

## **Sustainability in Nigeria's Manufacturing Sector: The influence of Corporate Social Responsibilities**

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### **Abstract**

This study investigates the Corporate Social Responsibility (CSR) and Sustainability of listed manufacturing firms in Nigeria, employing an ex-post facto research design. The research utilizes secondary data sourced from audited annual financial statements of seven selected listed manufacturing firms, covering the period from 2015 to 2023. A purposive sampling technique was used to ensure the inclusion of companies with complete data, and panel regression analysis was conducted using Valustat software to examine the relationship between CSR and the Sustainability of listed manufacturing firms in Nigeria. The results reveal a statistically significant positive relationship between CSR expenditures and Sustainability, with an unstandardized coefficient of 0.907, The model's R-Square value is 0.124, suggesting that CSR explains 12.4% of the variation in Sustainability, while the Adjusted R-Square value of 0.110 confirms the robustness of the findings. The ANOVA results support the model's significance, with an F-statistic of 8.509 ( $p = 0.005$ ). These findings highlight CSR's role as a mitigating factor against Sustainability problems, emphasizing its importance in corporate strategy within the manufacturing firms sector. The study concludes that integrating CSR initiatives can enhance financial performance and stakeholder trust, and it recommends further research to explore the broader dimensions of CSR and its long-term impacts on Sustainability.

**Keywords:** Corporate Social Responsibility; Sustainability; Manufacturing firm; Stakeholder trust; Financial Stability; Sustainable Development Goals.

## **1.0 Introduction**

The concept of Sustainability has garnered significant attention in both theoretical and empirical research, particularly in the context of corporate finance. Sustainability refers to the practice of meeting current needs without compromising the ability of future generations to meet their own needs. It involves maintaining a balance between economic growth, environmental protection, and social well-being. In other words, it aims to create systems and practices that are environmentally responsible, economically viable, and socially inclusive over the long term. This includes considerations like reducing resource consumption, minimizing waste, protecting ecosystems, ensuring fair labor practices, and promoting social equity. One prominent measure of Sustainability is the Altman Z-score, which assesses a company's likelihood of bankruptcy based on its financial health. This metric has been extensively utilized in studies across developed countries, where it has been shown to effectively predict Sustainability problems and inform investment decisions (Listiadi, 2023). For instance, research indicates that companies with lower Z-scores are at a higher risk of financial failure, thereby influencing investor behavior and corporate governance strategies (Liu et al., 2020)

In developing countries, the understanding of Sustainability problems has evolved, with scholars emphasizing the unique economic and regulatory environments that shape corporate performance. Studies have highlighted that Sustainability problems in these contexts is often exacerbated by factors such as political instability, currency fluctuations, and inadequate regulatory frameworks (Lii et al., 2022). In Nigeria, specifically, research has demonstrated that Sustainability problems remain a critical concern for firms, particularly in the manufacturing sector,

where volatility in global manufacturing products prices significantly impacts financial stability (Chowdhury et al., 2018).

Corporate social responsibility (CSR) has emerged as a potential mitigating factor against Sustainability problems, particularly in industries characterized by high environmental and social impacts, such as the manufacturing sector. CSR initiatives, which often include philanthropic donations and community engagement, have been posited as strategies to enhance corporate reputation and stakeholder relationships (Hou, 2018). Research suggests that companies that actively engage in CSR can reduce their Sustainability problems by fostering goodwill among stakeholders, which can lead to improved financial performance and lower costs of capital (Ofogbe et al., 2021). For instance, studies have shown that CSR engagement can enhance a firm's legitimacy and reduce the likelihood of Sustainability problems, as stakeholders are more likely to support companies that demonstrate a commitment to social and environmental responsibility (Fadhilah et al., 2022).

Moreover, the relationship between CSR and Sustainability has been a focal point of numerous studies, with findings indicating that CSR can serve as a valuable driver of financial success. Companies that prioritize CSR are often viewed favorably by investors, which can lead to increased investment and lower Sustainability problems (Coelho et al., 2023). In the manufacturing sector, where public scrutiny is particularly intense, CSR initiatives can help companies navigate regulatory challenges and mitigate reputational risks associated with environmental degradation (Saeed & Gul, 2023). This is particularly relevant in Nigeria, where the manufacturing industry has faced significant

criticism for its environmental impact and social injustices (Angraini, 2024).

Despite the growing body of literature on CSR and Sustainability, there remains a notable gap in research specifically examining the interplay between CSR and Sustainability, particularly within the context of Nigerian manufacturing firms. Most existing studies have focused on the positive impacts of CSR on Sustainability without adequately addressing how CSR can directly influence Sustainability problems. This study aims to fill this gap by investigating the relationship between CSR expenditures, specifically donations made by manufacturing firm, and their Sustainability problems as measured . By employing panel regression analysis, this research will provide insights into how CSR initiatives can serve as a strategic tool for managing Sustainable manufacturing process in the Nigerian manufacturing firm.

In conclusion, this research will contribute to the existing literature by providing empirical evidence on the relationship between CSR and Sustainability, thereby offering valuable insights for practitioners and policymakers. By focusing on the unique context of Nigerian manufacturing firm, this study will enhance our understanding of how CSR can be leveraged to mitigate Sustainability problems, ultimately contributing to more sustainable business practices in the industry.

### **1.1 Research Objective**

The objective of this study is to determine the effect of corporate social responsibility on the Sustainability of listed manufacturing firms in Nigeria.

### **1.2 Research Hypothesis**

The research hypothesis is therefore: That corporate social responsibility has a significant effect on the Sustainability of listed manufacturing firms in Nigeria.

### **1.3 Research Question**

The research question to be addressed in this study is: What is the effect of corporate social responsibility on the Sustainability of listed manufacturing firms in Nigeria?

## **2.0 Literature Review**

### **2.1 Conceptual Review**

#### **2.1.1 Sustainability**

Sustainability refers to the practice of meeting current needs without compromising the ability of future generations to meet their own needs. It involves maintaining a balance between economic growth, environmental protection, and social well-being. In other words, it aims to create systems and practices that are environmentally responsible, economically viable, and socially inclusive over the long term. This includes considerations like reducing resource consumption, minimizing waste, protecting ecosystems, ensuring fair labor practices, and promoting social equity. In developed countries, Sustainability is frequently analyzed through the lens of Energy Efficiency and the Biodiversity Impact on corporate performance. In contrast, studies in developing nations, including Nigeria, highlight the influence of external factors such as political instability and regulatory challenges on sustainability (Mendoza et al., 2009). Characteristics associated with sustainability include its dynamic nature, as it can change rapidly in response to environmental conditions.

#### **2.1.2 Corporate Social Responsibility (CSR)**

Corporate social responsibility (CSR) has emerged as a critical concept in the discourse surrounding corporate governance and ethical business practices. Defined as the commitment of businesses to contribute positively to society while balancing economic, social, and environmental considerations, CSR encompasses

a wide range of activities, including philanthropy, ethical labor practices, and environmental stewardship (Oztop & Kuyu, 2020). In developed countries, CSR is often linked to enhanced corporate reputation and improved financial performance, with studies demonstrating that firms engaging in CSR activities tend to experience lower sustainability problems (Akıncı, 2013). Conversely, in Nigeria, manufacturing firms have faced scrutiny for its environmental impact, prompting companies to adopt CSR initiatives as a means of addressing stakeholder concerns and enhancing their legitimacy (Hevia & Servén, 2016). The characteristics of CSR include its voluntary nature, the emphasis on stakeholder engagement, and the potential for long-term benefits that extend beyond immediate financial gains (Marchettini & Maino, 2015).

Moreover, CSR is increasingly recognized as a strategic tool for managing sustainability, particularly in industries with significant social and environmental impacts. Research indicates that companies that invest in CSR can mitigate reputational risks and foster stronger relationships with stakeholders, ultimately leading to improved financial stability (Yao et al., 2011). In Nigeria, the integration of CSR into corporate strategies has been shown to enhance firm performance and reduce sustainability problems, particularly in manufacturing firms, where public perception plays a crucial role in operational success (Demirgüç-Kunt et al., 2017). Synthesizing these perspectives, CSR can be understood as a multifaceted approach that not only addresses ethical obligations but also serves as a strategic mechanism for enhancing corporate resilience and mitigating sustainability.

## **2.2 Theoretical Review**

### **2.2.1 Stakeholder theory**

Stakeholder theory, primarily developed by R. Edward Freeman in the 1980s, posits that businesses should consider the interests of all stakeholders—those who are affected by or can affect the company—rather than focusing solely on shareholders Freeman et al. (2004). The key assumptions of this theory include the belief that stakeholder relationships are essential for the long-term success of a business and that ethical considerations should guide corporate decision-making (Donaldson & Preston, 1995). Supporters of stakeholder theory argue that it leads to better organizational performance by fostering a more inclusive approach to management that reconciles the diverse interests of various stakeholders, including employees, customers, suppliers, and the community (Mbo & Adjasi, 2017). Critics, however, contend that stakeholder theory can lead to conflicts of interest and complicate decision-making processes, as it may be challenging to balance the often-competing demands of different stakeholder groups (Freeman, 1994). Despite these criticisms, stakeholder theory remains relevant to contemporary discussions on corporate social responsibility (CSR) and sustainability, particularly in sectors like manufacturing firms, where stakeholder engagement is crucial for managing reputational and operational risks (Čutura et al., 2021).

The relevance of stakeholder theory to the study of CSR and sustainability in listed manufacturing firms in Nigeria is particularly pronounced. In this context, stakeholder theory provides a framework for understanding how CSR initiatives can mitigate sustainability problems, addressing the concerns of various stakeholders, including local communities affected by environmental degradation (Dmytriiev et al., 2021). By prioritizing stakeholder interests, companies can enhance their legitimacy and

reduce the likelihood of conflicts that could lead to sustainability problems (Harrison & Wicks, 2013). The manufacturing firm in Nigeria has faced significant scrutiny over its environmental practices, making stakeholder engagement essential for maintaining social license to operate and ensuring long-term financial viability (Villamor, 2024). Thus, adopting stakeholder theory allows for a comprehensive analysis of how CSR activities can serve as a strategic response to sustainability, ultimately contributing to sustainable business practices in the industry.

Justifying the adoption of stakeholder theory for this study involves recognizing its ability to provide a nuanced understanding of the interplay between CSR and sustainability. By framing CSR as a mechanism for addressing stakeholder concerns, this theory highlights the potential for companies to achieve both ethical and financial objectives (Phillips et al., 2003). Furthermore, stakeholder theory encourages organizations to adopt a proactive approach to risk management by fostering open communication and collaboration with stakeholders, which can lead to more informed decision-making and enhanced corporate resilience (Dwyanti, 2024). In the context of Nigeria's manufacturing firms, where stakeholder dynamics are complex and often contentious, stakeholder theory offers valuable insights into how companies can navigate these challenges while simultaneously pursuing their financial goals (Schaltegger et al., 2017). Ultimately, this theoretical framework not only enriches the understanding of CSR's role in mitigating sustainability problems but also underscores the importance of ethical considerations in corporate governance.

### **2.3 Empirical Review**

The relationship between Corporate Social Responsibility (CSR) and sustainability has been the subject of extensive empirical research, revealing a complex interplay that varies across

different contexts and industries. A significant body of literature suggests a positive correlation between CSR initiatives and sustainability metrics such as Energy Efficiency (EE) and Biodiversity Impact (BDI). For instance, Lestari (2024) highlights that companies engaged in CSR activities in the United States tend to exhibit superior sustainability, attributing this to enhanced operational efficiency and reputation. Similarly, Nyahuna & Doorasamy (2023) assert that CSR initiatives improve competitiveness, leading to better financial outcomes, a view echoed by (Nyahuna & Doorasamy, 2023). This positive relationship is further supported by (Kristari, 2022), who found that Indonesian manufacturing firms that disclose carbon emissions and engage in CSR practices also report improved financial performance.

However, the literature also presents contrasting findings that challenge the notion of a universally positive relationship between CSR and financial performance. For example, Maqbool and Hurrah Maqbool & Hurrah (2020) discuss instances where CSR can impose additional costs on firms, potentially leading to a negative impact on financial performance due to agency problems and inefficient resource allocation. This perspective is reinforced by (Li & Li, 2018), who argue that the costs associated with fulfilling CSR obligations can place firms at a competitive disadvantage, ultimately impairing profitability. Such findings underscore the importance of context and the potential for CSR to yield varying financial outcomes depending on the specific circumstances of a firm.

The role of mediating factors in the CSR-financial performance nexus has also been explored. Carroll & Shabana (2010) emphasize the significance of stakeholder influence capacity, suggesting that the impact of CSR on financial performance may depend on situational contingencies and the presence of mediating variables. This view is supported by (Akben-

Selçuk, 2019), who controlled for endogeneity in CSR activities and found that the relationship between CSR and financial performance is more nuanced than previously thought. The complexity of these relationships is further illustrated by (Kim et al., 2019), who examined how CSR assurance affects the CSR-performance link, indicating that the effectiveness of CSR initiatives may be contingent upon the quality of their implementation and reporting.

Moreover, the meta-analytic review by Wang et al. (2016) highlights the disparities in CSR measures, which complicate the ability to draw consistent conclusions across studies. This inconsistency suggests that while many studies report a positive relationship between CSR and financial performance, the mechanisms underlying this relationship are not fully understood and may vary significantly across different sectors and geographic regions. For instance, Nguyen and Nguyen Nguyen & Nguyen (2020) provide a comprehensive overview of CSR research in Vietnam, indicating that while CSR contributes positively to financial performance, the degree of impact can differ based on local economic conditions and cultural factors.

In addition to financial performance, the literature has begun to explore the implications of CSR on financial risk. Although empirical studies specifically addressing the relationship between CSR and financial risk are limited, some insights can be drawn from the broader discourse on CSR's impact on firm stability and resilience. For example, firms that engage in proactive CSR practices may mitigate financial risks by enhancing their reputational capital and stakeholder trust, which can buffer against market volatility (Torugsa et al., 2011). This perspective aligns with the findings of (Oware & Mallikarjunappa, 2020), who suggest that CSR expenditure can be associated with improved

financial performance, potentially indicating lower financial risk.

The integration of CSR into core business functions has also been posited as a strategy to enhance both financial performance and risk management. Rinawiyanti et al. (2022) argue that effective integration of CSR can lead to improved company performance, suggesting that firms that embed CSR into their operational strategies may achieve better financial outcomes and lower risk exposure. This is particularly relevant in the context of the oil and gas industry, where CSR initiatives can address environmental and social concerns that are critical to maintaining operational licenses and stakeholder support.

In conclusion, the empirical literature presents a multifaceted view of the relationship between CSR and financial performance, with evidence supporting both positive and negative associations. The complexity of this relationship is influenced by various mediating factors, contextual elements, and the specific nature of CSR activities undertaken by firms. As my study focuses on the effect of CSR on financial risk among listed oil and gas companies in Nigeria, it is crucial to consider these nuanced findings. Understanding how CSR initiatives can not only enhance financial performance but also mitigate financial risks will provide valuable insights into the strategic importance of CSR in this sector.

### **3.0 Methodology**

The research design for this study on the effect of Corporate Social Responsibility (CSR) on sustainability among listed manufacturing firms in Nigeria will be ex post facto. This design is appropriate as it allows for the analysis of existing data to identify relationships between CSR and sustainability without manipulating any variables. The study will utilize secondary data sourced from the audited annual financial statements of the selected manufacturing firms, covering the

period from 2015 to 2023. Secondary data is advantageous as it allows for the examination of historical trends and patterns, facilitating a comprehensive understanding of the relationship between CSR and sustainability over time (Benlemlih & Girerd-Potin, 2017).

A purposive sampling technique will be employed to select the companies, focusing on seven listed manufacturing firms that have complete data available for the study period. The method of data analysis will involve panel regression analysis, utilizing Valustat software, which is well-suited for handling both cross-sectional and time-series data, allowing for a comprehensive examination of the relationships among the variables.

This study will adopt a modified version of existing models that have utilized donation as a proxy for CSR measurement. The empirical literature indicates that donations can effectively capture the essence of CSR activities, as evidenced by Lee and Kim (Lee & Kim, 2017), who measured CSR through charitable contributions in their analysis of firm performance in Korea. However, it is important to note that while this measure is suitable in the Korean context, it may not fully reflect the broader dimensions of CSR as defined by Carroll (Lee & Kim, 2017). This model posits that sustainability is a function of CSR activities, specifically focusing on how CSR expenditures can influence the financial stability of firms in the manufacturing sector. This functional relationship is grounded in the literature, which suggests that effective CSR practices can mitigate Sustainability problems by enhancing corporate reputation and stakeholder trust.

The model for this study will be expressed as follows:

$$S = F(\text{CSR})$$

Where S= Sustainability

CSR = Corporate Social Responsibilities measured by Donation

In terms of variable measurement, sustainability will be assessed using the Altman Z-score, a widely recognized metric that combines various financial ratios to predict the likelihood of bankruptcy and assess financial health. The Z-score is calculated using the formula:

$$Z = 1.2 \times X_1 + 1.4 \times X_2 + 3.3 \times X_3 + 0.6 \times X_4 + 0.999 \times X_5$$

Where:

- $X_1$  = Energy Efficiency (*Measures liquidity*).
- $X_2$  = Waste Generation and Recycling (*Measures profitability and long-term viability*).
- $X_3$  = Biodiversity Impact (*Measures operating efficiency*).
- $X_4$  = Global Reporting Initiative (GRI) (*Measures leverage*).
- $X_5$  = Sustainable Development Goals (SDGs) (*Measures asset turnover*).

#### 4.0 Data Presentation and Discussion of Findings

**Table: 4.1.1 Descriptive Statistics**

	Mean	Std. Deviation	N
Altman Z Score	.5276	4.02026	62
Corporate Social Responsibility	6.8535	1.56269	62

#### Researcher's Computation (2025)

The descriptive statistics provide an overview of the central tendency and variability of the variables in the study. The mean Altman Z-Score is **0.5276**, suggesting that, on average, the financial stability of the listed Manufacturing firms in Nigeria is low, potentially placing many of them in sustainability problems. This is a concerning insight, particularly for a sector that

faces significant operational and financial challenges. The high standard deviation (**4.02026**) indicates that sustainability varies considerably across the sampled companies, reflecting the heterogeneity in financial health within the industry.

The mean value for Corporate Social Responsibility (CSR) is **6.8535**, indicating that, on average, these companies engage in moderate levels of CSR activities. However, the standard deviation (**1.56269**) shows that the level of CSR

investment is not consistent across the firms, suggesting differences in how companies prioritize and allocate resources to CSR. This variability may be influenced by factors such as company size, profitability, or strategic objectives. The sample size for both variables is **62**, which is adequate for running the statistical analyses, including correlation and regression. This ensures that the results are reliable and can provide meaningful insights into the relationship between CSR and Sustainability.

**Table: 4.1.2 Correlations**

		Altman Z Score	Corporate Social Responsibility
Pearson Correlation	Altman Z Score	1.000	.352
	Corporate Responsibility	Social.352	1.000
Sig. (1-tailed)	Altman Z Score	.	.002
	Corporate Responsibility	Social.002	.
N	Altman Z Score	62	62
	Corporate Responsibility	Social62	62

**Researcher’s Computation (2025)**

The correlation analysis reveals a **moderate positive relationship** between CSR and the Altman Z-Score, with a Pearson correlation coefficient of **0.352**. This suggests that companies that invest more in CSR activities tend to have lower sustainability problems, as indicated by higher Altman Z-Scores. This finding aligns with the idea that CSR initiatives can enhance a firm's reputation, stakeholder trust, and operational

efficiency, ultimately improving financial stability.

The correlation is statistically significant at the 1% level (**p = 0.002**). This indicates that the observed relationship between CSR and sustainability is unlikely to have occurred by chance. The positive association supports the argument that CSR can act as a strategic tool to mitigate sustainability problems.

**4.2 Inferential Statistics**

**Table: 4.2.1 Regression Analysis Result**

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics
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	B	Std. Error	Beta	t	Sig.	Tolerance
1						
(Constant)	-5.686	2.184		-2.604	.012	
Corporate Social Responsibility	.907	.311	.352	2.917	.005	1.000
R	.352					
R Square	.124					
Adjusted R Square	.110					
Std. Error of the Estimate	3.79355					
F-statistic	8.509					
Significance (p-value for F-statistic)	.005					
Durbin-Watson	1.312					

**Researcher’s Computation (2025)**

The regression analysis confirms the significant impact of CSR on sustainability. The unstandardized coefficient (B = 0.907) indicates that a one-unit increase in CSR spending results in a 0.907 increase in the Altman Z-Score, suggesting improved financial stability. This underscores the potential of CSR to serve as a mitigating factor against financial distress in the oil and gas sector. The standardized beta coefficient (0.352) further emphasizes that CSR has a moderate positive effect on sustainability. The constant (-5.686) is statistically significant (p = 0.012) and provides a baseline estimate of financial risk when CSR investment is zero. This negative value highlights the importance of CSR in improving financial stability, as companies with no CSR initiatives are likely to experience higher financial distress. Importantly, the CSR coefficient is also statistically significant (p = 0.005), which confirms that the relationship between CSR and sustainability is strong and reliable.

The model summary provides additional context for the regression results. The R-Square value of 0.124 indicates that CSR explains 12.4% of the variation in sustainability, as measured by the Altman Z-Score. While this is a modest proportion, it suggests that CSR has a meaningful role in influencing sustainability. The Adjusted R-Square value of 0.110 accounts for the sample size and confirms the robustness of the model. The Standard Error of the Estimate is 3.79355, reflecting the average deviation of observed Altman Z-Scores from the predicted scores. This value indicates a moderate level of accuracy in the model's predictions. Overall, the regression model provides useful insights into the role of CSR in reducing sustainability, even though other factors not included in the model may also play a significant role. The ANOVA results validate the overall significance of the regression model. The F-statistic (8.509) is relatively high and statistically significant (p = 0.005), indicating that the model

fits the data well and that CSR significantly predicts sustainability. This supports the hypothesis that CSR investments can positively influence the financial stability of companies in the manufacturing firms.

The Durbin-Watson statistic (1.312) indicates no severe autocorrelation in the residuals. While the value is slightly below the ideal range of 1.5 to 2.5, it does not raise major concerns about the violation of regression assumptions. This suggests that the model results are reliable and not distorted by patterns in the residuals.

In summary, the study finds that CSR has a significant and positive impact on sustainability reduction in listed oil and gas companies in Nigeria. Companies that invest in CSR tend to have higher Altman Z-Scores, indicating improved financial stability and lower sustainability problems. Although CSR explains a modest proportion of the variation in sustainability, its positive effect is statistically significant and meaningful.

#### **4.3 Discussion of Findings**

The findings from the regression analysis indicate a significant positive relationship between Corporate Social Responsibility (CSR) and sustainability mitigation, particularly in manufacturing firms. This aligns with the findings of Tran and O'Sullivan, who noted that firms with robust CSR practices are less likely to engage in financial misstatements, thereby enhancing their financial stability and reducing the likelihood of regulatory scrutiny (Tran & O'Sullivan, 2018). Similarly, Jia et al. highlighted that CSR investments can act as a form of insurance against stock price volatility, suggesting that firms view CSR as a strategic tool for risk management (Jia et al., 2019). This perspective is further supported by Brooks and McGuire, who found that CSR engagement is inversely related to future bankruptcy risks, reinforcing the notion that CSR can serve as a

buffer against sustainability problems (Brooks & McGuire, 2022).

Contrastingly, some studies present a more nuanced view of the CSR-financial performance relationship. For instance, while Al-Hadi et al. found a significant negative association between CSR performance and financial distress, they also noted that this relationship varies across different firm life cycle stages, indicating that the impact of CSR may not be uniformly beneficial across all contexts (Al-Hadi et al., 2017). Furthermore, the findings of Khan et al. suggest that while CSR can reduce sustainability problems, the extent of this effect may vary based on the firm's operational environment and market conditions (Khan et al., 2021). This complexity is echoed in the work of Farooq and Noor, who argue that while CSR activities generally mitigate financial distress, the effectiveness of these initiatives is contingent upon the firm's level of international involvement and market dynamics (Farooq & Noor, 2021). Such contrasting results highlight the need for a deeper understanding of the contextual factors that influence the CSR-financial performance nexus.

In conclusion, the regression analysis substantiates the claim that CSR significantly contributes to sustainability reduction in manufacturing firms, with statistically significant coefficients reinforcing this relationship. However, the mixed findings from the literature suggest that while CSR can be a powerful tool for enhancing financial stability, its effectiveness may be influenced by various external and internal factors.

#### **5.0 Conclusion and Recommendations**

##### **5.1 Conclusion**

This study provides compelling evidence that Corporate Social Responsibility (CSR) significantly influences Sustainability among listed manufacturing firms in Nigeria. The regression analysis demonstrates a positive relationship between CSR expenditures and

financial stability, as indicated by the Altman Z-Score. With CSR explaining a meaningful portion of the variation in Sustainability, the findings underscore the importance of integrating CSR into corporate strategies to enhance financial resilience in a sector characterized by volatility and regulatory scrutiny.

## 5.2 Recommendations

Based on the methodology adopted and the findings of this study, it is recommended that manufacturing firms in Nigeria prioritize CSR initiatives as a strategic tool for Sustainability management. Companies should adopt a comprehensive approach to CSR that goes beyond mere donations, incorporating broader social and environmental responsibilities to enhance their corporate reputation and stakeholder trust. Furthermore, firms should consider conducting longitudinal studies to assess the long-term impacts of CSR on Sustainability, as well as exploring the influence of regulatory frameworks on CSR practices. This will provide a more holistic understanding of the CSR-financial performance nexus and guide effective decision-making.

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