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# FIRM FINANCIAL CHARACTERISTICS AND SOCIAL RESPONSIBILITY COST OF INDUSTRIAL GOODS FIRMS PUBLICLY LISTED IN NIGERIA

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## ABSTRACT

*The study ascertaines the relationship between firm financial characteristics and social responsibility cost of public industrial goods firms listed in Nigeria. Specifically, 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 (β = 0.322045, p-value = 0.0870); firm total assets have a significant positive relationship with public responsibility cost of listed industrial goods firms in Nigeria (β = 1.025267, p-value = 0.0007); firm financial leverage has no significant but positive relationship with public responsibility cost of listed industrial goods firms in Nigeria (β = 0.823169, p-value = 0.2199); firm profitability has a significant positive relationship with public responsibility cost of listed industrial goods firms in Nigeria (β = 2.045239, p-value = 0.0230). In conclusion, the findings 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 as tax breaks or other financial benefits to encourage larger firms to invest in corporate social responsibility initiatives.*

## 1. INTRODUCTION

Corporate Social Responsibility (CSR) practice as well as other ethical issues has gradually become a global phenomenon. There is a growing need for firms operating in various communities to have a great deal of harmony with their host communities. This practice of ensuring that divergent needs of the host communities are reasonably attained in order to ensure smooth and harmonious operations is coined as corporate social responsibility (Amit, Gayatril, Vipul & Shraddha, 2012). Corporate social responsibility has been gradually coming to the centre stage not just in business and corporate governance but also in academia and policy circles. Long gone is the traditional view that 'the business of business is business'. According to UNIDO (2022) definition, 'Corporate Social Responsibility is a management concept whereby companies integrate social and environmental concerns in their business operations and interactions with their stakeholders. CSR is generally understood as being the way through which a company achieves a balance of economic, environmental and social imperatives ("Triple-Bottom-Line-Approach"), while at the same time addressing the expectations of shareholders and stakeholders.'

The strategic architecture of reporting entities has advanced from the primary goal of maximizing the overall wealth of shareholders to embracing the idea that corporate entities must be socially responsible to themselves and particularly, to their immediate operating environment (Setiawati, Sekarningrum & Witono, 2023). Arguably, while the operations and performances of companies are believed to have been affected by the prevailing activities of their immediate environment, the general view of a growing body of literature is that the operations of companies may have also affected and may currently be affecting amongst others, the economy, activities and lifestyles of the people in their respective immediate/operating environment (Abdulrahman, 2014; Ajide & Aderemi, 2014; Ashafoke & Ilaboya, 2017; Duke & Kankpang, 2013; Iwata & Okada, 2011; Ngwakwe, 2008). A firm's financial characteristics include firm size, firm profitability, firm total asset, firm financial leverage, firm total income among others. These characteristics are indices that reveals the financial position and performance of a firm. A firm with a very good performance is more likely to engage in CSR than a firm with a poor performance. The same holds also for firms with a strong financial position relative to firms with a weak financial position.

The problems of an environment in which a firm exists cannot be overlooked by it. Therefore, it becomes very necessary to examine the relationship between social responsibility cost and firm's financial attributes. In its stronger form, the concept of CSR states categorically that corporation has an obligation to consider the interests of customers, employees, shareholders, communities, as well

as the ecological "footprint" in all aspects of their operations [Abiodun, 2012]. According to Drucker (2015), social responsibility requires managers to consider whether their actions are likely to promote the public good, to advance the basic belief of society and to contribute to its stability, strength and harmony. Social responsibility refers to the voluntary efforts on the part of the business to contribute to the social well being and which could in turn make the business better. It could open opportunities for understanding the problems and issues of the society, put the business in the goodwill of the people, help the business attain social power within the society, help a firm to gain maximum profits in the long run among others. However, a number of firms still do not believe that engaging in social responsibility would yield any benefit to it (Drucker 2015). Since social responsibility cost is not a direct cost to the firm, some firms are torn between taking up the social responsibility program or not especially when the associated cost is unduly high. There are some arguments against firm's involvement in social responsibility programs such as the violation of maximization of the profit motive, its side effects on consumers in form of increment in the cost of the firm's products and services, the argument that times are hard and therefore is important for the business to focus on the bottom line in order to survive, as well as the argument that it's the responsibility of the government to deal with social benefit and not the firm.

In line with the above neglect, there have been some resultant consequences such as the potential loss of socially conscious consumers, the risk of losing top talent to companies that prioritize social responsibility strategy et cetera. In some parts of Nigeria for instance, there is evidence of negative consequences on the environment of host communities in several forms: pollution (air and water), oil spillage, environmental degradation, depletion of natural resources, destruction of aquatic lives, deforestation, amongst others (Asuquo, Dada, & Onyeogaziri, 2018; Salaudeen & Abiola, 2018).
On the other hand, a firm's financial characteristics (attributes) such as its' profitability, total sales, total asset, financial leverage etc, goes a long way in determining its' engagement in corporate social responsibility and as such, the cost that'll be involved in its' involvement in CSR programs. When a firm is highly profitable, the likelihood of its' involvement in CSR programs is higher than when it makes little or no profit because with its' increased profit, it has more money in its' disposal. The same goes when a firm experiences increased total sales, a favourable position in its' total asset as well as having its' financing not highly levered or geared.

Several studies have been carried out to determine the relationship between the financial characteristics of a firm and its' involvement in CSR programs such as "the relationship between firms' corporate financial performance and the level of corporate social responsibility among

selected firms in Nigeria" carried out by Uwuigbe and Egbide (2012); "the potential effect of corporate characteristics on the extent of corporate social responsibility" by Giannarakis (2013); "the relationship between firms' qualities and the level of corporate social revelations in the Nigerian non-financial region from 2005 to 2009" carried out by Uwalomwa (2011); "empirical relation between CSR and corporate financial performance in Korea during 2002 to 2008" by Choi et al (2010); "the impact of corporate social responsibility disclosure on the financial performance of firms in UK" carried out by Singh (2014) et cetera. However, none of the previous studies considered the research from the angle of industrial goods firms. Also, considering the time period covered by the previous researchers, none covered up to a 10year period in Nigeria context. Also, Firm Financial Characteristics is considered because so many other previous researches considered Non Financial Characteristics thereby creating a gap of which the present research purports to fill. Thus, it is upon the identification of this gap that this current study which examines the relationship between firm financial characteristics and Social Responsibility cost of listed industrial goods firms in Nigeria from 2012 to 2021 is based.

### 1.1 Objectives of the Study

The general objective of the study is to ascertain the relationship between firm financial characteristics and social responsibility cost of listed industrial goods firms in Nigeria. The specific objectives of the study include:

1. To ascertain the relationship between firm's total sales and public responsibility cost.
2. To determine the relationship between firm's total assets and public responsibility cost.
3. To examine the relationship between firm's financial leverage and public responsibility cost.
4. To investigate the relationship between firm's profitability and public responsibility cost.

### 1.2 Hypotheses

The following null hypotheses guides the study:

a. Firm's total sales have no significant relationship with public responsibility cost.
b. Firm's total assets have no significant relationship with public responsibility cost.
c. Firm's financial leverage has no significant relationship with public responsibility cost.
d. Firm's profitability has no significant relationship with public responsibility cost.

## 2. LITERATURE REVIEW

### 2.1 Conceptual review

#### 2.1.1 Corporate Social Responsibility Cost

Corporate Social Responsibility (CSR) is a management concept whereby companies integrate social and environmental concerns in their business operations and interactions with their stakeholders (Setiawati, Sekarningrum & Witono, 2023). CSR is an essential element in building and maintaining favourable corporate reputation, which is regarded as an important strategic resource factoring into a company's competitive advantage (Hsu & Chen, 2023). Corporate social responsibility is used to describe how businesses implement the broad societal responsibility of going beyond economic criteria. The costs associated with CSR can be measured by identifying the activities associated with CSR, as well as the activities the company was unable to undertake due to engaging in CSR activities (i.e., opportunity costs). The activities associated with CSR can lead to both increased outlays of cash and reductions in cash inflows (Zhao & Peng, 2023). The costs associated with cash contributions include the raw cash flows less the reduction in taxes. Charitable contributions are deductible for tax purposes up to 10% of taxable income before certain adjustments. For product contributions, the outflow would equal product cost (materials + labor + overhead) less any tax benefits. In many instances, the tax deduction equals product cost plus 50% of the lost profit.

Firms also must consider the opportunity costs associated with cash and product donations. For example, if $2 million contribution is made for a CSR activity which could be used for another project that generates a 12% return, then this cost (lost after-tax profit) needs to be considered. For contributions of employees' time, there's really not any tax benefits vis-à-vis the wages paid to employees; wages are deductible for tax purposes regardless of whether employees volunteer their time. When employees volunteer their time, however, there almost certainly is a cost associated with reductions in productivity. It is also possible that organizations hire additional personnel to cover for the lost time and productivity; for every 2,000 hours volunteered, for example, one additional employee may need to be hired. Assuming a positive margin, this would be a less expensive solution to taking the revenue loss. Additional employee costs include those related to having dedicated employees focused on CSR efforts; for example, the costs of employees identifying and coordinating CSR activities and putting press releases and lengthy reports together. The wages paid to these employees certainly should be considered. Finally, ''labor'' costs would include those

related to the use of consulting firms. The recent focus on sustainability has been a boon for advisory-services firms (Xue, Chang & Xu, 2023).

Costs associated with CSR environmental activities can be estimated by comparing the cost of ‘‘green’’ approaches to those of ‘‘traditional’’ approaches (Setiawati, Sekarningrum & Witono, 2023). For example, the cost of making products using recycled raw materials can be compared to similar costs for using new raw materials. The incremental costs of using recycled products may extend throughout the production process, for example, greater scrap or greater labor costs may be associated with the use of recycled materials. We note, however, the costs of environmentally-friendly approaches may actually be lower than those of traditional approaches, resulting in a benefit rather than cost. Organizations must also consider whether their CSR programs have negative effects on customers and employees. For example, many department and grocery stores ask customers to make contributions to charity. Such ‘‘strong-armed’’ solicitations may make customers uneasy and engender negative goodwill, increasing the likelihood that consumers will take their business elsewhere. Whether consumers embrace or shun such programs is an empirical question. Organizations could survey their customers, including whether complaints have increased, or examine sales before and after implementation to assess whether there are gains or losses connected with such programs.

Finally, other costs should be considered, but may be rather difficult to estimate (Zhang, Chen & Jia, 2023). For example, organizations might assess the relation between the size of their contributions to CSR efforts and the benefits received; that is, ‘‘bang for the buck.’’ We posit that the relation between costs and benefits likely is concave, suggesting that returns diminish as the level of CSR increases. In like fashion, organizations should ensure their CSR efforts fit with their missions and product/service offerings (Zhao & Peng, 2023).

### 2.1.2 Firm Financial Characteristics

According to Kogan and Tian (2012) firm financial attributes incorporate firm size, influence, liquidity, deals advancement, asset improvement and turnover. Firm Size has gotten prevailing in precise corporate money mulls over and has been comprehensively settled among the principal factors (Kioko, 2013). Sinthupundaja and Chiadamrong (2015) moreover assert that firm size, improvement and age are viewed as huge firm brand name factors, which are frequently used to decide firm execution. In trial examinations, different makers used different extents of firm qualities in their assessments. The specific measures got to depend upon the possibility of the examination

and in like manner the monetary region being thought about. For example, Meric et al. (2012) in their examination of firm financial attributes of U.S and Japanese used current extent, record of offer turnover, stock turnover, fixed resources turnover, absolute resources turnover, esteem extent, net overall revenue, return on resources, return on worth and yearly deals advancement rate as extents of firm financial qualities. Basically, Fahimeh and Shokat (2015) used firm size, return on esteem, return on resources, esteem income extent, book-market esteem extent, net revenue, productivity and financial influence in their examination of the connection between financial attributes of firms in substantial assembling industry and stock returns in Tehran. Also, Sinthupundaja and Chiadamrong (2015) used a factor of advancement, size, and firm age to examine producing firms' qualities and financial frameworks on the financial execution improvement of firms in Thailand. However, in this study, firm profitability, firm total sales, firm financial leverage and firm total asset would be used as the measure for firm financial characteristics.

### 2.1.3 Firm Profitability

According to Gasparetto (2004) one of the roles of accounting is to produce information on the business performance of a firm which refers to the extent to which a firm is able to accomplish its stated goals and objectives. These stated goals and objectives can be in the area of turnover - which is the actual sales value of a firm, market share which refers to the firm's total percentage of the total business transaction of the industry it belongs, profitability- which refers to the organization's capacity to generate profit and innovation which involves changing or adjusting an existing product into a new product; amongst others (Osisioma, Nnewi & Paul, 2015). Corporate financial performance may be measured from the perspective of monetary values which involves the use of financial-accounting information, and/or from the perspective of non-monetary information, but the most popular measure by which corporate performance is measure in practice is the financial performance measures (Okafor & Oshodin, 2012). Measurement of financial performance can be based on profitability, liquidity, solvency, financial efficiency and repayment capacity (Karagiorgos, 2010). Financial Performance can simply be described as the firm's ability to generate earnings by the efficient and effective utilization of available resources over a given period. It reflects the financial condition and achievement of a firm for a certain period of time (Haryono & Iskandar, 2015). Financial performance is a composite of the firm's financial health and the process of measuring the results and achievement s of an organisation's operations in monetary terms.

Corporate financial performance according to Orlitzky et al. (2003) has been basically measured in three forms: the accounting measurement which expresses an idea of the organisation's internal

efficiency; market measurement which reveals the degree of shareholders' satisfaction; and survey measurements which reflects a kind of subjective estimation of the organization's financial performance. There are two main categories of corporate financial performance measures. The first category of measures is accounting-based measure while the second category is the market-based measure. According to stakeholder theory, economic performance of a firm effects management's decision to behave in a way that may be termed socially responsible. Therefore, when companies are not performing well, economic demand take precedence over social performance. An inverse relation between corporate performance and corporate social responsibility practices is in line with the orthodoxy associated with traditional economic thought that depicts this relation as a trade -off between the firms' profitability and its corporate responsibility (Freedman, 1992). There are two different conceptions regarding a firm's profitability and the tendency to disclose voluntary information. First, more profitable firms are more likely to disclose more while less profitable firms tend to be more secretive. Profitable firms may be more inclined to disclose more information in order to screen themselves from less profitable firms. However, looking at the empirical findings in this regards appears to be mixed between those showing significant relationships between profitability and CSR reporting and those showing insignificant relationships.

### 2.1.4 Firm Total Sales

Sales represent the sales revenue of the firm. It is measured by selling price multiplied by number of unit sold. Total sales therefore include all the sales made within a given period. Here we assume that higher the sales higher the CSR expenditure.

### 2.1.5 Firm Financial Leverage

Financial 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 in order to obtain the capital they require for operating their businesses. Leverage can either be short-term or long-term. Short-term leverage represents funds needed to finance the daily operations of the firm, such as trade receivables, short-term loans and inventory financing. Given that firms with higher leverage levels incur more agency costs (potential wealth transfers from debt-holders to shareholders and managers), they seek to reduce these costs and information asymmetries by disclosing more information to satisfy the needs of creditors for information (Prencipe 2004). Companies with higher level of financial leverage may find it more needful to engage in CSR reporting and tend to disclose the reports than companies with lower level of financial leverage. According to the agency theory, firms with a higher level of financial leverage tend to voluntarily engage in CSR reporting in order to satisfy creditors and

remove the suspicious of wealth transfer to shareholders. However, the empirical findings on the relationship between leverage and CSR reporting have been mixed.

### 2.1.6 Firm Total Asset

Maggina and Tsaklanganos (2012) portray resources (assets) as financial resources of a firm expected to benefit the association's future tasks. Resources of a business undertaking are a vital piece of business activities that work related to various segments of liabilities and worth in the overall business tasks. The specific sorts of resources that a firm will require will depend upon the possibility of its business development like assembling, marketing or organization. There are various techniques for characterizing resources like significant and immaterial, money related and non-financial, current and non-current. Sloan (2004) regardless, assembled resources into, current, non-current and immaterial assets.

Singh and Pandey (2008) characterize non-current resources for incorporate, land, building, plant, apparatus, furniture, fitting, office gear, etc which are not procured with the ultimate objective of marketing, yet for functional reasons. Scott (2003) similarly communicates that non-current resources are those resources that can't be changed over into cash during a period of maintaining a business. In this manner, they are those resources that will benefit the firm for more than one business cycle (a year) and are ordinarily communicated in the decree of the financial situation of firms at true (cost of procurement) less accumulated deterioration. Then again, current resources such as cash/bank holding; stock and customers' owing are seen as vital segments of the company's complete resources. A company's interest in current resources like cash, bank stores, transient assurances, accounts receivables and inventories are called working capital (Padachi, 2006). Current resources in a single trade can be a non-current resource in other businesses. The current, non-current and immaterial or intangible resources of a firm put together are known as total asset.

### 2.1.7 Firm Financial Characteristics and Social Responsibility Cost

Corporate Social Responsibility (CSR) cost has to do with the cost incurred in carrying out a CSR activity. The cost involved can go a long way in determining whether a firm would take up a CSR activity or not. Since CSR is not a direct cost to the company, some firms are torn between whether to take up a CSR activity or not especially when the associated cost is unduly high. Some believe that by engaging in CSR activities, the profit made by the company for the period will be eroded and as such no need to engage in it since it has no direct benefit to the company, while others believe that although the profit of the firm may seem to be eroded and lower profit recorded at the initial

time, it has great benefits to the firm in the long-run and as such must be encouraged and embarked on by the firm.

A firm financial characteristic include firm total asset, firm total sales, firm financial leverage and firm profitability among others but as earlier noted, the ones mentioned above would be the ones that'll be considered in this study. Firm financial characteristics are determinant factors to whether a CSR cost would be incurred or not. These characteristics are indices that reveal the financial position and performance of a firm. A firm with a very good performance is more likely to engage in CSR than a firm with a poor performance. The same holds also for companies with a strong financial position in relation to firms with a weak financial position.

The size of a firm determines the CSR activity that the firm would take up. A firm can not embark on a CSR activity that's bigger than it, otherwise, it may lead to the downfall of the firm. When the associated cost of a CSR activity embarked on by the firm is bigger than the size of the firm embarking on it, it may result to an adverse effect on the firm both in the short-run and in the long-run.

Also, the total sales made by a firm in a given period can as well determine the CSR cost the firm would be willing to incur. If the total sales made for a given period is not enough to cover the associated cost of a CSR activity, and the firm goes ahead to embark on the activity, it'll definitely affect the firm adversely. Similarly, the total asset which are utilized by the firm in adding more value to it, as well determines whether to incur a cost on CSR activity or not. When the total asset owned by the firm is not sufficient enough to add value to the firm that can cover the cost it'll incur in engaging in a given CSR activity, then going ahead with the execution of the CSR activity would yield an adverse effect to it. Would the CSR activity about to be embarked upon erode all the profit made by the firm for a given period leaving it at a deficit or can the activity be embarked upon with the firm still operating at a profit. This is a very important issue to be considered also.

Finally, before engaging on any CSR activity, the firm have to consider the associated cost of the CSR activity as well as determine how to finance the activity, i.e., whether by equity or debt (the firm's financial leverage). You have to consider whether financing by debt would make the firm to become highly levered or not and whether the shareholders would be willing to finance the given CSR activity or not. But whichever decision is made, it must be such that wouldn't affect the firm adversely. In conclusion, it's important to consider a firm's financial characteristics when determining the cost to be incurred in a CSR activity.

## 2.2 Theoretical Review

### 2.2.1 Stakeholder Theory

This research work is anchored on stakeholder theory. This theory, according to Castelo and Liam (2007) holds that companies have a social responsibility that requires them to consider the interests of all parties affected by their actions. Castelo and Liam (2007) point out that the theory is based on the notion that beyond shareholders, there are several stakeholders with an interest in the actions and decisions of companies. The theory affirms that managers need to focus on fulfilling the demands of various stakeholders such as customers, employees, suppliers, and local communities who have the potential to influence or can be influenced by corporations' activities. Stakeholder theory suggests that a company is obligated to answer to a variety of stakeholders including shareholders, suppliers, customers, government agencies, employees and many more (Freeman, 1984). Compliance with such an obligation (or social responsibility) ranges from profit maximization to social awareness and community service (Lantos, 2001). In order words, stakeholder theory suggests that firms, in order to survive and to gain support from stakeholders, need to engage in CSR activities. This theory according to Watts & Zimmerman (1978), assumes that on social and environmental information by an organization is as a result of the pressure from stakeholders such as communities, customers, employees, environment, shareholders and suppliers. The basic proposition of this stakeholder theory is that a firm's success is dependent upon the successful management of all the relationships that a firm has with its stakeholders. The stakeholder theory asserts that corporation's continued existence requires the support of the stakeholders and their approval must be sought and the activities of the corporation adjusted to gain that approval (Chan, 1996). The more powerful the stakeholders, the more the company must adapt.

Previous research which utilized these theories shows that organizations respond to the expectations of stakeholder groups specifically and more generally through the provision of social and environmental information within annual reports and in so doing reveal the legitimization motives underlying such organization's (Mgbame & Ilaboya, 2013). According to stakeholder theory, the economic performance of a firm affects management's decision to engage in Corporate Social Responsibility Reporting. When companies are not performing well, economic demands take precedence over social and environmental responsibility expenditures (Roberts, 1992). Stakeholder theory postulates a positive relationship between economic performance and the level of decision by a company to engage in CSR. This theory concludes that CSR is a way to show a good image to

these stakeholders to boost long term profits because it would help to retain existing customers and attract new ones.

**2.3 Empirical Review**

Toutsoura (2004) analyse the impact of CSR on firm performance in california. They used empirical method for analysing it. They include data set of S&P 500 firms and covers 5 year time period. They found positive and statistical significant relationship between CSR and firm performance.

Another study by Theofanis Karagiorgos (2010) attempted to explore the relationship of CSR and firms' financial performance in Greek firms. Based on stakeholder theory and mainly on the theory of "good management", he tried to find out if an improvement in CSR actions would result in higher stock returns. His empirical analysis tested whether there was an impact of CSR performance on stock returns, using voluntary disclosures, based on a sample of Greek listed companies. The findings showed that there was a positive correlation among stock returns and CSR performance in Greek companies. In operational level, these results aim at persuading managers to implement CSR actions in a greater extent in order to enhance firm market efficiency.

Choi et.al.(2010) studies empirical relation between CSR and corporate financial performance in Korea during 2002-2008. They measure corporate financial performance with ROE, ROA, and Tobin's Q. ROE and ROA could be used as a profitability indicator, while Tobin's Q oftenly used as measurement of firm value. They find positive and significant impact between corporate financial performance and stakeholder-weighted CSR index.

Mulyadi et al.(2010) studies empirical relation between CSR to firm value and profitability in Indonesia in 2010. They examined 30 listed Indonesian corporation. By using double linear regression model and GRI as a measurement of CSR activity, they found no significant relationship between CSR and firm value and same evidence for CSR and profitability.

Uwalomwa (2011) explored the relationship between firms' qualities and the level of corporate social revelations in the Nigerian non-financial region from 2005 to 2009. The free factors of the assessment are firm size, return on resources and size of the audit firm while the dependent variable is corporate social openness. Basic inspecting technique was used to test a sum of 31 firms decided for this assessment subject to their level of market capitalization and direct financing. The picked firms are generally from the assembling space of the Nigeria economy. Content data examination

procedure and scoring plan were used for estimating the level of corporate social exposure in the yearly report. Result demonstrates that a positive affiliation existed between firms' attributes and the level of corporate social revelation. The assessment recommended that standard-setting bodies should set up a corporate social-ecological revealing framework, in solicitation to work all good of corporate social revelations among recorded firms in the country.

Uwuigbe and Egbide (2012) investigated the relationship between firms' corporate financial performance and the level of corporate social responsibility among selected firms in Nigeria. The study also looked at the relationship between firms' financial leverage and the level of corporate social responsibility among selected firms. The annual reports for the period 2008 was utilized and had a sample forty one (41) listed firms. They employed the multiple regression analysis to analyze the data and the result revealed that firm's leverage had a significant negative relationship with the level of corporate social responsibility among selected firms.

Babalola (2012) investigated the impact of corporate social responsibility on firms' profitability in Nigeria. Data were sourced from ten (10) randomly selected firms' annual report and financial summary between "1999-2008". The study made use of correlation, regression, and analysis of variance (ANOVA) to analyze the relationship between the two variables. Findings from the analysis show that the sample firms invested less than ten percent of their annual profit to social responsibility. The data further revealed that all the sample firms invested less than ten percent of their annual profit to social responsibility. However, the Empirical analysis above depicts that negative relationship exists between firm's performance measure with profit after tax and investment in social responsibility which shows that there is inverse relationship between the two variables (PAT and CSR).

Abiodun (2012) studied the relationship between CSR and firm profitability in Nigeria. They used ordinary least square method for data analysis. The result shows a negative relationship between firm profitability (PAT) and CSR. They concluded that profitable organizations in Nigeria do not invest much in CSR activities.

Lucyanda et.al.(2012) examine the influence of firm characteristics toward Corporate Social Responsibility Disclosure. The factors they considered in this research were firm size, firm profitability, firm leverage, board of commissioner size, firm profile, firm age, management ownership, earning per share, environmental concern, and growth opportunities. They select samples from Indonesia stock exchange in 2007-2008. They used multiple regression analysis. They

concluded that firm size, firm profitability, firm profile, earning per share, and environmental concern have an influence toward the Corporate Social Responsibility Disclosure. The research also found that leverage, board of commissioner size, firm profile, firm age, management ownership, and growth opportunities have no influence toward the Corporate Social Responsibility.

Farouk (2013) used financial and non-financial factors to examine their impact on Banks corporate social responsibility. Multiple regression techniques were adopted by the study and data were collected through the annual reports and accounts of the sampled Greek companies for the period 2005 to 2011. The result indicated that firm leverage was positively and significantly determined corporate social responsibility.

Similarly, Giannarakis (2013) aimed to increase understanding of the potential effects of corporate characteristics on the extent of corporate social responsibility in Ethiopia. The study's sample consisted of companies from the Fortune list for the year 2011 as they are more likely to disclose corporate social responsibility information. The environmental, social, and governance scores are introduced in order to determine the extent of corporate social responsibility. The results based on the multiple regression models indicated that the financial leverage is negatively related with corporate social responsibility.

Zaid (2013) considered the impact of firm qualities all well and the good of corporate social duty (CSR) announced in Parkistan from 2013-2016. An aggregate of 33 nonfinancial firms recorded in Parkistan Stock Exchange was picked for the examination. Auxiliary data for the period 2013 to 2016 were accumulated from the tried firms. Board data relapse assessment was applied to the data to test the relationship between firm attributes and the level of CSR disclosure. Discoveries from the examination suggest that firm attributes, specifically, firm size, productivity, firm age, have a positive and quantifiably enormous relationship with CSR divulgence.

Istianingsih, M.S.Ak. (2013) researched empirical evidence about the determinants of disclosure of corporate social responsibility (CSR). They studied firm characteristics like Good corporate governance, profitability, financial leverage, firm size, foreign ownership, and firm profiles. Samples which were considered in this paper were of manufacturing companies listed on the Indonesia Stock Exchange in 2008-2010. For hypothesis testing, they used multiple regression models. They concluded that firm size and profile of the firm evidenced a significant impact on CSR

disclosure. While good corporate governance, profitability, leverage, and foreign ownership did not prove significant effect on CSR disclosure.

Swati Chauhan (2014) study proposed to analyse the impact of Firm characteristics toward Corporate Social Responsibility expenditure in India. The variables used in this research are size of firm, firm profitability, firm leverage, and sales of the firm. The populations are all firm BSE 30 index in 2007-2012 periods. The analysis methods are using multiple regression analysis. The research found that firm size, firm profitability, firm sales, have an influence toward the Corporate Social Responsibility expenditure, while firm leverage have no influence toward the Corporate Social Responsibility expenditure.

Singh (2014) examined the impact of corporate social responsibility disclosure on the financial performance of firms in UK. The work covered three industries of UK, viz., industry of extraction of crude petroleum and natural gas, industry of mining of metal ores and preparations and industry of manufacture of basic pharmaceutical products and pharmaceutical preparations. The study measured corporate social responsibility disclosure in terms of published CSR keywords on the annual reports of the firms over five years ranging from 2008 till 2012. The financial performance of the firms is measured as return on assets (ROA), Tobin's Q, and total shareholder returns (TSR). A linear regression is then performed on the data to validate the impact of corporate social responsibility disclosure on the financial performance of firms. The results have shown no significant impact of CSR disclosure on the financial performance, both in short-term scenario and long-term scenario for the chosen industries in UK.

Hassan (2014) led an assessment to research the impact of firm attributes on the risk exposure nature of Egyptian firms. Utilizing an illustration of the Egyptian recorded firms for the period of 2006-2010 (comprises of 135 perceptions), the study found that there is an improvement in all models of peril openness quality, and the risk data is significant and justifiable mostly, yet it is less same and certain. For hypothesis testing, they used multiple regression models. Delayed consequences of the real assessment moreover show that the firm size and influence level are the fundamental determinants of the risk divulgence quality.

Akbaş (2014) investigated the relationship between company characteristics and the extent of the corporate social and environmental of Turkish companies. The sample of the study consisted of sixty two (62) non-financial firms listed on the BIST-100 index at the end of 2011. For the study to

measure the extent of corporate social and environmental, the annual reports of sampled firms for the year of 2011 were analysed through content analysis. The study used regression method to analyse the data and the result indicated that company leverage was significantly related to the extent of environmental.

Novrianty, and Ely (2015) examined the effect of corporate social responsibility on financial performance. This study was conducted to examine the effect of CSR on financial performance as measured by profitability ratios consisting of return on assets (ROA), return on equity (ROE), net profit margin (NPM) and earnings per share (EPS). The population used in this study was the company mining and basic industry chemicals listed in Indonesia stock exchange during the period 2009-2012, while the sample used in this study using purposive sampling technique. 24 companies were sampled. This study used a quantitative approach and the method of multiple linear regression analysis of the data. The results of this study indicate that simultaneous CSR and control variables consisting of leverage (DER) and size has effect on ROA, ROE, NPM and EPS. CSR has partially significant effect on ROA and NPM and no significant effect on ROE and EPS.

Yitbarek (2015) study explored and tested the relationship between financial performance and social responsibility activities undertaken by private manufacturing firms in Tigray Regional State, Ethiopia. He used survey instruments to collect data from 34 firms over a period of three years. Then, using empirical methods he tested the hypothesis of the direction of the relationship between CSR and CFP. Findings indicate that CSR is positively related to better financial performance, as represented by ROA, ROE, and ROS. This relationship is statistically significant at the $p<0.01$ level of significance, supporting the view that socially responsible firm performance can be attached with achieving higher financial benefits. Hence, firms should recognize and instill CSR initiatives into their corporate culture and business operations because increases in CSR investments can lead to higher CFP while balancing the needs of their internal and external stakeholders.

Bidari (2016) examined the extent of corporate social responsibility made by Nepalese banks in their annual reports based on GRI G4 guidelines. Also the study examined the relationships between the influencing factors (i.e. bank size, bank age, bank's profitability and ownership structure) and the corporate social responsibility levels (i.e., economic, social, environmental and the overall corporate social responsibility). The study selected a sample of eighty two (82) from the Nepal Stock Exchange for the year 2014 and employed a content analysis and multiple regression analysis tools to test the developed hypothesis. The study found that bank age was positively related to the extent

of social and environmental, but it was an insignificant predictor to the extent of economic and the overall corporate social responsibility.

Ohidoa, et al. (2016) investigated the determinants of corporate social and environmental in Nigeria. The study obtained historical data from the financial statements and account of firms in the manufacturing and financial sectors listed in the Nigeria Stock Exchange. The study employed the Binary logistic panel data regression and result revealed that financial has no significant relationship with environmental.

Alodia and Atmadja (2018) inspected the impact of firm attributes and corporate organization on corporate social obligation and future firm execution. The free factors are firm-unequivocal qualities (productivity, influence, and size) and corporate organization (load upsize, load up autonomy, women directorate, and survey boards) Also the impact of CSR execution on the future execution of firms in the accompanying 1-3 time spans by mining region associations recorded on the Indonesia Stock Exchange in 2008-2017 was inspected. Standard Least Square (OLS) relapse with the sort of board data was used to separate the data assembled for the assessment. Results demonstrate that productivity, size, board size, board freedom, and women of the board are not related to CSR execution in the mining associations. Regardless, influence and audit sheets impact CSR execution in mining associations. CSR execution impacts future firm execution during the first period after the CSR execution of mining firms.

Yousra (2018) led an examination to evaluate the consequence of a couple of entity attributes on environmental information revelation of recorded firms in Egypt from 2007 to 2011. In solicitation to do the assessment, 45 most unique firms recorded in the Egyptian Stock Exchange were picked for the examination. Optional data covering the hour of the examination were assembled from the inspected firms. Distinctive relapse assessment was applied on the assembled data to test the invalid speculations figured. It was seen after the assessment that there is an unimportant connection uniting two components of organizations' qualities (Company Size and Financial Leverage) and Environmental Information Disclosure.

Kartiningsih (2020) inspected the impact of firm attributes on the benefit of food and drinks firms recorded in Indonesia from 2014 to 2018. Firm attributes were proxied by firm age, firm size, liquidity, and influence while benefit was proxied with return on deals. The assessment assigned all of the 12 food assortments and refreshment firms recorded in the Indonesia Stock Exchange during

the period. Optional data were assembled from the organizations covering the period and researched utilizing realistic bits of knowledge and various relapse assessments. For hypothesis testing, they used multiple regression models. The result of the assessment suggests that firm age, firm size, liquidity, and influence have a basic and valuable result on the productivity of the organizations. In the context of this, it was recommended that the organizations should keep up with their resources, commitment resources, and all resources adequately and capably by utilizing experience staff that is data and all-around gifted with capacities to gain benefits for the organizations.

Simona and Veronika (2020) analyzed the connection between firm qualities like entity periods of existence, magnitude, entity execution, plus sexual direction assortment of sheets including the utilization of a corporate civic duty idea in the Czech haulage and capacity sector. Statistics from Albertina's informational index and trade documentary were used for the assessment while Pearson's and Spearman's connection coefficient plus relapse examination were used to separate the data. Results from the examination suggest a quantifiably enormous connection linking firm magnitude, entity accounting execution, including the CSR tradition of businesses. Then again, firm age and sexual direction assortment of sheets are not the segments affecting CSR practice of the organizations.

## 3. MATERIAL AND METHOD

The study adopted Ex-post facto research design. Ex-post facto research design is a design used to investigate possible relationships between variables by observing an existing condition or state of affairs and searching back in time for plausible causal factors. The population of the study was made up of all the thirteen (13) listed industrial goods firms on the Nigerian Exchange as at 31st December 2021. Industrial goods sector of the Nigerian Exchange is constituted by the under-listed 13 firms:

Table 1 Population of the Study

| | |
|---|---|
| **1.** | Austin Laz & Company Plc. |
| **2.** | Berger Paints Plc. |
| **3.** | Beta Glass Plc. |
| **4.** | Bua Cement Plc. |
| **5.** | Cap Plc. |
| **6.** | Cutix Plc. |
| **7.** | Dangote Cement Plc. |
| **8.** | Greif Nigeria Plc. |
| **9.** | Lafarge Africa Plc. |

| | |
|---|---|
| **10.** | Meyer Plc. |
| **11.** | Notore Chemical Ind. Plc. |
| **12.** | Premier Paints Plc. |
| **13.** | Tripple Gee And Company Plc. |

Source: Nigerian Exchange Group (2022)

The sample size of the study was selected using purposive sampling method. Purposive (judgemental) sampling is a non-probability technique used to pick items with the required characteristics (Kothari & Gaurav, 2014). From the sampling frame of 13 listed firms, a sample size of 11 firms was purposively selected on one basis. The basis is that the firms selected must have been listed from 2012 to 2021. BUA cement Plc. and Notore Chemical Ind. Plc. will be excluded from the study because they were listed in 2020 and 2018, respectively. Therefore, the eleven constituents of the sample size are shown in Table 2 below.

Table 2: Sample Size of the Study

| | |
|---|---|
| **1** | Austin Laz & Company Plc. |
| **2** | Berger Paints Plc. |
| **3** | Beta Glass Plc. |
| **4** | Cap Plc. |
| **5** | Cutix Plc. |
| **6** | Dangote Cement Plc. |
| **7** | Greif Nigeria Plc. |
| **8** | Lafarge Africa Plc. |
| **9** | Meyer Plc. |
| **10** | Premier Paints Plc. |
| **11** | Tripple Gee And Company Plc. |

Source: Researcher's Compilation, 2022

This study used secondary data which were obtained from the annual financial statements of the selected industrial goods firms. The secondary data collected focused on expenditure on corporate social responsibility, firm profitability, firm sales, financial leverage and firm assets together with firm age as the control variable. The data collected covered a period of 10 years (2012-2021) in order to give sufficient information for the study. The study made use of secondary data due to the high level of reliability obtainable from the use of quantitative data. Descriptive statistical analysis was used to show the summary of variable measurements which shall be presented in terms of

central tendency, variability (dispersion) and symmetry (normality). Central tendency measures include the mode, mean and median. Variability is expressed in terms of range, variance, minimum values, maximum values and standard deviation, while symmetry is denoted by skewness and kurtosis (Kothari & Gaurav, 2014). Skewness and kurtosis was used to measure the normality of the distribution. Normality test was conducted as it is one of the key assumptions that must be fulfilled for parametric tests such as linear regression analysis to be carried out (Saunders, Lewis, & Thornhill, 2012). If the skewness is within ±1 and kurtosis is within ±2, the data is considered normally distributed (Ching et al., 2015). The technique of inferential analysis that was used in this study was multivariate regression analysis in form of Pooled Ordinary Least Square. Various tests were conducted such as multicollinearity test, normality test, and heteroscedasticity test. The choice of this technique is based on the fact that it allows the study of individual dynamics (e.g. separating cohort effects).

In order to examine the relationship between firm financial characteristics and social responsibility cost, a multiple linear regression model built by Abdu (2016) was adapted and modified. The model captured the impacts of firm profitability, financial leverage, Firm Size, Economic Value Added and Institutional Ownership on CSR thus:

$CSR_{it} = \alpha_{it} + \beta_1 ROA_{it} + \beta_2 LEV_{it} + \beta_3 FSIZE_{it} + \beta_4 EVA_{it} + \beta_5 INOS_{it} + \varepsilon_{it}$ ----------equation I

The above equation (I) was modified to reflect the following variables: firm profitability, firm sales, financial leverage and firm assets together with firm age as the control variable. Therefore, the modified model used in carrying out the regression analysis of the study is:

$PRC_{it} = \alpha_0 + \beta_1 PROF_{it} + \beta_2 SALE_{it} + \beta_3 LEV_{it} + \beta_4 ASS_{it} + \beta_5 AGE_{it} + \varepsilon_{it}$----------equation II

Where,

$PRC_{it}$ = Public Responsibility Cost for firm i in period t.

$PROF_{it}$ = Firm Profitability for firm i in period t.

$SALE_{it}$ = Total Firm Sales for firm i in period t.

$LEV_{it}$ = Firm Financial Leverage for firm i in period t.

$ASS_{it}$ = Total Firm's Assets for firm i in period t.

$AGE_{it}$ = Firm's Age for firm i in period t

$\varepsilon_{it}$ = error term for firm i in period t.

$\alpha_0$ = constant.

$\beta_{1\text{-}5}$ = coefficients of the predictors

The variables were measured using the formula in Table 3.

Table 3 Operationalization of Independent Variable

| Variable | Proxy | Formula |
|---|---|---|
| **Public Responsibility Cost** | Donations | Total Expenditure on Donations |
| **Firm Profitability** | Return on Assets | $\frac{Earnings\ After\ Tax}{Total\ Assets}$ |
| **Total Firm Sales** | Revenue | Natural Log of total revenue |
| **Firm Financial Leverage** | Debt Asset Ratio | $\frac{Total\ Liabilities}{Total\ Assets}$ |
| **Total Firm's Assets** | Assets | Natural Log of total assets |
| **Firm's Age** | Firm Age | Number of Years the firm has existed |

Researcher's Compilation, 2023

## 4. RESULT AND DISCUSSIONS

### 4.1 Data Analysis

4.1.1 Descriptive Analysis of Data

Descriptive statistical analysis will be used to show the summary of variable measurements which shall be presented in terms of central tendency, variability (dispersion) and symmetry (normality). The descriptive statistics are presented in Table 4 below.

Table 4 Descriptive Analysis of Data

| | PRC | DONATIONS | SALE | PROF | LEV | ASS | AGE |
|---|---|---|---|---|---|---|---|
| Mean | 2.478150 | 798769.9 | 6.406018 | 0.059530 | 0.527110 | 6.812659 | 46.12727 |
| Median | 2.324667 | 211.5000 | 6.407879 | 0.058304 | 0.439643 | 6.454658 | 42.50000 |
| Maximum | 7.284769 | 19265000 | 8.997124 | 1.088969 | 2.229656 | 9.412006 | 81.00000 |
| Minimum | 0.000000 | 0.000000 | 0.000000 | -1.799173 | 0.032253 | 5.239405 | 20.00000 |
| Std. Dev. | 2.569330 | 2662977. | 1.618093 | 0.250044 | 0.365535 | 1.117915 | 14.74064 |
| Skewness | 0.422029 | 5.112845 | -1.940511 | -3.099038 | 2.275388 | 0.927332 | 0.482291 |
| Kurtosis | 1.648629 | 31.63153 | 9.664515 | 31.68128 | 9.762724 | 2.799788 | 2.528061 |
| Jarque-Bera | 11.63542 | 4236.510 | 272.6079 | 3946.397 | 304.5350 | 15.94938 | 5.285254 |
| Probability | 0.002974 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000344 | 0.071174 |
| Sum | 272.5965 | 87864688 | 704.6619 | 6.548273 | 57.98213 | 749.3925 | 5074.000 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sum Sq. Dev. | 719.5585 | 7.73E+14 | 285.3864 | 6.814889 | 14.56412 | 136.2211 | 23684.22 |
| Observations | 110 | 110 | 110 | 110 | 110 | 110 | 110 |

*Source: Processed Data Using Eviews 12*

The mean of Public Responsibility Cost (PRC) is 2.48 and the median is 2.32. The maximum value is 7.28, the minimum is 0 and the standard deviation is 2.57. The skewness is 0.42 and kurtosis is 1.65. The Jarque-Bera test has a probability of 0.0030 and the sum of the variable is 272.60. PRC has a positive skewness and kurtosis greater than zero, indicating a right-skewed and peaked distribution. The Jarque-Bera test result (probability of 0.0030) suggests that the data does not follow a normal distribution.

The mean of Donations is 798,769.90 and the median is 211.50. The maximum value is 19,265,000, the minimum is 0, and the standard deviation is 2,662,977. The skewness is 5.11 and kurtosis is 31.63. The Jarque-Bera test has a probability of 0.00 and the sum of the variable is 87,864,688. Donation has a very high positive skewness and kurtosis, indicating a highly right-skewed and peaked distribution. The Jarque-Bera test result (probability of 0.00) confirms that the data does not follow a normal distribution. The mean of Firm's Total Sale is 6.41 and the median is 6.41. The maximum value is 8.99, the minimum is 0, and the standard deviation is 1.62. The skewness is -1.94 and kurtosis is 9.66. The Jarque-Bera test has a probability of 0.00 and the sum of the variable is 704.66. Sale has a negative skewness and kurtosis greater than zero, indicating a left-skewed and peaked distribution. The Jarque-Bera test result (probability of 0.00) confirms that the data does not follow a normal distribution.

The mean of Firm Profitability (PROF) is 0.06 and the median is 0.06. The maximum value is 1.09, the minimum is -1.80, and the standard deviation is 0.25. The skewness is -3.10 and kurtosis is 31.68. The Jarque-Bera test has a probability of 0.00 and the sum of the variable is 6.55. PROF has a highly negative skewness and high kurtosis, indicating a highly left-skewed and peaked distribution. The Jarque-Bera test result (probability of 0.00) confirms that the data does not follow a normal distribution.

Financial leverage (LEV) averaged 0.53 and the median is 0.44. The maximum value is 2.23, the minimum is 0.03, and the standard deviation is 0.37. The skewness is 2.28 and kurtosis is 9.76. The Jarque-Bera test has a probability of 0.00 and the sum of the variable is 58.00. LEV has a positive skewness and kurtosis greater than zero, indicating a right-skewed and peaked distribution. The Jarque-Bera test result (probability of 0.00) confirms that the data does not follow a normal distribution. The mean of firm total assets (ASS) is 6.81 and the median is 6.45. The maximum

value is 9.41, the minimum is 5.24, and the standard deviation is 1.12. The skewness is 0.93 and kurtosis is 2.80. The Jarque-Bera test has a probability of 0.0003 and the sum of the variable is 749.39. ASS has a positive skewness and kurtosis less than zero, indicating a right-skewed but flat distribution. The Jarque-Bera test result (probability of 0.0003) suggests that the data does not follow a normal distribution.

Firm Age has a mean of 46.13 and the median is 42.50. The maximum value is 81, the minimum is 20, and the standard deviation is 14.74. The skewness is 0.48 and kurtosis is 2.53. The Jarque-Bera test has a probability of 0.07 and the sum of the variable is 5074. AGE has a positive skewness and kurtosis greater than zero, indicating a right-skewed and peaked distribution. The Jarque-Bera test result (probability of 0.07) suggests that the data might follow a normal distribution.

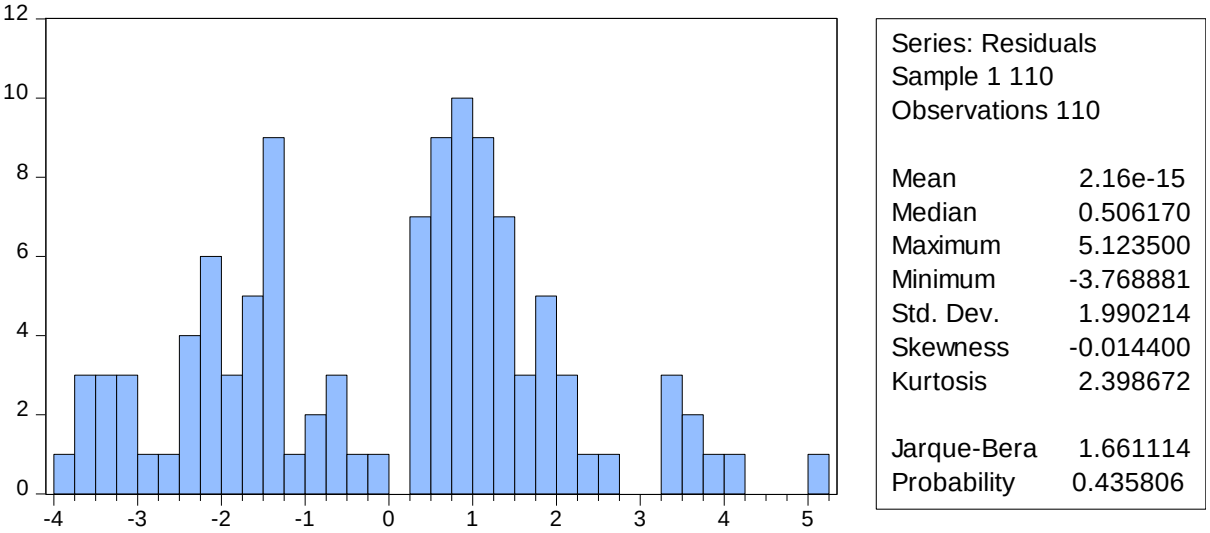
### 4.1.1 Model Diagnostics

Regression diagnostic tests were conducted to check for the assumptions of multicollinearity, normality, and heteroscedasticity. The essence of the diagnostic tests was to assess the quality and validity of the regression model, by evaluating its various assumptions and evaluating the goodness of fit between the model and the data. These tests can help detect issues such as outliers, co-linearity, and non-constant variance of residuals, among others, and guide in model improvement. Ultimately, the goal of regression model diagnostics is to ensure that the model accurately represents the relationships between the variables and can be used to make reliable predictions on new data.

### 4..1.2 Multicollinearity Test

Multicollinearity test is a statistical analysis that assesses the correlation between multiple independent variables in a regression model. The test is used to determine if there is a strong relationship between the independent variables, which can impact the interpretation of the regression results and cause problems such as unstable coefficient estimates, incorrect hypothesis tests, and incorrect predictions. Multicollinearity in the study was assessed through the Variance Inflation Factor (VIF) as shown in Table 5.

Chart 1 Jarque-Bera Test




*Source: Processed Data Using Eviews 1*

The Jarque-Bera test statistic in chart 1 above returned 1.661114 with a corresponding probability value of 0.435806. Since the probability value is greater than 0.05, the conclusion is that the residuals did not deviate from the characteristics of a normal distribution.

### 4.1.3 Heteroskedasticity Test

Heteroskedasticity describes non-constant variance in the residuals of a regression model. Heteroskedasticity is a violation of the assumption of homoscedasticity, which states that the variance of the residuals should be constant across all levels of the independent variable(s). A regression model that suffers from heteroskedasticity cannot be used to make a reliable statistical inference. As a result, Breusch-Pagan-Godfrey was used to assess the whether there is heteroskedasticity in the model.

Table 6 Heteroskedasticity Test: Breusch-Pagan-Godfrey

| | | | |
|---|---|---|---|
| F-statistic | 2.188039 | Prob. F(5,104) | 0.0611 |
| Obs*R-squared | 10.46998 | Prob. Chi-Square(5) | 0.0630 |
| Scaled explained SS | 6.545049 | Prob. Chi-Square(5) | 0.2567 |

*Source: Processed Data Using Eviews 12*

The Breusch-Pagan-Godfrey (BPG) test was used to test for heteroskedasticity in the regression model. The F-statistic is 2.19 and the probability associated with it (Prob. F(5,104)) is 0.0611. This indicates that there is a 6.11% chance of observing an F-statistic as large as or larger than the calculated value, assuming that the null hypothesis of homoscedasticity (constant variance) is true. Similarly, the ObsR-squared is 10.47 and the probability associated with it (Prob. Chi-Square(5)) is 0.0630. This means that there is a 6.30% chance of observing an ObsR-squared as large as or larger than the calculated value, assuming that the null hypothesis of homoscedasticity is true. The Scaled explained SS is 6.55 and the probability associated with it (Prob. Chi-Square (5)) is 0.2567. This indicates that there is a 25.67% chance of observing a Scaled explained SS as large as or larger than the calculated value, assuming that the null hypothesis of homoscedasticity is true. A common practice is to consider a significance level of 5% for the test. Based on the results, the null hypothesis of homoscedasticity cannot be rejected at a significance level of 5%. This means that there is not enough evidence to conclude that the residuals have non-constant variance, and therefore the assumption of homoscedasticity is satisfied.

### 4.2. Test of Hypotheses

The study deployed Pooled Ordinary Least Squares in estimating the under-stated model:

$PRC_{it} = \alpha 0 + \beta 1PROF_{it} + \beta 2SALE_{it} + \beta 3LEV_{it} + \beta 4ASS_{it} + \beta 5AGE_{it} + \varepsilon_{it}$

The output of the Pooled OLS regression is shown in Table 7.

Table 7 Pooled Least Squares Regression
Dependent Variable: PRC
Method: Pooled Least Squares
Date: 02/08/23 Time: 05:05
Sample: 1 110
Included observations: 110
Cross-sections included: 1
Total pool (balanced) observations: 110

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -7.611583 | 1.755842 | -4.335005 | 0.0000 |
| SALE | 0.322045 | 0.186407 | 1.727644 | 0.0870 |
| ASS | 1.025267 | 0.294889 | 3.476788 | 0.0007 |
| LEV | 0.823169 | 0.667013 | 1.234112 | 0.2199 |
| PROF | 2.045239 | 0.886615 | 2.306795 | 0.0230 |
| AGE | 0.010542 | 0.013691 | 0.769997 | 0.4430 |

| | | | |
|---|---|---|---|
| R-squared | 0.399988 | Mean dependent var | 2.478150 |
| Adjusted R-squared | 0.371141 | S.D. dependent var | 2.569330 |
| S.E. of regression | 2.037495 | Akaike info criterion | 4.314320 |

| | | | |
|---|---|---|---|
| Sum squared resid | 431.7439 | Schwarz criterion | 4.461619 |
| Log likelihood | -231.2876 | Hannan-Quinn criter. | 4.374066 |
| F-statistic | 13.86596 | Durbin-Watson stat | 0.919251 |
| Prob(F-statistic) | 0.000000 | | |

Source: Processed Data Using Eviews 12

The regression result in Table 7 revealed the relationship between firm financial characteristics and social responsibility cost of listed industrial goods firms in Nigeria. The R-squared measures the proportion of variation in the dependent variable that is explained by the independent variables. The adjusted R-squared adjusts the R-squared for the number of independent variables. The F-statistic tests the overall significance of the regression model. The Prob(F-statistic) is the p-value for the F-statistic, which indicates the likelihood of observing the F-statistic assuming that the null hypothesis is true. Since the R-squared = 0.399988, the regression model explains 40% of the variation in the Public Responsibility Cost (PRC) and is statistically significant (Prob(F-statistic) = 0.000000). The control variable, Firm Age, has a positive relationship with PRC, but the coefficient is not statistically significant with a p-value of 0.4430.

**4.2.1 Test of Hypothesis I**

1. Firm total sales have no significant relationship with public responsibility cost of listed industrial goods firms in Nigeria.

The coefficient value of 0.322045 shows that sale has a positive relationship with public responsibility cost. Thus, an increase in Sale by 1 unit will increase PRC by 0.322045. However, the coefficient is not statistically significant with a p-value of 0.0870 and when the p-value is greater than or equal to 5% level of significance, the null hypothesis will be accepted while the alternate hypothesis will be rejected in line with the decision rule. Thus, the null hypothesis was accepted while the alternate hypothesis was rejected at 5% significance level. In conclusion, Firm total sales have no significant positive relationship with public responsibility cost of listed industrial goods firms in Nigeria ($\beta$ = 0.322045, p-value = 0.0870). Firm total sales have no significant positive relationship with corporate social responsibility of listed industrial goods firms in Nigeria: This result indicates that the amount of sales a firm generates does not have a significant impact on the level of corporate social responsibility they undertake. This could be because the size of a firm's sales does not necessarily dictate the resources they have available to invest in social responsibility initiatives. This did not support the result by Chauhan (2014) that found a significant relationship between total sales and CSR in India.

### 4.2.2 Test of Hypothesis II

2. Firm total assets have no significant relationship with public responsibility cost of listed industrial goods firms in Nigeria.

The coefficient value of 1.025267 shows that ASS has a positive relationship with public responsibility cost. Thus, an increase in ASS by 1 unit will increase PRC by 1.025267. The coefficient is statistically significant with a p-value of 0.0007 and when the p-value is greater than or equal to 5% level of significance, the null hypothesis will be accepted while the alternate hypothesis will be rejected in line with the decision rule. Thus, the null hypothesis was rejected while the alternate hypothesis was accepted at 5% significance level. In conclusion, Firm total assets have a significant positive relationship with public responsibility cost of listed industrial goods firms in Nigeria ($\beta = 1.025267$, p-value = 0.0007). Firm total assets have a significant positive relationship with corporate social responsibility of listed industrial goods firms in Nigeria: This finding suggests that larger firms, as measured by their total assets, tend to have a greater level of corporate social responsibility. This could be due to the fact that larger firms typically have more resources available to invest in social responsibility initiatives. Choi et al. (2010); Hassan (2014); Chauhan (2014); and Istianingsih (2013) realised the same results in their studies.

### 4.2.3 Test of Hypotheses III

3. Firm financial leverage have no significant relationship with public responsibility cost of listed industrial goods firms in Nigeria.

The coefficient value of 0.823169 shows that LEV has a positive relationship with public responsibility cost. Thus, an increase in LEV by 1 unit will increase PRC by 0.823169. However, the coefficient is not statistically significant with a p-value of 0.2199 and when the p-value is greater than or equal to 5% level of significance, the null hypothesis will be accepted while the alternate hypothesis will be rejected in line with the decision rule. Thus, the null hypothesis was accepted while the alternate hypothesis was rejected at 5% significance level. In conclusion, Firm financial leverage has no significant positive relationship with public responsibility cost of listed industrial goods firms in Nigeria ($\beta = 0.823169$, p-value = 0.2199). Firm financial leverage has no significant positive relationship with corporate social responsibility of listed industrial goods firms in Nigeria: This result indicates that the use of debt by a firm does not have a significant impact on their level of corporate social responsibility. This could be because the use of debt is not necessarily an indicator of a firm's commitment to social responsibility. This finding negated the results found by Akbas (2014) but agreed with the study by Chauhan (2014).

### 4.2.4 Test of Hypotheses IV

Firm profitability have no significant relationship with public responsibility cost of listed industrial goods firms in Nigeria.

The coefficient value of 2.045239 shows that PROF has a positive relationship with public responsibility cost. Thus, an increase in PROF by 1 unit will increase PRC by 2.045239. The coefficient is statistically significant with a p-value of 0.0230 and when the p-value is greater than or equal to 5% level of significance, the null hypothesis will be accepted while the alternate hypothesis will be rejected in line with the decision rule. Thus, the null hypothesis was rejected while the alternate hypothesis was accepted at 5% significance level. In conclusion, Firm profitability has a significant positive relationship with public responsibility cost of listed industrial goods firms in Nigeria ($\beta$ = 2.045239, p-value = 0.0230). Firm profitability has a significant positive relationship with corporate social responsibility of listed industrial goods firms in Nigeria: This finding suggests that more profitable firms tend to have a higher level of corporate social responsibility. This could be because more profitable firms have a greater ability to invest in social responsibility initiatives and are therefore expected to contribute more to society. This agrees with the findings of Chauhan (2014); Ohidoa et al. (2016); Istianingsih (2013); Yitbarek (2015)

## CONCLUSION AND RECOMMENDATIONS

The results of the study on the relationship between the corporate social responsibility of listed industrial goods firms in Nigeria and their total sales, total assets, financial leverage, and profitability provide some interesting insights. The findings show that while the amount of sales made by a firm does not have a significant impact on their level of corporate social responsibility, larger firms with more assets tend to have a greater level of social responsibility. Additionally, the use of debt by a firm does not appear to have a significant impact on their social responsibility, while more profitable firms tend to have a higher level of social responsibility. The results suggest that a firm's size, as measured by its total assets, is positively related to its level of corporate social responsibility. This could be due to the fact that larger firms typically have more resources available to invest in social responsibility initiatives, and as a result, are expected to contribute more to society. The finding that the use of debt does not have a significant impact on corporate social responsibility is also noteworthy, as it indicates that the use of debt is not necessarily a reflection of a firm's level of social responsibility. Finally, the finding 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. This highlights the importance of profitability in determining a firm's level of corporate social responsibility. In conclusion, the results of the study provide valuable insights into the relationship between corporate social responsibility and various financial metrics in the context of listed industrial goods firms in Nigeria. These findings can inform both firms and policymakers as they consider the role of firms in contributing to society and the impact of financial metrics on a firm's level of corporate social responsibility. The study recommends the following:

1. Policy makers should use incentives such as tax breaks or other financial benefits to encourage larger firms to invest in corporate social responsibility initiatives.
2. Managers of highly-profitable firms should map out a substantial amount of their earnings after tax to dedicate to corporate social responsibility.
3. Shareholders in industrial goods firms in Nigeria should foster a culture of corporate social responsibility among firms through the creation of legal frameworks, the provision of training and education of the managers.
4. Support should be provided to smaller firms to invest in corporate social responsibility initiatives. While the results of the study indicate that larger firms tend to have a greater level of corporate social responsibility, it is important to support smaller firms in their efforts to invest in social responsibility initiatives. This could be achieved through the provision of grants or other forms of financial support.

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