



Firm Size, Firm Leverage and Corporate Social Responsibility Cost of Listed Manufacturing Firms in Nigeria

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Date of Submission: 08-10-2025

Date of Acceptance: 19-10-2025

Abstract

In today's business world, enormous costs are incurred in the performance of corporate social responsibility. However, such costs are influenced by some factors associated with the performing firms. The study investigates firm size, firm leverage and their impact on corporate social responsibility (CSR) cost of the listed manufacturing firms in Nigeria. The study used ex-post facto research design and panel data regression analysis with the aid of E-views version 12 to examine the influence of firm size and firm leverage on CSR cost. There were thirty-five (35) purposively selected listed manufacturing firms in Nigeria, for the 2014 to 2024 financial years. The findings showed that firm Size has a positive and significant effect on Corporate Social Responsibility Costs. The study also found that firm leverage has a positive but insignificant effect on Corporate Social Responsibility Costs. The study concluded that firm size was significant in affecting corporate social responsibility costs while firm leverage was not significant in affecting corporate social responsibility costs. It is also recommended that firms should adopt strategic financial planning practices to ensure strategic allocation of financial resources contributes effectively to CSR initiatives and firms should assess alternative financial structures such as equity financing or retained earnings, to play a more significant role in CSR investment to integrate.

KEY WORDS: Firm Size, Firm Leverage, Firm Growth, Corporate Social Responsibility Cost, Manufacturing Firms

I. Introduction

The cost incurred on Corporate Social Responsibility (CSR) has increased globally within the past three decades. Investors, firms and consumers are increasing focusing their attentions toward corporate social responsibility (CSR). While investors try to invest in businesses that align with societal interest and firms are clamouring to be socially responsible, consumers

choose products based on brands sustainability. These have resulted in the increase of CSR costs. In Nigeria, with the advent of millennium development goal (MDG) at the beginning of the current (twenty first) century, and subsequently the sustainable development goal has brought about a growing impetus in the scheme among firms. The trend continued with growing activities of the non-governmental organizations (NGO), which was catapulted by the growing insurgency and other social and environmental havocs in Nigeria. Nigeria as an emerging economy has been bedeviled by dearth in infrastructures and essential needs for her citizens. During such periods corporate organizations have been engaged to show their concerns through corporate social responsibility (CSR) investments. The CSR is pursued by firms through their commitment to be accountable to the economy, society and the environment. The firms commit huge cost which results to nothing in return. The expenses which may have impact on health, education, road construction and disaster relieves are enormous.

Traditionally CSR is viewed as business actions which are not required by law, carried out to ameliorate or avert some social ills, and that are adjacent to the firms' main aim of profit (Young *etalin* Etoko, 2024). In the view of Wobo and Nwanze (2024) CSR refers to moral value of a company's action in relation to its stakeholders, including the general public, local communities, and the natural environment. CSR serves many purposes which include business strategy, goodwill and image creation among others. While it is termed as voluntary and a way of paying back to the society, especially the host community, it is essential to every firm. However, the cost to be incurred in form of CSR spending depends on the attributes or features of a firm. Not every firm that have equal ability to expend or execute CSR commitment as expected. Some will be constrained by their size, liquidity or growth.



Firm size connotes the magnitudes of firm's business (Colema & Etale, 2024). According to Kehinde *etal*(2022) the size of an organization is vital factor that influence its external environment. Large organization plays an important role in the business world and possessed the power to influence stakeholders and with its increasing acceptance and links to outside business environment, size of a firm is vital factor for consideration in financial decisions. For instance, size of a firm which suggests that bigger firms spend more on CSR than smaller ones. Like-wise a firm with higher leverage will be constrained to spend due to the servicing of debt from the available cash. Also a profitable and high liquid firm can engage in CSR spending more than a firm that is illiquid and less profitable. A high growing firm in terms of asset, sales, revenue and employment can commit more resources to CSR than low growing ones.

There are various studies conducted on the firm size, leverage and their impact on CSR cost. Such include Zik-Rullahi and Farouk (2021), Diekola *etal* (2024), Nzereogu and Onyali (2023) Zuraida and Sugianto (2021) and Perera *et al* (2024). While some studies such as Olorunnisola & Usman (2023), Diekola *et al*,and Nzereogu & Onyali (2024) were conducted in Nigeria, some (Zik-Rullahi & Faruok and Perera *etal*) were carried out in Asian countries. All the above used CSR expenditure as independent variable, however, while some of the studies create sectorial (Olorunnisola & Usman, 2023), continental and methods gaps, others have industrial and method differences. Some of the studies have established possible links between leverage and CSR cost, as some established positive, negative relationships, and others asserted that one such factors is the firm size as the cause for contradiction between. This study intends to investigate the firm characteristics (firm size and firm leverage) and CSR cost of listed manufacturing firms in Nigeria. It is motivated by the dearth of research in the manufacturing sector and lack of interaction between cost and those factors. The objective of the study is to find out whether firm size have influence on CSR cost and the effect of financial leverage on CSR cost of the listed manufacturing firms in Nigeria. Therefore, the hypotheses based on the above are:

- i. There is no significant relationship between firm size and corporate social responsibility (CSR) cost of the listed manufacturing firms in Nigeria;
- ii. There is no significant relationship between firm leverage and corporate social

responsibility (CSR) cost of the listed manufacturing firms in Nigeria.

II. LITERATURE REVIEW

2.1 Conceptual Framework

2.1.1 Firm Size

According to Enoma (2024), firm size refers to the size of the business unit. Larger businesses may manufacture things at significantly lower prices than smaller business. Abiodun (2020) assert that the client size plays an important role in determining the kind of relationship a firm enjoy within and outside its operating environment. The larger a firm is, the greater the influence it has on its stakeholders (Abiodun, 2020 in James & Lasisi, 2021). Company size is the size of the company's image, which can be assessed based on the volatility of the company's activities, which can be viewed from various aspects. Company size is the independent variable which explains variations in corporate social responsibility (Super *et al*, 2020). One of the most important components of company's profile is its size, which indicates the size and its activities in the market (Bakare *et al.*, 2024). Firm size is considered as one of the most influential characteristics in organization studies. The term 'firm' refers to the business unit or undertaking which owns the plant (the factory), the banking hall, the warehouse or transport depot), controls and manage it (Zik-Rullahi & Faruk, 2021).

The company size is the most commonly analyzed feature in the reviewed studies to explain the level of disclosure in general (Ohonba & Ogbeide, 2021) Firm size may be significant for several reasons, including the possibility of scale economies in environmentally conscious initiatives (Perera *et al*, 2024). Larger firms have more resources that can be deployed in information gathering and communication to various stakeholders. They can also better able to attend to social needs than small firms given their relatively larger amount of financial resources. Larger firms are also engaged in activities that can impact the society on a wider form than the operations of small firms (Okoba & Chukwu, 2023). Firm can enjoy a minimum efficient scale (MES) which is attainable when a firm reach a size that is in line with the minimum long run average cost. Companies with small size than the MES benefit economics of scale until they reach the MES but all companies beyond the MES are identified by constant returns to scale (Owoeye *etal*, 2024). Size of company is measured by the total assets (Super *etal*, 2020)



2.1.2 Firm Leverage

Leverage is the extent to which firms employ debts in their capital structures. Increase in the use of debts in a firm's capital structure increases the risk of financial distress and probability of bankruptcy which may arise as a result of default (Abubakar & Garba, 2019 in James & Lasisi, 2021). Leverage finance refers to the funding of a company or business entity with debt with the hope of improving the firm's financial performance (Edako *et al.*, 2024). Leverage measures the long term liabilities of a firm; higher leverage indicates higher proportion of liabilities in the capital structure of a firm. Leverage is an investment strategy of using borrowed money, specifically, the use of various financial instruments or borrowed capital to increase the potential return of an investment. Leverage can also refer to the amount of debt a firm uses to finance assets (Diekola *et al.*, 2024).

A company that depends on loan to finance its activities will be constrained to maintain a good relationship with its various stakeholders (Okoba & Chukwu, 2023). Leverage is one of the important items in the capital structure of companies and it provides a medium for corporate financing as firms borrow money to obtain capital they require for operating their business (Ohonba & Ogbeide, 2021). Leverage is a term used to describe a firm's ability to increase the income level for a firm (Brigham & Houston, 2010 in Cheryta *et al.*, 2017). Higher leverage can increase the uncertainty of returns that will be obtained by the firm. However, at the same time leverage can also increase the return earned (Cheryta *et al.*, 2017).

2.1.3 Corporate Social Responsibility (CSR) Cost

Corporate Social Responsibility (CSR) is defined as a firm's self-regulatory effort to entrench policies and practices that promote social and environmental good beyond the firm's interest (Olorunnisola & Usman, 2023). CSR involves the contributions made by corporations toward the immediate community, which can be done through various means such as providing water, road construction, and other beneficial activities (Hassan *et al.*, 2024). CSR is a term that promotes voluntary participation in certain activities or social obligation. Despite not having a clear economic connection, these social activities have favourable indirect effect on the businesses that engage in them (Ariyabudu & Hulangamuha, 2002; Justice, 2002 & Hopkins, 2005 in Perera, 2024). The opinion of scholars on CSR is that since business organizations do not exist in isolation, business organizations

need to contribute positively to the development of the community in which they operate (Igbekoyi *et al.*, 2019).

CSR cost on the other hand can be seen as the expenditure incurred by an entity, firm or company in the process of carrying out social responsibility to its host communities. These costs can include direct expenses such as investments in renewable energy, sustainable supply chains, or employee training programs, as well as indirect costs such as reputational damage or legal fees for non-compliance with CSR regulations (Bansal, 2005 in Onyali *et al.*, 2024). CSR spending has a positive and significant relationship with company size (Zuraida & Sugianto (2021). Any amount expended on CSR performance in any form is considered as CSR cost.

2.1.4 Firm Growth

Growth is reality but difficult to predict especially looking at the conflicting results of studies in in this area. Studies have suggested that possible growth performance indicators to include assets, market share, employment and sales (Hassan *et al.*, 2014). Growth in the perspective of this study means the process due to the interaction of the decisions of the manager or owner on strategic financial decisions, organizational decisions. In addition to the management decisions, external or even random factors can change the initial conditions from the firm to the new environment, in order to cope with these changes, the firm needs to change on the interaction of several circumstances, including the capabilities of its managers, its financial assets, its investment innovation, and its sector and geographical location (Owoeye *et al.*, 2024). Growth rate can be measured in terms of total assets (Hung *et al.*, 2019). In this study the firm growth is proxy by revenue derived from sales.

2.2 Empirical Review

Unwana *et al.* (2025) examined the effect of corporate social responsibility and financial performance of listed manufacturing firms in Nigeria. The purpose is to evaluate the effect of environmental responsibility, social responsibility, staff welfare and economic responsibility on return on assets of listed manufacturing firms in Nigeria. Ex-post facto research design was adopted, and panel data covering ten (10) years (2014 – 2023) were collected across twenty-five (25) selected manufacturing firms in Nigeria which formed the sample size of the study. The data collected were analyzed using descriptive statistics and Panel Multiple Regression analysis via E-views



10.0 Statistical Package. The study findings revealed that environmental responsibility has a non-significant negative effect on return on assets of listed manufacturing firms in Nigeria; social responsibility has a non-significant positive effect on return on assets of listed manufacturing firms in Nigeria; Economic responsibility has a significant effect on return on assets of the listed manufacturing firms in Nigeria and staff welfare responsibility has a significant positive effect on return on assets of listed manufacturing firms in Nigeria. It was concluded that environmental responsibility has a non-significant negative effect on return on assets, while social responsibility has a non-significant positive effect. However, economic responsibility and staff welfare responsibility have significant positive effect on return on assets. It was recommended that firms should review their environmental responsibility initiatives and consider alternative approaches that may be more effective in improving financial performance and policy makers and regulatory bodies in Nigeria should encourage listed manufacturing firms to discuss their social responsibility initiatives more transparently. Improve disclosure of social responsibility initiatives can help stakeholders better understand the impact of these initiatives and make more informed investment decisions. The sample size is not up to half of the number of manufacturing firms in Nigeria which is inadequate for the population and study was conducted on CSR and firm performance.

Perera *et al* (2024) studied the impact of corporate social responsibility expenditure on financial performance. A quantitative study of financial institutions in Sri-Lanka. It examines at the effect of CSR expenditure in the two states commercial banks and few other financial institutions that are listed on the CSE in Sri-Lanka. The independent variable in this analysis is CSR expenditure, whereas the dependent variable is financial performance metrics (ROA< ROE and EPS) are used to assess the financial performance of the financial institutions. The study control variables were firm age, firm size, and GDP growth rate. For a duration of eight years, the researchers gathered secondary data on the financial institutions from 2015 to 2022 by using audited annual reports, which include 13 financial institutions as a sample. The study findings revealed that CSR has a statistically significant impact on financial performance. The correlation analysis demonstrated a statistically significant relationship between CSR expenditure and ROA, ROE and EPS. The

correlation coefficient showed that all of the suggested hypothesis were significant and acceptable. The findings from the regression analysis reveals that CSR expenditure has an impact on the financial institutions' ROA, ROE and EPS. The results and implication can assist Sri-Lankan financial institutions in designing their CSR projects to maximize value for the organization, resulting in CSR as anon-profit endeavor might help financial institutions meet their social responsibility obligations, while also enhancing future intangible revenue and preparing them for market competitiveness, In contrast, CSR investments may improve community development, diversity promotion, and quality of life, while treating social challenges including poverty, healthcare, education, and environmental sustainability. Findings from the regression analysis revealed the CSR expenditure has impact on the financial institutions ROA, ROE and EPS. The study used return on assets and return on equity as measures of profitability.

Onyali *et al* (2024) ascertained determinants of social responsibility costs of listed manufacturing firms in Nigeria. It is to determine the relationship between firms' total assets and community development cost; total sales and staff development; and total equity and public utility cost respectively of listed manufacturing firms in Nigeria. The population of the study comprised all the 21 listed consumer goods manufacturing firms in Nigeria. Purposive sampling was applied in selecting the 15 consumer goods firms that made up the sample size for the study. Secondary data were collected from the annual reports of the sampled firms over a ten-year accounting period which spanned through 2013 to 2022. The Pooled Ordinary Least Square regression was used in testing the hypothesis. The findings of the study indicated that there is a significant positive relationship between firms' total assets and community development cost of listed manufacturing firms in Nigeria (p-value = 0.0059); there is a significant positive relationship between firms total sales and staff development cost of listed manufacturing firms in Nigeria (p-value = 0.0000); there is positive but non-significant relationship between firm's total equity and public utility cost of listed manufacturing firms in Nigeria (p-value = 0.7002). Based on the findings, it was generally recommended in the study that firms should prioritize their investment in social responsibility as their financial metrics progress so as to enhance their reputation and strengthen their



relationship with host communities and stakeholders. There was suggestion for further research on different industries and periods to be increased.

Owoeye *et al* (2024) studied effect of firm attributes on corporate social responsibility practices of listed manufacturing firms in Nigeria. It examined the effect of firm attributes and corporate social responsibility practices of listed manufacturing firms in Nigeria from 2014 -2023. The study adopts ex- post facto research design, using stratified and purposive sampling techniques, 24 firms were selected out of 60 listed manufacturing firms on the Nigerian Exchange Group as at 31st December, 2022. Analysis for the data collected was carried out using the panel data regression technique. Findings from the study revealed that profitability, firm size and firm growth were found to be statistically significant in explaining and positively related to corporate social responsibility practices. Thus, the study concluded that profitability, firm size and firms' growth have significant effect on corporate social responsibility practices of listed manufacturing firms in Nigeria. The study recommends that manufacturing firms should increase their profitability and total asset to enable them improve on corporate social responsibility practices for the benefit of the host communities. The study used CSR practice instead of CSR expenditure or cost though on manufacturing firms.

Olorunsola and Usman (2023) studied the effects of CSR expenditure on the firm performance of selected sectorial industries in Nigeria. It aims to determine the influence of CSR on capital market and business performance in Nigeria's selected industries. The study population comprises of three key industries; oil and gas, consumer goods and banking listed on the Nigerian Exchange Group (NGX) as at 2020. The study revealed that CSR spending exerts positive insignificant impact on profit after tax with coefficient estimate of 4.984367, when both cross section effect and period effect incorporated as intercept terms in the model. It was concluded that government should improve the capital market operation regulations be suitable for small and medium manufacturing companies to operate effectively in the market. The period of the study has not been mentioned and there is no sampling frame for the three sectors. It also assessed the influence of CSR on capital market and business performance in Nigeria.

Nzereogu and Onyali (2023) examines the relationship between firm financial characteristics and social responsibility cost of public industrial

goods firms listed in Nigeria. The study determines the extent to which firm total sales, firm total assets, firm financial leverage and firm profitability relate to public responsibility cost. The study adopts ex-post facto research design. From the sampling frame of 13 listed industrial goods firms, a sample size of 11 firms was purposively selected. Secondary data were collected from the annual reports of the sampled firms over a period of 10 years (2012-2021). In addition to diagnostic tests and descriptive tests, Pooled Ordinary Least Square was applied in estimating the regression model at 5% level of significance. The study found that firm total sales have no significant but positive relationship with public responsibility cost of listed industrial goods firms in Nigeria; firm total assets have a significant positive relationship with public responsibility cost of listed industrial goods firms in Nigeria; firm's profitability has a significant positive relationship with public responsibility cost of listed industrial goods firms in Nigeria. It was concluded that profitability has a significant positive relationship with corporate social responsibility supports the notion that more profitable firms have a greater ability to invest in social responsibility initiatives and are therefore expected to contribute more to society. The study recommended that policy makers should use incentives such tax breaks or other financial benefits to encourage larger firms to invest in corporate social responsibility initiatives. It was only industrial goods firms used in the study, other industries would have been included.

Zuraida and Sugianto (2021) studied CSR spending of Indonesia's IPO (Initial Public Offering) prospectuses. The prospectus contains financial and non- financial information such as corporate social responsibility (CSR) spending. However, the level of disclosure is usually not uniform across companies. The study examines the nature and factors influencing CSR spending disclosed by Indonesian companies in the prospectuses for the period 2012 -2019. Research data was hand collected and analyzed using descriptive statistics, Pearson Correlation and Multiple Regression. The findings show that most companies disclose CSR efforts; fewer companies reveal the amount spent on CS activities. Among companies disclosing SR spending, more spending is allocated in the years leading to the IPO date (y) compares to previous years. Thus spending on y is relatively higher than y-1, followed by y-2 and y-3. CSR spending has a positive and significant relationship with company size. These findings are consistent



across alternative model specifications. This study made an essential contribution to the CSR literature by providing Indonesia's first empirical evidence on the CSR expenditure in IPO prospectuses. The study used CSR spending which is same as expenditure however, it was conducted in Indonesia and there was specific sector used.

Oladele and Mokuolu (2020) studied the impacts of corporate social responsibility on firm performance of some quoted firms in Nigeria. The study focuses on oil and banking sectors who dominate the CSR in Nigeria. Profit after tax (PAT) of the firms was used to proxy the performance and CSR expenditure, total assets, working capital and leverage were used as independent variables in the model. Panel data analysis was adopted as the major estimating techniques and the result show that CSR expenditure of the firms, though, have positive impacts on their performances but the effect is not significant. Total assets of the firm remain the most significant variable on their performance. The study also showed that the banking sector is more organized and unique in the approaches to CSR and its implication on their performance more than oil firms. It is recommended that firms in Nigeria should engender ways to make CSR expenditure impact positively and significantly on their performance and relevant authorities should also beam more search light on the oil sector where direct approaches to CSR exist. The study used firm performance as a dependent variable and it was conducted on oil firms and the banking sector.

Igbekoyi *et al.* (2019) assessed the trend of compliance of manufacturing firms in Nigeria to corporate social responsibility (CSR). It was done with a view to assess the ratio of funds committed to CSR from total income (TI) and the explanatory power of the latter on the former. A sample size of 25 manufacturing firms on the Nigerian Exchange Group (NGX) was selected using purposive sampling technique as to capture only firms that are in existence consistently within the time frame of the study. Data were collected from annual reports of the selected firms for the period of 2002 — 2016. Data collected were analyzed using tables, graphs and cross — sectional regression trend analysis with the aid of E-view statistical package. The findings of the study revealed that the rate of compliance of Nigeria manufacturing firms to CSR is more than the rate of non-compliance. However, it was found that the firm's engagement in CSR was unstable over the period under review and statistically insignificant at certain

point in time. It was also found that the ratio of funds committed to the CSR is relatively small compared to the total income derived in a given year even though TI largely explained cross sectional changes in CSR. The study recommends the companies should make effort to increase funds committed to CSR significantly. This study is more on compliance among firms and there is no regulatory framework in Nigeria.

2.3 Theoretical Framework

Three theories related to corporate social responsibility for the purpose of this study will be discussed. They are stakeholder, slack resources and legitimacy theories. However, the theoretical underpin is based on the legitimacy theory. It is a theory that response to a variety of factors; such as environmental, social, political and economic influences. Below are the theoretical models:

2.3.1 Stakeholder Theory

Stakeholder theory was propounded by Freedman (1984). The basic proposition of the stakeholder theory is that the firm's success is dependent upon the successful management of all the relationships that a firm has with its stakeholders, a term originally introduced by Stanford research institute (SRI) to refer to those groups without whose support the organization would cease to exist (Freeman, 1983). Freeman's stakeholder assert that, managers must satisfy a variety of constituents (example, employees, customers, suppliers, local community and so on) who can influence the firm's outcomes. According this view, it is not sufficient for managers to focus exclusively on the needs of stakeholders, on the owners of the business. This implies that it can be beneficial for the firm to engage in certain environmental activities that non-financial stakeholders perceive important, because without this, these groups might withdraw their support from the business (Unwana *et al.*, 2025).

Stakeholder theory has infiltrate the academic dialogue in management and a wide array of disciplines such as healthcare, law and public policy (Freedman *et al.*, 204 in Adeyemi *et al.*, 2024). Stakeholder theory is a business approach that emphasis the importance of managing relationships with various stakeholders, including financier, shareholders, customers, employees, and communities (Van Beurden *et al.*, 2008 in Perera, 2024). Stakeholder theory states that a company is not an entity that only operate for its interest but must also provide benefits to stakeholders (Naingolan & Handoyo, 2019).



2.3.2 Slack Resources Theory

The slack Resources Theory was propounded by Cyert and March (1963). They defined slack as the difference between total resources and total necessary payments (Akinepelu, 2023). According to the slack resources theory high performing corporations have a huge pool resources to invest in socially responsible programmes. The hypothesis assumes that the availability of slack resources for social programmes allocation is dependent on excellent financial performance; thus, there should be a positive links (Arumona *et al*, 2024). Nainggolon and Handoyo (2019) assert that slack resources theory suggests that better financial performance potentially results in the availability of slack (financial or others) resources that provide opportunities for companies to invest in social performance domains. The theory explains that better financial performance can be the right tool to predict better social performance. Abdu *et al* (2014) posits that slack resources theory is developed based on observation that a firm is only able to carry out its activities as a result of available resources at the disposal of the firms which is normally set aside to the predefined activities.

2.3.3 Legitimacy Theory

The legitimacy Theory was propounded by Dowling and Pfeffer in 1975. This theory states that organizations seek to operate within what is considered as acceptable in the society. What is considered as acceptable behavior changes over time and the firm must be prepared for variations in the environment taking ethical aspects into account. Legitimacy may also be seen as a generalized perception or assumption that the action of an entity is desirable, proper appropriate within some society constructed system of norms, values, beliefs and definitions (Unwana *et al*, 2025). According to Olorunnisola & Usman (2023), legitimacy theory was propounded by Prabh (1998) and Reverte (2009). This theory postulates that corporations as a matter of duty must have the community at heart, not just owners of the business. As such business whose operations are in conformity with community laid down principles and international practices, the community has the right to discontinue the operations of such visit domain. Legitimacy theory is the view that the action of a firm is desirable and appropriate, and confirm to existing norms and value within a society. The theory is predicated on the notion that a firm has a social contract with its society. The contract requires that a firm should conduct its activities in the manner that is fair to the

society — judiciously using resources shared with society, replenishing these resources where possible, and assisting in meeting the social needs in its environment (Okoba & Chukwu, 2023).

Legitimacy theory offers a powerful mechanism for understanding voluntary social and environmental disclosure made by corporations, and that this understanding would provide a vehicle for engaging in critical public debate (Unwana *et al*, 2025). Legitimacy theory underpins this study because it argues that organizations seek to ensure that they operate within the bounds and norms of society and conceived as congruence between institutional actors and social values, and legitimization as actions that institutions take either to signal value congruency or change social value (Adeyemi *et al.*, 2024). Bissoon (2028) postulates that the legitimacy theory is based on the fact that community support is vital for the survival, growth and image of companies. However, in order to acquire this support, corporations constantly try to ensure that they operate within the bounds and norms of society as a result must disclose specific information to convince the society that their activities are legitimate and beneficial. Based on the above, the legitimacy theory underpins the study as it is having the social contract with the community that host its operation.

III. METHODOLOGY

The study adopts the ex-post factor research design using secondary data. The population of the study covers all the 55 listed manufacturing firms on the Nigerian Exchange Group (NGX) as at 31 December, 2024. There were thirty-five (35) firms purposively selected as sample size. The audited financial statements and annual reports and accounts of the listed firms in Nigeria for the years (2014 — 2024) under consideration provided the data needed for the study. A panel data regression was applied using E-views version 12(2025) in the analysis. The analysis employed the descriptive statistics and correlation analysis to determine the relationship between firm size, leverage and CSR cost of the manufacturing firms in Nigeria. The study adopted model employed by Colma and Etale (2024) in a study conducted on firm characteristics and corporate social responsibility of listed consumer goods firms in Nigeria for the period of eleven years covering 2014 to 2024. It adopted firm size and firm age as proxies. The model was however modified to suit this study and presented in equation 1 as follow:



Table 4.1: Descriptive Statistics

	CSRC	FL	FS	FG
Mean	70707.97	1.981019	189575.8	45.48571
Median	5902.000	1.331829	24507.60	47.00000
Maximum	1820000.	48.11434	6503236.	101.0000
Minimum	0.000000	-10.73929	0.000000	6.000000
Std. Dev.	211201.7	3.322066	503556.8	19.62780
Skewness	5.155914	7.474125	7.284155	0.164620
Kurtosis	33.60896	101.2093	76.49705	2.800488
Jarque-Bera	16735.34	158307.5	90058.75	2.377447
Probability	0.000000	0.000000	0.000000	0.304610
Sum	27222570	762.6922	72986693	17512.00
Sum Sq. Dev.	1.717213	4237.871	9.741913	147936.2
Observations	385	385	385	385

Source: E-views 12 output (2025)

The mean values indicate that corporate social responsibility costs averages 70,707.97, firm leverage averages 1.981019, FS stands at 189,575.8, and FG is 45.48571. The standard deviation values highlight substantial variability, particularly in corporate social responsibility costs (211,201.7) and FS (503,556.8), implying a wide dispersion within these variables. Skewness values show that corporate social responsibility costs, firm leverage, and FS are highly right-skewed, indicating that a few extreme values are present in the dataset. The kurtosis values further reinforce this, with firm leverage (101.2093) and FS (76.49705) displaying extreme peakedness, confirming the presence of outliers. The Jarque-Bera test results for corporate social responsibility costs, firm leverage, and FS are statistically significant (p-value = 0.000000), meaning they do not follow a normal distribution. However, FG has a non-significant p-value (0.304610), suggesting that it may follow a normal distribution.

4.1.2 Correlation Analysis

The correlation analysis examines the relationship between corporate social responsibility costs and two independent variables: firm size and firm leverage. The null hypothesis (H_0) states that there is no statistically significant correlation between corporate social responsibility costs and each independent variable. If the p-value is below 0.05, the null hypothesis is rejected, indicating a significant relationship. Thus:

- i. There is no significant relationship between firm size and corporate social responsibility (CSR) cost of the listed manufacturing firms in Nigeria;
- ii. There is no significant relationship between firm leverage and corporate social responsibility (CSR) cost of the listed manufacturing firms in Nigeria.



Table 4.2: Correlation Matrix

Covariance Analysis: Ordinary

Date: 05/16/25 Time: 01:41

Sample: 2014 2024

Included observations: 385

Correlation Probability	CSRC	FL	FS	FG
CSRC	1.000000 -----			
FL	0.003906 0.9391	1.000000 -----		
FS	0.180686 0.0004	0.017799 0.7277	1.000000 -----	
FG	-0.176172 0.0005	0.056922 0.2652	-0.134948 0.0080	1.000000 -----

Source: E-views 12 (2025)

The findings reveal that corporate social responsibility costs and FL have an extremely weak positive correlation with a coefficient of 0.003906 and a p-value of 0.9391, indicating an insignificant relationship. Therefore, the null hypothesis is accepted, meaning firm leverage does not significantly influence Corporate social responsibility costs and FS exhibit a weak but statistically significant positive correlation with a coefficient of 0.180686 and a p-value of 0.0004, leading to the rejection of the null hypothesis. This suggests that larger firms tend to contribute more to corporate social responsibility and FG show a weak negative correlation with a coefficient of -0.176172 and a p-value of 0.0005, indicating a statistically significant inverse relationship. The null hypothesis is rejected, meaning that as firm growth increases, Corporate social responsibility

costs tend to decline.

4.1.3 Multicollinearity Test

The multicollinearity test, using the Variance Inflation Factor (VIF), assesses whether the independent variables in the regression model exhibit high correlations among themselves, which can distort the accuracy of coefficient estimates. The objective of this test is to ensure that the independent variables contribute unique explanatory power to the model without redundancy. The null hypothesis states that there is no problematic multicollinearity among the independent variables. If the centred VIF values exceed the standard threshold of 10, multicollinearity is considered severe, warranting adjustments.



Table 4.3 Variance Inflation Factor

Variance Inflation Factors

Date: 05/16/25 Time: 01:46

Sample: 2014 2024

Included observations: 385

Variable	Coefficien Uncentere		
	t	d	Centered
	Variance	VIF	VIF
FL	10051369	1.361838	1.003917
FS	0.000444	1.164058	1.019225
FG	293185.6	6.526211	1.022214
C	7.795408	7.070144	NA

Source: E-views output 12 (2025)

The findings indicate that all centred VIF values for Firm Leverage (1.003917), Firm Size (1.019225), and Firm growth (1.022214) are well below the acceptable threshold of 10, indicating that multicollinearity is not a concern in the model. Consequently, the null hypothesis is accepted, confirming that the independent variables do not exhibit problematic collinearity, and regression estimates remain statistically reliable.

4.1.4 Hausman Specification Test

The Hausman test determines whether the fixed-effects or random-effects model is the appropriate specification for panel data analysis. The objective of the test is to assess whether the independent variables are correlated with the error term. The null

hypothesis states that the random-effects model is appropriate, meaning the independent variables are uncorrelated with the error term. The decision rule dictates that if the p-value is below 0.05, the null hypothesis is rejected, and the fixed-effects model is preferred. Thus:

- i. There is no significant relationship between firm size and corporate social responsibility (CSR) cost of the listed manufacturing firms in Nigeria;
- ii. There is no significant relationship between firm leverage and corporate social responsibility (CSR) cost of the listed manufacturing firms in Nigeria.



Table 4.4: Hausman Test
Correlated Random Effects - Hausman Test
 Equation: EQ01
 Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	11.222657	3	0.0106

Cross-section random effects test comparisons:

Variable	Fixed	Random Var (Diff.)	Prob.
	938.82431	1375.9208	210687.94
FL	5	59	8571
FS	0.077184	0.097064	0.000255
		-	
	7791.1441	165.97770	6386620.1
FG	1	3	68264

Source: E-views output 12 (2025)

The test results reveal a Chi-Square statistic of 11.222657 with a p-value of 0.0106, which is below the 0.05 threshold. This leads to a rejection of the null hypothesis, indicating that the fixed-effects model is more appropriate than the random-effects model. This result suggests that firm-specific characteristics influence the dependent variable, and ignoring these effects in a random-effects model would lead to biased estimates.

4.1.5 Likelihood Ratio Test

The likelihood ratio test is conducted to determine whether fixed effects should be included in the model. The objective is to examine whether the inclusion of fixed effects significantly improves model performance. The null hypothesis states that fixed effects are redundant, implying that a pooled regression model suffices. The decision rule states that if the p-value is below 0.05, the null hypothesis is rejected, confirming that fixed effects improve model accuracy.

Table 4.5: Likelihood Ratio Test
Redundant Fixed Effects Tests
 Equation: EQ01
 Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	8.160860	(34,347)	0.0000
	226.21724		
Cross-section Chi-square	9	34	0.0000

Source: E-views output 12 (2025)



The test results indicate a Cross-section F-statistic of 8.160860 with a p-value of 0.0000, and a Chi-Square statistic of 226.217249 with a p-value of 0.0000, both below the 0.05 threshold. As a result, the null hypothesis is rejected, confirming that fixed effects significantly enhance the model's explanatory power. This implies that firm-specific characteristics should be accounted for in the analysis to obtain robust regression estimates.

4.1.6 Heteroskedasticity Test

The Breusch-Pagan-Godfrey test examines whether the regression model suffers from heteroskedasticity problem, where the variance of the residuals changes systematically across observations, potentially affecting statistical inference. The objective of this test is to determine if the error terms exhibit constant variance. The null hypothesis states that there is no heteroskedasticity in the model. The decision rule is that if the p-value is below 0.05, the null hypothesis is rejected, indicating the presence of heteroskedasticity.

Table 4.6: Breusch-Pagan-Godfrey Test for Heteroskedasticity

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.232633 Prob. F(3,7)	0.8709
Obs*R-squared	0.997272	Prob. Chi-Square(3) 0.8019
Scaled explained SS	0.182201	Prob. Chi-Square(3) 0.9804

Source: E-views 12 (2025)

The findings reveal an F-statistic of 0.232633 with a p-value of 0.8709, an ObsR-squared value of 0.997272 with a p-value of 0.8019, and a Scaled explained SS statistic of 0.182201 with a p-value of 0.9804, all well above 0.05. Consequently, the null hypothesis is not rejected, confirming that heteroskedasticity is not present in the regression model. This implies that the error terms exhibit constant variance, ensuring that standard errors and coefficient estimates remain reliable.

4.2 Test of Hypothesis

The panel least squares regression was conducted to examine the relationship between Corporate Social Responsibility Costs, Firm Leverage, Firm Size, and Firm growth. The objective was to determine whether these independent variables significantly influence corporate social responsibility activities within firms. The null hypothesis states that Firm Leverage and Firm Size do not significantly affect Corporate Social Responsibility Costs. The decision rule states that if the probability value is below 0.05, the null hypothesis is to be rejected, indicating statistical significance.



Table 4.7: Fixed Effect Regression

Dependent Variable: CSRC
 Method: Panel Least Squares
 Date: 05/16/25 Time: 01:52
 Sample: 2014 2024
 Periods included: 11
 Cross-sections included: 35
 Total panel (balanced) observations: 385

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FL	938.8243	2728.643	0.344063	0.7310
FS	0.077184	0.030072	2.566664	0.0107
FG	7791.144	2761.247	2.821604	0.0051
C	300169.8	123765.0	-2.425320	0.0158

Effects Specification

Cross-section fixed (dummy variables)	
R-squared	0.475564
Adjusted R-squared	0.419644
S.E. of regression	160895.8
Sum squared resid	8.982212
Log likelihood	5141.864
F-statistic	8.504400
Prob(F-statistic)	0.000000

	Mean dependent	
	70707.97	
	S.D. dependent var	211201.7
	Akaike info	26.90839
	Schwarz criterion	27.29858
	Hannan-Quinn	27.06314
	Durbin-Watson stat	1.662101

Source: E-views 12 (2025)

The findings reveal that Firm Leverage has a coefficient of 938.8243 and a probability value of 0.7310, indicating an insignificant relationship with Corporate Social Responsibility Costs. This leads to the acceptance of the null hypothesis, confirming that firm leverage does not significantly influence corporate social responsibility activities. Firm Size, with a coefficient of 0.077184 and a probability value of 0.0107, shows a statistically significant positive relationship with Corporate Social Responsibility costs. This suggests that larger firms are more likely to engage in social responsibility initiatives, leading to the rejection of the null hypothesis for Firm Size. The constant term has a coefficient of -300169.8 and a probability value of 0.0158, indicating that, without considering the independent variables, corporate social responsibility costs would be lower.

The R-squared value of 0.475564

suggests that approximately 47.56% of the variation in corporate social responsibility cost is explained by Firm Leverage, Firm Size, and Firm growth. The adjusted R-squared value of 0.419644 accounts for degrees of freedom and suggests a slightly lower explanatory power, meaning that additional variables may further enhance the model's predictive ability. The F-statistic of 8.504400, with a probability value of 0.000000, confirms that the overall model is statistically significant. This implies that, despite some independent variables being insignificant, the combined effect of the predictors provides meaningful insights into corporate social responsibility costs. The Durbin-Watson statistic of 1.662101 indicates mild positive autocorrelation in the residuals, though it is not severe enough to compromise the reliability of the regression results.



These findings suggest that Firm Leverage does not significantly drive corporate social responsibility costs, while Firm Size positively influence them. Larger firms tend to engage more in social responsibility initiatives, reflecting their financial capacity and maturity in sustainability efforts. Policymakers and corporate executives may consider these insights when designing corporate social responsibility strategies, ensuring that financial resources align with long-term social impact.

4.3 Discussion of Findings

The findings of the fixed-effects regression reveal that firm size plays a significant role in determining corporate social responsibility costs, while firm leverage does not have a significant effect. These results align with several empirical studies that emphasize financial strength and business expansion as key drivers of corporate social responsibility cost.

Firm size was found to have a significant positive impact on corporate social responsibility costs, suggesting that larger firms allocate more resources towards social responsibility initiatives. This finding supports studies such as Onyali et al. (2024) and Zuraida and Sugianto (2021), which highlighted the role of firm size in influencing corporate social responsibility cost. The alignment with previous literature strengthens the argument that larger firms are more financially capable of funding social initiatives as part of their corporate strategies.

In contrast, firm leverage was found to be insignificant in affecting corporate social responsibility costs. This contradicts certain empirical studies, such as Nzeroogu and Onyali (2023), which explored firm financial leverage and public responsibility costs but did not find a strong effect. The lack of significance in this study suggests that firms may prioritize financial obligations over social investments when dealing with high levels of debt. While previous studies have acknowledged a mixed relationship, this finding implies that leveraged firms might adopt a more conservative approach to discretionary costs like corporate social responsibility.

The research findings do not totally concur with the a priori expectation stated. While firm leverage is in tandem, with insignificant relationship, the firm size indicates a positive and significant relationship with corporate social responsibility (CSR) cost of the listed manufacturing firms in Nigeria.

Overall, the findings suggest that corporate

social responsibility costs are largely driven by firm size and firm growth, while firm leverage does not exert a notable influence. These results largely align with empirical literature emphasizing the financial strength and operational expansion of firms as crucial factors in shaping corporate social responsibility commitments. The contrast observed in the impact of firm leverage, however, highlights the need for further research to explore under what conditions financial leverage might play a more substantial role in corporate social responsibility decisions.

V. CONCLUSIONS AND RECCOMENDATIONS

In conclusion, the fixed effects regression results suggest that firm size (FZ) is positively associated with CSR investment, However, the insignificance of leverage (LV) indicates that some financial variables may not significantly influence CSR cost decisions within the sample considered. This study highlights the importance of strategic financial management in sustaining CSR initiatives and improving corporate reputation while also emphasizing the need for future research to further explore the industry-specific and contextual factors that shape the CSR activities of firms. In line with the findings and conclusions above, the following recommendations have been proffered:

- i. Given the significant positive impact of firm size (FZ) on CSR, firms should adopt strategic financial planning practices to ensure financial resources contributes effectively to CSR initiatives.
- ii. Given the insignificance of firm leverage (FL) in determining CSR cost, future research should explore the underlying factors that influence CSR funding decisions. Firms should also access alternative financial structures, such as equity financing and retained earnings, which play a significant role in shaping the CSR investment.

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APPENDIX

Appendix I : Pooled Effect Regression

Dependent Variable: CSRC
 Method: Panel Least Squares
 Date: 05/16/25 Time: 01:44
 Sample: 2014 2024
 Periods included: 11
 Cross-sections included: 35
 Total panel (balanced) observations: 385

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FL	629.3984	3170.389	0.198524	0.8427
FS	0.066925	0.021075	3.175634	0.0016
	-			
FG	1670.027	541.4662	-3.084269	0.0022
C	132736.1	27913.96	4.755189	0.0000

R-squared	0.056212	Mean dependent var	70707.97
Adjusted R-squared	0.048781	S.D. dependent var	211201.7
S.E. of regression	205986.0	Akaike info criterion	27.31934
Sum squared resid	1.623413	Schwarz criterion	27.36041
		- Hannan-Quinn	
Log likelihood	5254.973	criter.	27.33563
F-statistic	7.564157	Durbin-Watson stat	0.479601
Prob(F-statistic)	0.000063		



Appendix II: Random Effect

Dependent Variable: CSRC
 Method: Panel EGLS (Cross-section random effects)
 Date: 05/16/25 Time: 01:47
 Sample: 2014 2024
 Periods included: 11
 Cross-sections included: 35
 Total panel (balanced) observations: 385
 Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FL	1375.921	2689.759	0.511541	0.6093
FS	0.097064	0.025475	3.810156	0.0002
FG	165.9777	1112.593	-0.149181	0.8815
C	57130.78	55912.74	1.021785	0.3075

Effects Specification

	S.D.	Rho
Cross-section random	131923.1	0.4020
Idiosyncratic random	160895.8	0.5980

Weighted Statistics

R-squared	0.036911	Mean dependent var	24403.66
Adjusted R-squared	0.029327	S.D. dependent var	165061.1
S.E. of regression	162622.7	Sum squared resid	1.012213
F-statistic	4.867320	Durbin-Watson stat	0.774482
Prob(F-statistic)	0.002468		

Unweighted Statistics

R-squared	0.033867	Mean dependent var	70707.97
Sum squared resid	1.658113	Durbin-Watson stat	0.471559