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ENVIRONMENTAL JUSTICE AND RETURN ON ASSETS OF LISTED OIL AND GAS COMPANIES: EMPIRICAL EVIDENCE FROM NIGERIA

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ABSTRACT

Studies have shown that robust returns on assets and efficient resource management are reflections of corporate competence, however, when management negates the essence of environmental justice and protection, in course of business operations, the going concern of such entity is greatly endangered. There is an ongoing debate concerning the uncertainties, environmental injustice, and non-compliance attitude of the majority of environmentally sensitive companies particularly in the upstream sector. Consequently, this study investigated environmental justice and returns on assets of the oil and gas companies. Expo factor was employed using a population of twelve oil and gas operators listed on Nigeria Stock Exchange. Three companies operating in the upstream segment of the downstream industry were selected using the purposive sampling technique. Published financial statements of the sampled companies for the period 2003-2018 form the source of data. The validity and reliability of the data were premised on the scrutiny of the external auditors. Descriptive statistics and panel data regression were used while diagnostic tests of Hausman, Breusch-Pagan/Cook-Weisberg test for heteroscedasticity, and multicollinearity tests were carried out. The study found that environmental justice had a statistically positive significant effect on return on assets (AdjR^2= 0.17, F-Stat. $_{(3, 44)}$ =16.63; P-value=0.00 < 0.05). The study recommended that managements' quest for high investment returns should be aligned with environmental justice for host communities and environmental protection of the planet earth's the peaceful coexistence of all the inhabitants.

INTRODUCTION

Globally, the majority of environmentally sensitive companies give high premium to profit maximization to the detriment of protection and this has consequent effects on the environment (Socoliuc, Cosmulese, Ciubotari, Mihaila, Arion &Grosu, 2020). According to Li and Gao (2019), the development of a nation through organization (private or public) business activities without any iota of concern for the environment will result in irrevocable environmental imbalance, and this will pose threat to life both now and in future. The reality and potency of this threat actually set the stage for the desire for environmental justice. Şenol and Özçelik (2012) observed that companies cause a lot of environmental problems because of profit maximization, fast advancing technological developments, and the unconscious use of natural resources.

Thus, according to Zerban (2013), there is an emergence of new researches in accounting on how accounting interacts with social, political, and economic contexts in which the business operates. From the Nigerian perspective, major oil and gas downstream activities have been within the Nigeria Delta Southern region in Nigeria popularly referred to as (South-South region). Ugboma (2015) asserted that the Niger Delta region has suffered excruciating pains from environmental degradation occasioned by government and multinationals over the years. Onwuka (2005) confirmed that environmental problems are severe in Nigeria, particularly in the Niger Delta region of the country. This is due to oil exploration and other human activities in the Niger Delta region (Oronto, 2004). Environmental degradation is occasioned by the consistent flow of industrial waste, oil spills, gas flares, fire disasters, acid rain, and flooding erosion which has led to the pollution of farmlands and fishponds. It has also led to the destruction of

properties and human lives, including aquatic and bio-diversity. Besides poverty and deprivation, environmental abuse, and degradation rank high among the threats to the survival of the people in the oil and gas-bearing region (Ugboma, 2015). Oil spillage, erosion, and leakage from oil and gas pipelines, gas flaring, flood erosion, and saltwater incursion have taken their ugly toll on the social and economic lives of the people of the region (Adedipe, 2002). Additionally, Adetunji (2006) observed that all the laws enacted by the Federal Government of Nigeria to control environmental pollution caused by oil exploration are never enforced despite the fact that Nigeria is a signatory to several summits organized in respect to environmental sustainability. Such laws include: the Willink's Commission of 1958, Division of Urban Development in 1975, harmful (toxic) Wastes Criminal Provision Acts of 1988, Basel Convention, Federal Environmental Protection Agency (FEPA) of 1988, and Federal Ministry of Environment (FMENV) in 1999. The people in the South region of the Niger Delta has been beleaguered with severe pollutions from the oil prospecting and oil production with obvious consequences and implications for social disorder. Militancy became the order of the day between 2005 and 2019 leading to wanton destruction of oil and gas production facilities and kidnapping for ransom in some other cases (Owolabi&Obidah, 2012). According to Oke and Kareem (2012), the corporate social responsibility (CSR) practices of the oil and gas companies and how they fit into the overall sustainable development plan has been of little prominence in the region. Instead, there have been claims and counterclaims over the practice of CSR initiatives between the Oil and Gas companies' officials and the host communities with possible no end in sight. Considering the negative effects of environmental pollution, degradations, and the need to protect the environment, the researcher is motivated to undertake this study.

Vast number of studies has considered environmental reporting, but to the best knowledge of the researcher, there is dearth literature that has investigated the effect of environment on returns from the emerging Nigerian literature, especially in the upstream segment of the oil and gas industry where decommissioning costs are eminent. In filling this gap, this study proposed the investigation of environmental justice and return on assets of the downstream sector in Nigeria. It is a firm belief of the researcher that the outcome will highlight and bring a lasting solution to a decade of environmental injustice being done in the oil-producing communities in Nigeria. The rest of the study is considered in this manner: Section 2, considered the extant literature from three perspectives, conceptual review, theoretical review, and empirical review. In section 3, methodology and study variables measurement and development of models were considered. Section 4, the study presented the data analysis, results, and discussion of findings and in section 5, the study presented the conclusion, recommendations, and contribution to knowledge.

Research Objective: *Investigate the impact of environmental justice on return on assets (ROA) of selected downstream operators in Nigerian oil and gas companies*

Research Question: *What is the effect of environmental justice on the return on assets of selected oil and gas companies in Nigeria?*

Research Hypothesis (H₀1): *Environment justice has no significant effect on the return on asset of selected oil and gas companies.*

LITERATURE REVIEW

Conceptual Review

Return on Assets: Ho and Zhu (2004) explained that Return on Assets (ROA) is obtained from the competence and efficiency of the management in applying the assets to productive usage. The ability of the managers to manage the waste products, and pollution management and at the same time put the assets to an effective utilization will reflect on the profitability and returns of the establishments (Tsolas, 2010). Therefore, the return on assets is a balanced metric that considers both the effectiveness and efficiency of a firm's operations in assets utilization.

Environmental Justice: The Ogoni debacle began from the non-violent agitation by the Ogoni people for fair treatment by the major IOC operating in its community – Shell Petroleum Development Company (SPDC). Continuous oil exploration activities of SPDC had led to a rapid deterioration of the environment culminating in the loss of economic lives of the local citizenry. An estimated sum of $30 billion worth of oil is said to have been extracted from Ogoni land since 1958 (Chukwu 2016). Despite the avowed non-violent nature of agitations, military repression resulted in thousands of Ogoni killed, raped, and execution of the arrowheads of the protestations now commonly referred to as the Ogoni 9. This later provided the platform for the entrenchment of militancy in the region. The cry for environmental justice has not escaped global attention especially from the United Nations which produced a working document: the United Nations Environmental Protection report (UNEP) that is now expected to serve as a guide for the restoration of the Ogoni land. It is hoped that faithful implementation of the report by all the affected parties will bring about the much-needed succor to the community.

Environmental Disclosure: Environmental disclosures refer to the mandatory or voluntary reporting of information by organizations as it relates to their environmental activities. Corporate social disclosures remains an important area of stakeholder management, as it shapes external perceptions of the firm, helps stakeholders significantly in assessing whether the firm is a good corporate citizen, and eventually justifies the firm's continued existence to its stakeholders (Ebiringa, Yadirichukwu, Chigbu&Ogochukwu, 2013). Similarly, Brammer and Pavelin (2004) stated that environmental disclosures are used as a tool for influencing the perception and actions of stakeholders. The absence of awareness and accessibility to environmental information often leads to more reckless environmental behavior which unavoidably results in environmental problems and a vicious cycle of poverty. These environmental problems are radically against the principles of sustainability. The public has the right to access to environmental information as well as related organizational activities. Oba and Fodio (2012) observed that making such information publicly available is essential for achieving sustainable development.

Decommissioning Cost: Decommissioning costs are the sum total of costs involves in dismantling an oil well, plugging and

abandoning the oil well as well as restoring the production area to its original state. Thus, there are three (3) main costs involved: shutdown, removal, and clean-up costs (Umukoro 2018). Decommissioning costs are generally costly to the company and challenging to the government who has to enforce regulations meant to ensure remediation and restoration of the environment. Although there is currently no reliable estimate of how much it will cost to decommission Nigerian oil and gas facilities, experience from similar jurisdictions support the assertion that it is an expensive venture. For example, according to the United Kingdom Oil and Gas Authority (OGA), the estimated costs of decommissioning UK oil and gas facilities as of 2019 are £49 billion.

Corporate Social Responsibility: The concept of corporate social responsibility emerged in the early 20th century in the U.S. It is mainly about the need for a corporation to be responsible for its stakeholders, including its customers, shareholders, employees, suppliers, and the community. Although the subject of CSR was proposed in the early 20th century, it was never attached with great importance until an outbreak of a series of events, including the Enron fraud, at the end of 2001, which highlighted the issue of corporate governance, as well as the Coca-cola bottle pollution incident in India highlighting environmental issues of water resource protection and the tainted milk incident involving the Japanese Snow Brand Dairy Company in 2000. Such scandals involving major enterprises suggest that more stakeholders will suffer if CSR is not sufficiently recognized. In addition, Uwuigbe, Uwuigbe and Onyeniyi(2014) observed that various firm-level attributes are likely to affect firm CSR participation, and understanding these effects is essential, as companies attempt to derive strategic value from CSR. According to Deegan (2002), this concept assumes that an entity is influenced by and, in turn, has an influence upon the society in which it operates. CSR disclosure is seen by Uwuigbe*et al.,* (2014) as a mechanism whereby companies disclose the corporate social and environmental aspects of their corporate activities to their stakeholders. Thus, for the purpose of this study, corporate social responsibility is seen as the sum total of contribution a company makes to society through its core business activities, its social investment, and/or philanthropic programs.

Theoretical Review

Stakeholder Theory: This study opted for stakeholders' theory as the underpinning theory because of its consistency with many studies, showing that stakeholders' satisfaction is a good measure of companies' performance (Agle, Mitchell &Sonnenfield, 1999; Santos & Brito, 2012). The stakeholder theory is a theory propounded by Freeman in 1984. He defined a stakeholder as any person(s) that has influence or can be influenced by the business of the organization in the quest of achieving its purpose (Freeman, 1984). The survival of any organization depends on the support and the approval given by them. The stakeholder theory was adopted based on the fact that corporate organizations have a social responsibility that requires them to consider the interest of all parties affected by their actions (Peters &Bagshaw, 2014). Iwamoto and Suzuki (2019) opined that, the belief that business and society are intricately linked had long been muted. Some scholars have also argued that business has an obligation to provide service beyond profits, yet without denying profits. In his discourse, Miles (2012) argued that, in the traditional view of a company,

it is the centrality of the stakeholder theory that businesses have obligations, aside shareholders, to a broad range of interests in society, which Freeman (1984) called stakeholders (any group or individual who can affect or is affected by the achievement of the firm's objective)**.** In this study, the relevance of stakeholder the theory offers a social perspective to the objectives of this study and that of the firm and, and to an extent, with the economic view of value maximization (Santos and Brito, 2012).

Empirical Review

Sengottuvel (2018) carried out an examination of the effect of environmental accounting on companies' the profitability of Bannariamman Spinning Mills in India for the period 2008 to 2017. His study used operating profit margin, gross profit margin, and return on capital employed to measure the firm's profitability and found that all profitability indices fluctuate over the period of study. In a similar vein, Hossin and Biva (2020) observed that, Corporate Social Responsibility disclosure shapes external perceptions of the firm helps relevant stakeholders assess whether the firm is a good corporate citizen, and ultimately justifies the firm's continued existence to its stakeholders. Many scholars are of the opinion that the overall interest of stakeholders rather than the narrow the interest of the shareholders are of importance to the measurement of corporate performance (Harrison & Wicks, 2013). From the results of various studies carried out many of these scholars expressed their views that since an the organization does not exist in a vacuum, it must collaborate with its host communities for a sustainable development that will, in turn, guarantee its business success. The result of the study conducted by Uwuigbe, Uwuigbe, and Onyeniyi, (2014) however suggested that the influence of company size to corporate social responsibility disclosures is quite predictable as it was argued that big companies can afford to invest in more environmentally friendly technology and management. More so that, they are more susceptible to an inquiry from stakeholder groups and are highly visible to external groups and are more vulnerable to adverse reactions among them. The studies conducted by Oke and Kareem (2012) on community perception and oil and gas companies CSR initiative in the Niger Delta highlights a major gap in the nature of the regulatory mechanism and institutions in the oil sector which tends to favor capital investment and profits over the people and their environment.

The outcome of the study carried out by Okafor and Oshodin (2012) shows that the favourable relationship exists between profitability and companies' contribution to community development in the areas of education and health. These assertions have been gathered from various scholars in their attempts to evaluate how the concept of corporate social responsibility (CSR) which is an offshoot of environmental justice effects companies' ability to remain in business (Adediran& Alade, 2013; Okafor & Oshodin, 2012; Makori & Jangogo 2013; Iqbal, Sutrisno, Prihat & Rosidi, 2013). The study carried out by Lior (2014) in Kumar and Abuthaker (2012) seems to be in agreement with the World Business Council for Sustainable Development (2001) definition of corporate social the responsibility which is a commitment to sustainable development submitted that sustainable development is of vital importance to humanity and that false sustainability claims are universally unethical in that they are not only significantly damaging to fair business competition

and trade, but also to the a dire need for humanity's progress towards sustainability. Noodezh and Moghimi, (2015) carried out a survey on 'Environmental Costs and Environmental Information Disclosure in the Accounting System' and discovered that the effects humans have on the the environment has increased due to technological and industrial development. It was also discovered that environmental costs are considered important as part of the final cost of products or services in business units, therefore, failure to report these costs in financial statements would undermine the most important qualitative characteristic of accounting information namely their reliability and make these costs remain hidden and unknown to the management. Also, it was discovered that environmental accounting facilitates environmental costs management and reduces costs by making the relationships between costs and their underlying activities. Social and environmental reporting are tools that can be used to account for companies against their performance. From the findings, it was recommended that Social and environmental reporting tools can be used to account for companies against their performance.

By extension, Mousa and Hassan (2014) in their study lend credence to the need for corporate environmental disclosure as a response to public pressure, regulation and external economic events. Despite all the environmental disclosures made by the multinational oil and gas companies, Egbe and Paki (2011), however, concluded in their study on CSR undertaken by SPDC in oil host communities are inadequate and there is need for improvement for the desired impact to be made in these communities. In summary, therefore, while there are a number of studies already conducted on the impact that environmental accounting (with a particular focus on corporate social responsibility) has on corporate performance of firms, there is a dearth of studies on the impact of environmental justice on operational efficiency which is proxied by return on assets. This is particularly considered noteworthy as costs incurred by oil and gas firms in meeting the demands of environmental justice goes beyond social investments or corporate social responsibility.

METHODOLOGY

This study examined environmental justice as it affects return on assets in Nigeria. To achieve the objective of the study, an e*x-post facto* research design was employed, using a population of twelve listed companies engaged in oil and gas. Three of these companies operating in the upstream segment of the oil and gas industry were selected using the purposive sampling technique. The validity and reliability of the data were premised on the scrutiny of the external auditors. Descriptive statistics and panel regression statistics were used to analyze the data sourced from selected and sampled companies.

Model Specification

Operationalization of Variables

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \mu_{it} \text{--- (1)}$$

Where

Y = Dependent Variable = Return on Assets
X = Independent Variable = Environmental Justice

Functional Relationship

$$ROA = f(CSR, DC, ED) \text{------------------------------------- (2)}$$

Model

$$ROA_{it} = CSR_{it} + DC_{it} + ED_{it} + \mu_{it} \text{-------------------------(3)}$$

ROA = Return on Assets
CSR = Corporate Social Responsibility Cost
DC = Decommissioning Cost
ED = Environmental Disclosure
β_0 = regression intercept which is constant
μ is the error term of the model
i = cross-sectional variable
t = time series variable

Measurement of Variables

Table 1. Measurement of Variables

Variables	Abbreviation	Definition
Dependent Variable *(Operational Efficiency)*		
Return on Asset	ROA	$\dfrac{Profit\ after\ Tax}{Total\ Asset}$
Independent Variables *(Environmental Justice)*		
Corporate Social Responsibility	CSR	Natural Logarithm of CSR cost
Decommissioning Cost	DC	Natural Logarithm of Decommissioning cost
Environmental Disclosure	ED	ED Check list scores

Source: Researcher' Compilation (2020)

Data Analysis, Results, and Discussion of Findings

Table 1. Regression Analysis: Effects of Environmental Justice on Return on Assets

Variables	Coefficient	Std. Error	t-stat.	Probability
CSR	0.04	0.31	0.12	0.90
ED	6.86	1.07	7.33	0.00
DC	0.0017	0.01	0.17	0.86
CONS	33.80	3.26	10.38	0.00
F-stat	16.63			
Prob. (F-stat)	0.00			
Adjusted R²	0.17			

Source: Researcher's Study, 2020

$$ROA_{it} = \beta_0 + \beta_1 CSR_{it} + \beta_2 DC_{it} + \beta_3 ED_{it} + \mu_{it}$$

$$ROA = 33.80 + 0.04CSR_{it} + 6.86DC_{it} + 0.0017ED_{it} + \mu_{it}$$

From table 4.1, ($ROA_{it} = \beta_0 + \beta_1 CSR_{it} + \beta_2 DC_{it} + \beta_3 ED_{it} + \mu_{it}$) the regression result showed that all the proxies of environmental justice (EJ) that is CSR =0.04, ED = 6.86 and DC = 0.0017 have positive effect on Return on Assets (ROA). This indicates that a unit increase in EJ will bring about 0.04 increase in ROA; a unit increase in ED will cause a 6.86 change in ROA; a unit change in DC will cause a 0.0017 change in ROA. The statistical significance of each proxy revealed that CSR has an insignificant impact on ROA ($P = 0.90 > 0.05$); ED showed a significant impact on ROA ($P =$

0.00 < 0.05); DC showed an insignificant impact on ROA ($P = 0.86 > 0.05$). With the F-statistics of 16.63 and the p-value of 0.0 which is less than 0.05 level of significance adopted, rejected the null hypothesis and accepted the alternate, which means that that the entire model is significant. The *Adjusted R^2* of 0.17 explains that only 17% of the total variation is explained by the independent variables while the balance of 83% is explained by variables outside the study.

Table 2. Post Estimation Tests for the Model

Tests	Statistics	Probability
Hausman	21.3	0.00
Breusch-Pagan/Cook-Weisberg test for heteroscedasticity	2.37	0.12
Multicollinearity test	1.28	

Source: Researcher's Study, 2020

Table 4.2 shows the results of the diagnostic tests carried out to determine the choice and appropriateness of the estimation techniques employed for this model.The Hausman test was carried out to determine whether fixed effect, random effect or pooled ordinary least square (OLS) estimation technique is appropriate for the model. The Hausman specification test has as its null hypothesis that the difference in coefficients of a model is not systematic and hence the random effect estimation technique is appropriate. The result of the Hausman test ($f = 21.3$, $p = 0.00 < 0.05$) indicated that the fixed effect estimation technique is appropriate for this model. The Multicollinearity test carried out to determine the presence or absence of Multicollinearity, revealed no figure. This indicates the absence of Multicollinearity in the model. This suggests that the study accepts the null hypothesis. The Breusch-Pagan/Cook-Weisberg test for heteroscedasticity was carried out to determine if the variance of the residual is constant. This test has a null hypothesis of the constant variance of the residual, the result of the test showed no figure, indicating the absence of heteroscedasticity in the model. This suggests that the study accepts the null hypothesis of constant variance, indicating that the variance of the residual is constant.

DISCUSSION OF FINDINGS

The study examined the effect of environmental justice on return on assets. Environmental justice (EJ) when regressed with Return on Assets (ROA) using a panel data analysis. Some of the results were consistent with previous studies, others were not. In Table 4.1 showed a positive and significant effect of environmental justice on return on assets of the oil and gas companies. The result of the study suggests that reporting and disclosing the issues on environmental justice in the financial statements would bring about an increase in profitability (ROA) and value creation of the oil and gas companies. This finding is in tandem with prior studies of Krishna (2012); Ebiringa, Yadirichukwu, Chigbu and Ogochukwu, (2013); who stated in their studies that corporate social responsibilities (CSR) affect the profitability of companies positively and significantly due to the fact that it sharpens external perceptions on companies, thereby increasing its chances of being profitable. The findings are further supported by the studies of Okafor and Oshodin (2012); Ilaboya and Omoye, (2013) and Noodezh and Moghimi (2015), Nnamani,Onyekwelu, and Ugwu (2017), Sengottuvel (2018) concluded that social and environmental reporting tools can be used to gauge the performances of companies.

CONCLUSION AND RECOMMENDATIONS

Conclusion: This study undertook an investigation of the effects of environmental justice on return on assets of listed oil and gas companies of the companies. The study employed (CSR), decommissioning cost (DC), and environmental disclosure (ED) as proxies to measure the independent variable of environmental justice, while return on assets was the dependent variable of the study. The validity and reliability of the data was premised on the scrutiny of the external auditors, while descriptive statistics and inferential statistics were used to analyze the data while diagnostic tests of Hausman, Breusch-Pagan/Cook-Weisberg test for heteroscedasticity and multicollinearity tests were carried out. The study concluded that each of corporate social responsibility and decommissioning cost had a positive but insignificant effect on return on assets, while environmental disclosure exhibited positive significant effect. However, the joint results revealed that in conclusion, return on assets was statistically and positively affected by environmental justice in the oil and gas activities in Nigeria.

Recommendations: The study recommended that managements' quest for high investment returns should be aligned with environmental justice for host communities and also environmental protection of the planet earth's peaceful coexistence of the inhabitants. Also that other stakeholder, managers, policymakers, financial regulators, and market participants should pay more attention to environmental disclosures in the published reports of the listed companies to ensure completeness and reliability.

Contribution to Knowledge: There are pieces of evidence of previous studies that have examined environmental reporting and return on assets, however, only a few of them have considered the effects of environmental justice as it affects return on assets of the upstream sector of the oil and gas industry in Nigerian emerging literature. This study filled this gap and extended the frontiers in literature in this regard. Further studies could expand the scope of the study by including other environmental sensitives companies beyond the downstream activities of the oil and gas industry in Nigeria.

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