result is not farfetched since some of the firms have realized the relevance of investment in CSR activities, such as balancing corporate power with corporate responsibilities, honoring stakeholders rights of information, ensuring sustainability and competitive advantage. By achieving the above benefits, will no doubt enhance profitability and add value to the firms.

Recommendations
The following suggestions are put forward based on the findings of the study.
1. The management of the listed manufacturing firms in Nigeria should intensify efforts in carrying out their social responsibilities especially in the area of community development, since it has linear relationship with the financial performance of the listed firms in Nigeria.
2. The listed manufacturing firms to expect significant impact of CSR on NPM should adopt a strategy of off-setting cost through sale of bye-product and waste via consistent innovation   by so doing the firms profitability is enhanced leading to better performance.
3. For the listed manufacturing firms in Nigeria to expect significant impact of them

cooperate social responsibility on their financial performance in Nigeria, they should endeavour to manage their environmental activities by remediating their environmental damages (compensation), this will give room for a favorable climate for the firms to ensure sustainability in business.

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Appendix 1

	2017	2018	2019	2020	2021	2022	2023
Cutix Nig PLC							
NPM (%)	4.60	7.85	9.27	6.07	6.70	7.00	8.70
EPS (Kobo)	15	17	24	0.11	0.22	29	50
ROE (%)	14.95	34.39	25.52	16.94	21.64	25.40	33.89
ROA (%)	13.54	22.46	17.75	7.58	10.07	11.05	15.52
NETWORTH (₦000)	509152	59755	69970	6437	8702	10139	12992
P/E RATIOS	0.09	0.08	0.05	14.18	8.18	0.07	0.04
R & D (₦000)	00	00	00	3400	6000	5000	7500
C D C (₦000)	0	0	00	8500	1200	9500	1528
EHSC. (₦000)	11060	12048	13445	1550	1800	2285	2885
First Aluminum Nig Plc							
NPM (%)	15.1	5.70	5.0	5.5	8.6	4.6	7.80
EPS (Kobo)	8.57	12.34	10.90	12.61	21.61	14.94	28.25
ROE (%)	3.5	3.6	2.9	3.80	3.8	2.60	3.70
ROA (%)	2.3	2.6	1.9	2.5	2.5	1.60	2.80
NETWORTH (₦000)	41214	57156	6385	9813	9813	9910	12935
P/E RATIOS	8.00	9.5	14.0	8.1	8.1	15.3	6.5
R & D (₦000)	1000	6720	6820	1130	1130	1490	1480
C D C (₦000)	10000	5000	3000	5000	5000	6000	7500
EHSC. (₦000)	99840	13997	1760	2912	29122	28762	32613
Lafarge African Plc							
	2012	2013	2014	2015	2016	2017	2018
NPM (%)	9.22	0.09	3.20	12	0.78	2.60	9.26
EPS (Kobo)	33	3.94	27.04	432.28	25.52	26.81	62.06
ROE (%)	0.92	3.11	4.20	13.91	10.97	10.44	50.41
ROA (%)	0.45	2.77	3.01	2.15	0.11	2.45	1.58
NETWORTH (₦000)	29769	4397	4462	14765	16610	1854	3740
P/E RATIOS	0.12	0.6	0.27	8.28	0.04	0.02	0.05
R & D (₦000)	12713	1182	7740	4500	4500	4500	00
C D C (₦000)	00	3650	1990	6991	1080	0	500
EHSC. (₦000)	3500	4427	4742	9741	8774	7038	3865
Cap Plc							
NPM (%)	6.13	8.46	6.30	5.54	2.68	4.40	2.04
EPS (Kobo)	15.0	1.23	1.16	1.02	0.47	0.84	0.46
ROE (%)	6.10	11.05	11.31	9.78	4.56	7.86	3.90
ROA (%)	2.00	6.74	6.47	6.01	2.50	3.69	1.67
NETWORTH (₦000)	31216	44116	42538	41436	40900	42272	6722
P/E RATIOS	159	28.50	22.24	25.10	30.85	24.52	22.39
R & D (₦000)	2500	1302	4500	34712	00	10173	00
C D C (₦000)	1060	7700	8700	1625	5000	5000	5000
EHSC. (₦000)	5706	4507	4871	5002	5942	5098	5217
Meyer Plc							
NPM (%)	14.9	14.4	13.5	12.6	28.06	28.29	15.3
EPS (Kobo)	42	51	27	13	97	142	70
ROE (%)	11.39	13.20	6.94	3.69	51.77	55.31	8.8
ROA (%)	7.16	7.40	2.23	1.63	13.93	13.93	10.46
NETWORTH (₦000)	98263	10234	10264	11233	7275	7644	2693
P/E RATIOS	3.21	10.43	17.30	32	3.88	2.881	4.64
R & D (₦000)	72120	12725	19687	2318	1013	2254	8420
C D C (₦000)	0	43500	50500	2041	7970	8100	9034
EHSC. (₦000)	16050	16485	16627	18452	1987	2065	9399

Appendix 2
Cross Section Random Effect Regression Results of the Effect of Cooperate Social Responsibility (CSR) on Net Profit Margin (NPM) Series

Dependent Variable: NPM
Method: Panel EGLS (Cross-section random effects)
Date: 07/30/24   Time: 21:03
Sample: 2017 2023
Periods included: 7
Cross-sections included: 5
Total panel (balanced) observations: 35
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.943911	4.741996	1.042580	0.0086
LOGRDC	0.478243	0.650927	0.734711	0.0335
LOGCDC	0.808728	0.614086	1.316961	0.0396
LOGEHSC	-0.466596	0.939269	-0.496765	0.0200

Effects Specification				
			S.D.	Rho
Cross-section random			5.884059	0.7019
Idiosyncratic random			3.834607	0.2981

Weighted Statistics			
R-squared	0.812652	Mean dependent var	1.928970
Adjusted R-squared	0.634670	S.D. dependent var	3.857324
S.E. of regression	3.866320	Sum squared resid	2556.182
F-statistic	0.730407	Durbin-Watson stat	1.662569
Prob(F-statistic)	0.535177		

Unweighted Statistics			
R-squared	0.640858	Mean dependent var	8.065314
Sum squared resid	8883.817	Durbin-Watson stat	0.478379

Cross Section Random Effect Regression Results of the Coperarate Social Responsibility (CSR) on Returns on Assets (ROA) Series

Dependent Variable: ROA
Method: Panel EGLS (Cross-section random effects)
Date: 07/30/24   Time: 22:25
Sample: 2017 2023
Periods included: 7
Cross-sections included: 5
Total panel (balanced) observations: 35
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.66950	7.131949	1.496015	0.4365
LOGRDC	1.155269	0.999009	1.156415	0.6491
LOGCDC	-2.027078	0.948401	-2.137365	0.5340
LOGEHSC	0.317873	1.436272	0.221318	0.5251

Effects Specification

			S.D.	Rho
Cross-section random			7.768846	0.6294
Idiosyncratic random			5.961653	0.3706

Weighted Statistics

R-squared	0.013796	Mean dependent var	2.428597
Adjusted R-squared	0.000190	S.D. dependent var	6.055209
S.E. of regression	6.003991	Sum squared resid	6164.192
F-statistic	1.993776	Durbin-Watson stat	1.242202
Prob(F-statistic)	0.116771		

Unweighted Statistics

R-squared	0.000190	Mean dependent var	8.718343
Sum squared resid	16949.21	Durbin-Watson stat	0.451771

Cross Section Fixed Effect Regression Results of the Effect of Environmental Costs on Returns on Equity (ROE) Series

Dependent Variable: ROE
Method: Panel Least Squares
Date: 07/30/24 Time: 22:12
Sample: 2017 2023
Periods included: 7
Cross-sections included: 5
Total panel (balanced) observations: 35

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3130.613	4122.848	0.759333	0.0489
LOGRDC	-1050.717	561.2988	-1.871938	0.0232
LOGCDC	1286.149	518.8807	2.478699	0.0143
LOGEHSC	-892.5867	819.2227	-1.089553	0.2777

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.895583	Mean dependent var	281.1190
Adjusted R-squared	0.792133	S.D. dependent var	3255.243
S.E. of regression	3176.435	Akaike info criterion	19.11055
Sum squared resid	1.48E+09	Schwarz criterion	19.61692
Log likelihood	-1644.173	Hannan-Quinn criter.	19.31595
F-statistic	1.323744	Durbin-Watson stat	2.733793
Prob(F-statistic)	0.148685		