IJEBM Vol:1, Issue:2 (2025), Pages 46-53.
ISSN: 3079-4218

Corporate social responsibility activity and corporate profitability evidence from Nigerian oil and gas industry

Emmanuel Ayeni[1], Akintunde A. Akintayo[2], Kayode Muhammed Ibrahim[3], Carim Abiola Abass[4]

[1] Department of Economics, Bowen University, Iwo, Osun State, Nigeria. Emmanuelayeni05@gmail.com

[2] Department of Entrepreneurial Studies, Osun State University, Osogbo, Nigeria. ORCID: https://orcid.org/0009-0001-6444-6859 Email: akintunde.akintayo@uniosun.edu.ng

[3] Department of Business and Entrepreneurship, Kwara State University, Malete, Ilorin. ORCID: https://orcid.org/0009-0009-9091-348X Email: ibrahim.kama93@gmail.com

[4] Department of Marketing, Adeseun Ogundoyin Polytechnic Eruwa, Oyo State, Nigeria. Email: abicar2040@gmail.com

Abstract

Business entities use corporate social responsibility (CSR) initiatives to improve the way they are perceived by the populations in which they operate. The research evaluates how CSR programs affect the financial outcomes of Nigerian Stock Exchange-listed oil and gas companies. Business profitability receives negative impacts from CSR activities which concentrate on environmental sustainability alongside community engagement programs. A company's total assets, as well as its years in operation, both produce positive effects which boost short-term financial performance and eventually result in long-term profitability. This investigation demonstrates the necessity of striking an equilibrium during CSR implementation procedures. Fulfilling social and environmental obligations remains obligatory for companies, yet organizations should avoid business practices that threaten immediate financial strength. Research indicates that oil and gas entities must create CSR programs which support existing business targets to prevent community-oriented or environmental initiatives from deteriorating current profitability. CSR initiatives need alignment with brand image development in order to generate economic sustainability throughout multiple periods. Companies that use integrated CSR practices succeed in reaching corporate responsibility objectives while maintaining prolonged profitability by building better stakeholder relations, which strengthens their market position.

Keywords: Corporate Social Responsibility (CSR), Profitability, Environment, Community Involvement.

Introduction

Prioritising environmental compassion within corporate organisations results from the need for worldwide awareness of environmental deterioration and the execution of sustainable social and economic development. Substances that pose a threat to human life shouldn't alter the environment in which people live. Consequently, the need for sustainability has given rise to a multitude of international organisations representing a range of perspectives that guide and regulate human interactions with the environment (Nahiba, 2017).

In the context of industrialisation, natural resources are extracted from their natural form through mining and exploration, which is processed to finish or semi-finish goods for final consumption or raw materials for different industries. Without controversy, industrialisation has brought better living standards and economic development. Nevertheless, there are expenses connected to these economic advancements. Natural resources like gasoline, diesel, and other petroleum products are typically used in industrialisation, leading to pollution from factories and overuse of land, both of which are detrimental to the environment (Jeroh & Okoro 2016).

Iloma and Chukwu (2023) suggest that companies whose operations harm the ecosystem in which their victims live bear some responsibility for the negative impacts of their operations on the environment. Businesses in the sector addressed these populations' physical and social needs in response to the environmental burden they faced. Environmental turmoil (such as polluted water sources and dwindling means of subsistence) has a horrific impact on communities in the eastern region of the country. Firms had flatly refused to address the social requirements of host communities, leading to extraordinary confrontations between the firms and community members as well as conflicts inside the communities. A significant number of environmentally polluting companies may be reluctant to participate in important community development programmes due to the financial burden of CSR and the concern that these expenses may ultimately exceed the benefits.

The main drawback of environmental cost reports is that they only display or assign the costs for which the organisation was primarily responsible. However, by releasing strong wastes into the environment, the public is forced to shoulder the responsibility of reducing the life expectancy of creatures inside biological systems (James, 2023).

The main problem was that oil firms neglected corporate social responsibility (CSR) but made enormous profits every year, largely oblivious to the damage they did to the environment and the conflicts that their creation activities produced. The host community retaliated by vandalising oil exploration equipment and pipelines, which led to numerous disputes related to the annual loss of billions of US dollars for the oil firms (James, 2023). These disputes are best described as sincere disagreements between oil firms and their host networks about professional relationships, careers, economic ventures, and creation-related benefits that the host networks believe (Delmas et al., 2015).

Four key environmental legislation passed in Nigeria included the Hazardous Waste Act of 2004 and the Environmental Impact Assessment Act of 2004, together with the National Environmental Standards and Regulations Enforcement Agency (Institution) Act of 2008 and the Nuclear Safety and Radiation Protection Act of 2007. These organisations examined regulations concerning sewage disposal of hazardous materials in addition to water and air safety measures and environmental protection measures. Optimising oil production controls Nigeria's economic stability since the oil and gas industry represents one of the nation's most influential sectors. Statistics from the Nigerian Bureau of Statistics revealed that within the fourth quarter of 2021, the oil industry share decreased to 5.19%, while it stood at 7.49% in the third quarter and 5.87% in the previous fourth quarter. The real GDP in 2021 showed that the oil industry contributed 7.29% to the total GDP value (Esiedesa, 2022). Business activities in this sector command high priority because they dictate substantial growth rates for Nigeria's economy. Although industries funded CSR initiatives substantially with their revenue, the natural environment around oil extraction operations remains damaged, which primarily affects host communities. According to Ajide and Aderemi (2014), the oil and gas industry dedicated N9.5 billion toward CSR initiatives in 2011, which stands as the highest annual investment recorded to date. This is related to the fact that the industry's operations do significant harm to the countries in which they operate, as evidenced by the various forms of conflict, oil spills, fuel flare-ups, pollution, and violent outbursts (Ekhator & Iyiola-Omisore, 2021). Studies regarding the corporate social responsibility of oil firms in Nigeria lack definitive results in most cases. Studies conducted by Olaniyi et al. (2016), Chukwuebuka et al. (2021), Iloma and Chunkwu (2023), Babalola (2012), Akinleye and Adebayo (2017), Ibida et al. (2019), and Ibrahim et al. (2023) have established that oil firm profitability positively benefits from corporate social responsibility practices. The results obtained by Solanke et al. (2022) demonstrated that corporate social responsibility produces minimal changes to oil organisation profitability. The findings from Angela et al. (2021) showed that oil corporations remain in danger because Nigerian oil exploration yields substandard outcomes. The environmental risks linked to oil exploration continue because oil companies devote increasingly large amounts of funding to environmental programs. The unresolved question about CSR practices exists throughout Nigeria, which produces oil. The main intent of this paper is to investigate the link between the oil and gas sector's financial gains and corporate social responsibility practices. The declining environmental conditions in oil-producing territories concern scholars and industry professionals because oil companies continue to spend significant resources in those areas. The paper explores how corporate social responsibility influences oil and gas industry profitability over time to enrich current empirical research. The main research objective aimed to investigate how corporate social responsibility statements changed Nigerian oil and gas company profitability indicators.

Literature Review

Empirical Review

Evidence demonstrates that corporate social responsibility (CSR) impacts a firm's profitability positively and negatively depending on different industries across multiple sectors. Multiple mixed findings emerge in research from Nigeria, including studies by Dibia and Onwuchekwa (2015) and Ebiringa et al. (2013) alongside Jane-Frances et al. (2019) and Ohaka and Ogauzor (2018) as well as studies conducted by Governindarajan et al. (2013), Chowdhury et al. (2019), and Kirat (2015). Dibia and Onwuchekwa (2015) executed an examination of environmental disclosure effects on financial results for Nigerian oil companies. The research investigation included fifteen businesses as the sample. This analysis produces results that establish that profitability demonstrates no linkage with disclosures of corporate social responsibility among businesses. Ebiringa et al. (2013) conducted research which analysed the relationships between the dimensions of corporate social disclosure and oil and gas business size and profitability in Nigerian markets. The twenty firms listed on the Nigeria Stock Exchange constituted the basis for analysis. Profits exhibit strong positive associations with an organisation's willingness to disclose CSR activities.

The evaluation of financial CSR impacts on Nigerian oil and gas organisations was performed by Ohaka et al. (2018) together with Jane-Frances et al. (2019). Research results demonstrate that companies practising CSR achieve higher success levels in the Nigerian oil industry sector. The investigation of Indian oil and gas corporate performance served as the primary target of Govindarajan et al.'s (2013) research focused on corporate social responsibility. Karmayog was positioned as the 12th-ranking organisation in the research through its examination of BSE 200 Index data. Proof from the analysis shows corporate social responsibility actions have positive effects on business financial indicators. The 2019 research of Chowdhury et al. establishes that oil and gas companies derive equal advantages from each sphere of corporate social responsibility. Corporate social responsibility produces higher corporate worth and goodwill while showing no impact on earnings, according to the research conclusion. The study conducted by Kirat (2015) evaluated Qatari perspectives on CSR practices in the oil and gas sector. The CSR programs established by Qatari oil and gas organisations focus primarily on health, sports, education and environmental sustainability based on this report. Human rights, along with labour rights and proper working conditions, and anti-bribery and anti-corruption measures receive little attention from these organisations.

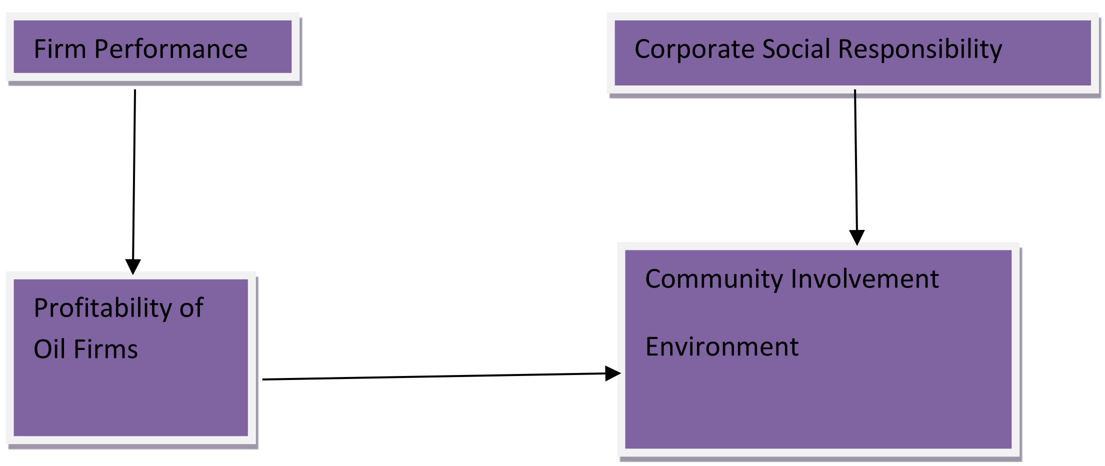
Theoretical Review

Stakeholder Theory

In 1984, R. Edward Freeman proposed the Stakeholder Theory, a management theory emphasising the need to consider not just shareholders' interests but also those of other stakeholders affected by an organisation's decisions and actions. To attain enduring value and sustained prosperity, the concept suggests that companies identify and engage with a diverse array of stakeholders, including employees, clients, vendors, communities, and the environment (Freeman, 1984). The fundamental principles of stakeholder theory are that stakeholders have a legitimate interest in the organisation's operations and that decision-makers should consider their opinions. As per Freeman et al. (2010), the theory also assumes that organisations operate in a broader societal framework and, thus, must contemplate the social and environmental consequences of their decisions. A primary critique of the stakeholder theory is that it might pose challenges for organisations to reconcile the conflicting interests of various stakeholders, especially when those interests' conflict with each other or the organisation's financial objectives. Some argue that prioritising the interests of stakeholders over those of shareholders may result in a decision-making impasse or negatively impact the company's financial outcomes (Phillips, 2003). Despite its critics, Stakeholder Theory remains a valuable tool for researching organisational performance and corporate social responsibility (CSR). Businesses can understand stakeholders' various expectations and concerns regarding CSR programmes by employing a stakeholder-oriented strategy. Fostering trust, enhancing their reputation, and listening to stakeholders' needs are all ways that businesses can perform better (Freeman et al., 2010). Using Stakeholder Theory provides a comprehensive framework for examining the relationship between corporate social responsibility (CSR) activities and organisational success while accounting for the broader implications on stakeholders and society at large.

Research Framework

A research framework is a brief representation of the structure of research that shows the relationship between dependent variables and independent variables in a study.



Author's Computation: Diagram explaining firm performance and CSR activities

Methodology

The researcher dedicated years to analysing financial records from 2011 to 2020 of all oil and gas companies listed on the Nigerian Stock Exchange (NSE). During the research period, the study examined all ten oil and gas companies that traded on the NSE, as shown in Table 1 (Appendix). There were only ten oil and gas publishing companies on the stock exchange, so the research investigated each one individually. The study obtained its data from NSE, which was combined with fact books, yearly financial reports, and statements of chosen corporations. Secondary data analysis based on existing financial and operational data became the backbone for producing a dependable research analysis. The methodology adopted by this research study used empirical data to explain research questions that enabled objective financial performance assessments of corporations. Audited annual reports combined with financial statements served as a solid base for conducting theoretical assumption investigation through methodologically solid approaches.

The research examined Profit After Tax (PAT) as the outcome variable by using Corporate Social Responsibility (CSR) aspects namely community involvement (CI) and environmental responsibility (ENV) from the Branco and Rodrigues (2006) CSR framework. The authors Branco and Rodrigues selected human resource management along with environmental initiatives consumer relations, and product quality as the essential CSR metrics. The collection of CSR indicators became essential for conducting extensive performance evaluations of corporate social responsibility within financial reporting systems.

Data on organisational variables used two vital metrics: company age through AF and total assets using TA to assess their effects on financial performance. The research applied a strict methodology that used unit root tests and correlation matrix screening for pre-testing data stability and variable relationships. The research utilised pooled regression analysis for variable interaction assessment by implementing both Fixed and Random effects models. Analysis of the most appropriate regression model required the application of the Hausman test. The research employed these analytical approaches to investigate CSR initiative relationships with corporate financial performance. This generated an understanding of oil and gas companies' abilities to manage social responsibility with financial gain in the Nigerian market.

Pool Regression

The study applied OLS techniques to panel data in order to track firm innovation together with company performance within the selected quoted enterprises across multiple periods. The researchers made this assumption based on the understanding that both time-related variables and elements from different sections would impact the collected data. Regression on panels adds information points while solving freedom problems, thus making survey results stronger and resolving issues related to collinearity (Greene, 2003). The error term présentation takes the form uit = eit, where it is distributed at zero with identical independent distribution and variance (σe2). Experts commonly use assumptions of fixed and random effects when dealing with individual-specific effects. According to the random effects hypothesis, individual-specific effects exist independently from the independent variables, although the fixed effects hypothesis describes how effects between participants depend directly on independent variables. The random effects estimator provides better results than fixed effects when its underlying assumption holds but generates unforeseeable results when the assumption is invalidated. The researcher applied both of these assumptions during this research work. The Hausman specification test (also known as the Durbin-Wu-Hausman test) functions as a standard tool for verifying estimator consistency through the examination of a more successful yet established consistent estimator. The analysis method used in this research examined variables after observing insufficient efficiency. The following is the model that was developed to accomplish the goal of this investigation:

$$PAT = f\,(CI, ENV, TA, AF)$$

$$PAT = \alpha + \beta_1 CI_{it} + \beta_2 ENV_{it} + \beta_3 TA_{it} + \beta_4 AF_{it} + \varepsilon_{it} \quad \text{(1)}$$

Given that investing in welfare and community development first lowers earnings, there may be a non-linear relationship between profits and community involvement. However, in the long run, businesses make more money when they become involved in the community and build relationships with the public. Consequently, Equation (2) was created by adding the non-linear (quadratic) element of community involvement to the previous equation:

$$PAT = \alpha + \beta_1 CI_{it} + \beta_2 CI_{it}^2 + \beta_3 ENV_{it} + \beta_4 TA_{it} + \beta_5 AF + \varepsilon_{it} \quad \text{(2)}$$

Where PAT is profit after tax, CI is community involvement, CI2 is community involvement squared (CI2), ENV is environment, TA is total assets, and AG is the age of the firm. PAT and TA are in natural logarithms. It is the stochastic error term across time and cross-sectional units.

Pre-Estimation Techniques

Table 1: Unit Root Test Results

Variable	At Level			Remark
	ADF	PP	Levin-Lin Chu	
PAT	- 2.02789** (0.0288)	-2.99824*** (0.0014)	-3.27282*** (0.0005)	I(0)

ENV	-3.58728*** (0.0002)	-6.46572*** (0.0000)	-5.26110*** (0.0000)	I(0)
CI	-2.35540*** (0.0085)	-4.87531*** (0.0000)	-3.21351*** (0.0007)	I(0)
TA	-0.14757 (0.4572)	-4.05827*** (0.0000)	-5.52263*** (0.0000)	I(0)
AF	-2.73763** (0.0214)	-3.05457** (0.0212)	-54.1592** (0.0000)	I(0)

Source: Author's computation

Table 2 lists the unit root tests used in this investigation, including the Levin-Lin Chu, Philip Perron, and Augmented Dickey-Fuller tests. A reversion was indicated by the PAT, ENV, CI, TA, and AF, all of which were significant at the necessary level. The acceptance of the null hypothesis thus demonstrated stability at all levels. This result supports Baltagi's (2005) claim that unit roots are rare in short panels with a high number of units but a short period. Because the panel has a unit root, the author claims that there is a high likelihood of running into the gibberish regression phenomenon when T approaches infinity, and N is finite.

Table 2: Correlation Coefficient Result

	PAT	ENV	CI	TA	AF
PAT	1				
ENV	-0.05040	1			
CI	0.03140	0.17538	1		
TA	-0.40796	0.06337	-0.03131	1	
AF	0.03562	0.11236	0.18436	0.09473	1

Source: Author's computation

Table 3, which displays the correlation matrix between the variables, indicates that profit after taxes is positively correlated with community involvement and business age. In contrast, the environment and total assets are negatively correlated. Furthermore, an organisation's age, total assets, and community involvement have a positive link with the environment, whereas profit after taxes has a negative correlation. The results also show that customer participation and total assets are negatively correlated but that consumer involvement and business age are positively correlated.

Table 4: Post Test

Test	Statistics	Probability
Breusch-Pagan LM	40.80221	0.6503
Pesaran Scaled LM	-0.442486	0.6581
Pesaran CD	0.906582	0.3646

Source: Author's computation

The table presents the findings of the pooled regression, which indicated that the environment and community involvement had a negative impact on profit after taxes for listed businesses in Nigeria's oil sector. In contrast, total assets and firm age had a positive effect. The results show that the environment has little effect on the profitability of businesses involved in the oil sector. Community involvement has a negative and considerable influence on profitability; that is, the more money spent on community involvement, the less profitable the sector's enterprises are overall. In the meantime, businesses in the industry are less profitable overall the more money they spend on community involvement. The reported profitability decreased because industrial enterprises spent more money after engaging with the community.

Companies operating in Nigeria's oil industry experience a positive relationship between their firm age and whole asset age and their profitability levels. Stock assets from 21% of the industry's rated firms positively affect their profitability even though corporate social responsibility decreases sector profits. Partners in the industry will achieve greater profitability by concentrating investments on assets that produce increased output.

The research showed that the age factor contributed 0.67% to the total profitability of listed companies. Multiple previous studies verify that good public perception leads to increased customer recognition, which results in increased profitability for companies. The application of CSR in Nigeria's oil and gas sector generates less impact on corporate profitability than this practice in the entire industry.

Table 4 shows that random effects/heterogeneity does not exist since the Breusch-Pagan LM test rejected the null hypothesis, demonstrating the appropriateness of our chosen random effects model through statistics of 40.802 and a probability of 0.605. The residuals from different cross-sectional units (the used companies) were evaluated through the Pasaran CD test for relationships between units. The results can be affected by cross-sectional dependency and its equivalent term, contemporaneous correlation (Baltagi 2005). Based on the analysis where the null hypothesis could not reject the fact that residuals from cross-sectional units do not share dependency, the test results showed values of 0.907 and 0.365. The final analysis established that panel regression shows no signs of cross-sectional dependence.

Fixed and Random Effect Estimation Results of Equation 2

The provided table displays the results for both fixed and random effects in Columns I through II. The sector's post-tax profits experience negative effects from both environmental measures and community initiatives, as shown in Column I. The introduction of increased community and environmental investment results in lower profitability of sectoral enterprises. The findings reveal that environmental expenses produce a substantial negative effect on the post-tax profits of enterprises operating in this sector. Within this industry, both a business's chronological age and total assets positively affect the amount of earnings the company reports after taxes. Research confirmed that business age within the sector directly influenced the post-tax profit generation of enterprises.

According to the results in Column II, the post-tax profit margins of sector businesses experience negative effects when the organisation engages in environmental activities and community involvement measures. Any increase in investment regarding environment and community engagement leads the sector's business operations to become less profitable. Research indicates that environmental and community service expenditures have a notable effect on the post-tax profitability of the businesses in this sector. Meanwhile, the age and total assets of the firm have a beneficial effect on the profit after taxes of the sector's firms.

Table 5: Hausman Test

Correlated Random Effects – Hausman Test **Test cross-section random effects**			
Test Summary	Chi-sq Statistic	Chi-sq. d.f.	Prob.
Cross-section random	7.102305	5	0.2131

Source: Author's computation

The Hausman test examined the suitable model between fixed or random effects for the study's objective, as shown in Table 5. They accepted the null hypothesis. The research benefits from using a random effects approach as the most appropriate choice. The research results indicated that total asset values produce substantial positive effects on oil company profit in Nigeria, yet environmental and community initiatives yield substantive negative effects.

The primary determinant of profitability for firms exists in their total asset allocation, while social corporate responsibility activities negatively influence profitability because they raise corporate spending. The short-term profitability of firms listed in the industry suffers substantially due to charitable spending on donations and multiple community-related programs yet produces positive long-term effects. This study produces results different from those of the research conducted by Ohaka et al. (2018)

and Jane-France et al. (2019), which demonstrated that CSR generates positive effects on Nigerian oil sector profitability in the short term. According to different studies by Akinleye and Adebayo (2017) and Ibida et al. (2019), as well as Ibrahim et al. (2023), the researchers found negative effects on organisational profitability. The distribution of funds toward CSR programs results in decreased financial gain for the business entity. The Indian research by Govindarajan et al. (2015) established that CSR initiative score ratings match positively with both financial and stock market indicators.

Conclusion

The results demonstrated that, while it contributes to profitability over the long term, the components of corporate social responsibility, such as environmental and community involvement, had a substantial and adverse impact on the short-term profitability of the oil and gas businesses under study. The long-run effect of CSR helps the firms in the sector build goodwill, which later drives profitability. The homogeneity of products in the sector could also be the reason why CSR does not impact profitability in the short run, as it does in other sectors of the economy. They thereby recommended that firms in the sector should incorporate a CSR framework that won't affect their profit in the short run while building goodwill to higher profitability in the long run.

Recommendation and Limitation

The conclusions indicate that while business social responsibility expenditures have a short-term detrimental effect on profitability, they have a long-term favourable impact. Oil companies should carefully plan spending on corporate social responsibility to avoid having an immediate negative impact on their profits. The longer the company has been in operation, the more money it can spend on CSR, which will boost profitability even more. The fact that so few companies are listed in the oil industry is a constraint of our study. The majority of studies concentrated on the short-term association between CSR and profitability; therefore, future studies should concentrate on the long-term relationship between CSR and the profitability of oil companies in the nation.

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Appendixes

Table 3: List of Selected Firms in the Oil and Gas Sector of Nigeria

S/N	List Of Sample Firms	S/N	List Of Sample Firms
1	MRS Oil Nigeria PLC	6	Oando PLC
2	Total Energies Marketing Nigeria PLC	7	Ardova PLC
3	Eterna PLC	8	Seplat Energy PLC
4	Japaul G Old & Ventures PLC	9	Rak Unit Y Pet. Company PLC
5	Conoil PLC	10	Capital Oil PLC