Analysis of Environmental and Social Disclosure and Financial Performance of Selected Quoted Oil and Gas Companies in Nigeria (2012-2016)

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Abstract
This paper examined the impact of environmental and social disclosure on the financial performance of quoted oil and gas companies in Nigeria. Time series data for five years were collected and analyzed using the ordinary least square regression technique. The theoretical framework was hinged on stakeholder and legitimacy theories which describe the tie between organizations and the social/societal strata need for disclosure and financial performance. Results from the statistical analysis revealed that disclosure on employee health and safety and community development do not significantly affect financial performance while disclosure on waste management had a positive and significant effect on firm’s financial performance. The study recommended that oil and gas companies should constantly review their waste management strategy and employ bespoke technology in waste management to mitigate their impact on the environment. Furthermore, Oil and gas companies should improve on employee health and safety as part of their mission and vision statement for enhanced firm value. Companies should also ensure sustained development of their host communities to avoid hostility by stakeholder groups which will have negative effect on its operations and in turn affects performance.

Keywords: Environmental and social disclosure, Employee health and safety (EHS), Waste management (WM), Community development (CD), Return on Capital employed (ROCE)

1. Introduction
Industrialization and globalization have expanded business strategies around the globe with advancement in technology, business operations and processes. There is a hype in economic activities and competition and as a result, the environment which is an integral constituent of human existence is largely affected. Natural capital such as clear air, clean water, land, greenhouse gases, climate, energy, ecosystems, biodiversity and other natural elements are degraded and altered and environmental sustainability threatened. The mechanized agricultural system adopted for greater yield involving large scale cultivation has led to the loss of animal and plant habitat, deforestation and extinction of endangered species. Overtime, stakeholders increased awareness of environmental concerns has heralded the need for organizations to disclose information pertaining to proper environmental management. Environmental disclosures are reports of organizations environmental strides in propagating
environmental sustainability. It is a major feature of entities corporate social responsibility reporting (CRS reporting) which provides information (narrative and numerical) on organization environmental footprint in annual reports. Entities environmental consciousness has also evolved policies and environmental management systems (EMS) with key objectives aimed at environmental sustainability, remediation and reduction of adverse effects of economic activities on the natural environment. This initiative is in line with various global, regional and national legislations such as the International Standard Organizations (ISO) which introduced the ISO 14000 series of standards aimed at specifying procedures/processes for managing and improving entity’s environmental performance, United Nations Protocols and Agreement on Environment, the EU Directive on Environmental issues and the Global reporting initiatives (GRI) are various framework for environmental disclosure (Akinlo & Iredele 2014).

Nigeria as an emerging economy with its main stay been petroleum resources and other solid mineral endowments is faced with substantial environmental degradation in a bid to improve her economic base and the standard of living of her citizenry. Natural resources constantly explored and exploited by oil and gas companies are not without their imminent environmental impact such as emissions, hazardous waste, soil contamination, biodiversity loss (wildlife, agro diversity) and global warming. These natural resources are tapped to enhance economic development are finite and non-renewable in nature subject to diminution (Beredugo & Mefor 2012).

Environmental disclosure aligns with the triple bottom line framework which emphasizes balancing all stakeholder concerns. Employees are major stakeholders whose welfare is paramount for enhanced organizational performance and as such workers health and safety cannot be overemphasized. Oil and gas operations in Nigeria are mainly extractive in nature and employees are predisposed to dangerous and hazardous experiences such as mechanical, chemical, physical and biological risks factors. However, the International Labour Organization (ILO) (1959) emphasized that employee health and safety should be part of organizations culture aimed at protecting workers against health hazards as a result of work schedules. Cole (2002) noted that employees who are healthy and safe at work are more committed and utilize the best of their potentials to work thereby yielding results.

Also, upstream activities in the oil and gas sector in Nigeria are not devoid of waste materials which are grossly inimical to environmental sustainability. Waste management embodies integrated programs aimed at proper utilization of waste before their final disposal. Waste can be managed though the 3R’s also known as waste hierarchy (reduce, reuse and recycle). Waste management strategies embodying the 3R’s ensures maximum product benefits which generates minimal amount of waste to the environment in line with the Sustainable Development Goals (SDGs) (Miradha, Syaiful, Ridho, Awang, Kevin, Sanjoyo & Totok’2017).

In addition, organization’s commitment to community development is vital for enhanced financial performance. Organizations as corporate citizens are expected to compliment government effort by providing basic infrastructure especially in their host communities. Such efforts assist firms gain competitive advantage, promote the image/reputation of companies as well as improve their performance status.

1.2 Statement of the problem
Exploration of oil and gas resources carried out onshore and offshore by oil producing
companies in Nigeria have far reaching visible environmental and socio-economic impacts. Oil and gas activities have culminated in altering environmental and biological makeup, leading to ecological damage, emissions, pollution and landscape destruction. Employee’s health and safety is at stake due to interference with toxic substances. The environment is not spared of waste as a result of oil and gas operations thereby hampering environmental sustainability. The host communities where oil and gas explorations are carried out remain undeveloped leading to youth restiveness and militancy. Listing rules requires companies to disclose/report on their environmental footprints, health and safety strategies aimed at abating or mitigating employee work related accidents, waste management procedures/processes adopted to control or manage companies waste in order to reduce its impact on the environment and effort geared towards alleviating the standard of living of its host communities through the provision of infrastructural facilities and other basic amenities. These requirements are not met by most firms in the oil and gas sector and as a result, the business environment becomes volatile and unconducive for businesses to thrive as these firms are perceived as environmentally unfriendly which impedes corporate image and adversely affects financial performance. Extant environmental literature have documented studies on environmental and social disclosure and performance but this study aims at contributing to literature by empirically analyzing the relationship between environmental and social disclosure and financial performance of quoted oil and gas companies in Nigeria for the period (2012-2016).

1.3 Objective of the study
The main objective of this paper is to ascertain the impact of environmental and social disclosure on the financial performance of selected oil and gas companies quoted on the Nigerian Stock Exchange. The specific objectives are:
1. Investigate the impact of disclosure on employee health and safety (EHS) on return on capital employed.
2. Determine the effect of disclosure on waste management (WM) on return on capital employed.
3. Ascertain the relationship between disclosure on community development (CD) and return on capital employed.

1.4 Research questions
The research questions to guide the study are as follows
1. Does disclosure on employee health and safety (EHS) relate to return on capital employed?
2. To what extent does disclosure on waste management (WM) relate to return on capital employed?
3. Does disclosure on community development (CD) relate to return on capital employed?

1.5 Research hypotheses
The research hypotheses for the study are thus:
1. There is no significant relationship between disclosure on employee health and safety (EHS) and return on capital employed.
2. There is no significant relationship between disclosure on waste management (WM) and return on capital employed.
3. There is no significant relationship between disclosure on community development (CD) and return on capital employed.
2.0 Literature Review and Conceptual Framework

2.1.1 Nature of Environmental and Social Accounting Disclosure.

An increasing concern by the different stakeholders/green-house pressure groups on environmental sustainability has led to a paradigm shift in the way business activities are carried out. Organizations awareness on the need to disclose/account for its environmental/social issues has become extremely necessary owing to the fact that most investors, particularly institutional investors are sensitive to entities “green credential”, i.e information about company’s social and environmental policies and achievements. Environmental disclosure has been defined as information relating to the impact of company activities on the environment. It also consists of information pertaining to a firm’s strategies about its environmental activities and performance (Wilmhurst & Frost 2000). Berthelot, Cormier and Magnan (2003) opined that corporate environmental disclosure comprises set of information about firm’s environmental management policies which can take the form of qualitative statements, quantitative facts or assertions, financial statements, figures/footnotes. The World Business Council for Sustainable Development (WBCSD) (1999) defined environmental and social disclosures as the persistent endeavor by businesses to act in ethical manner by contributing to economic advancement as well as enhancing the quality of life of its employees, host community and the society at large. Environmental and social disclosure describes the provision of information by organizations on the impact of corporate activities and the efficacy of corporation’s programs as a medium of firms carrying out its social responsibilities (Parker, 1986). Also, Seetharaman, Mohamed, & Saravanan (2007) added that environmental accounting provides information both financial and non-financial by entities on the impact of its undertakings on the environment. It emphasizes gathering and assessing data on an entities environmental status taking into consideration its products life cycle from introduction to disposal, recycling or termination (Brainbridge, 2006).

2.1.2 Employee health and safety and performance

Employees in the Nigerian oil and gas sector are very vulnerable to hazardous substances prevalent in their work environment which impairs workers health. The need for disclosure on healthy and safer work conditions is gaining wider recognition as an expansive idea influencing quality of life of employees as well as its significant influence at the social/societal sphere. Employee health and safety encompasses the physical, mental and emotional welfare of an employee relative to the performance of his duties and as a result impacts positively on the achievement of organizational goals (Amponsah-Tawaiah & Dartey Baah (2011).

Disclosure on employee health and safety are reports/ programs geared towards the protection of employees against organizations activities; products and service hazards. Increased industrialization and economic development have further heightened industrial accidents and exposure to dangerous chemicals and toxic substances with their attendant health implications for employees and the environment. Employee health and safety concerns in Nigeria’s oil and gas sector are on the rise owing to the extraction of mineral resources and the risk associated with it. Cooper (1995) opined that as much as profitability is imperative to business, organizations must put in place an integrated mechanism that promotes quality management, employee safety and the environment. According to the International Labour Organization (ILO) statistics, about 2.3 million employees die from job related mishaps or illnesses every year, 317 million occurring on the job annually leading to absenteeism, increase in personnel cost and decrease in firm value. Developing countries endowed with mineral resources are prone to occupational, job and health related deaths most of which are as a result of employees engaging in hazardous activities. This impedes employee
performance adversely (Demba, Ceesay & Mendy 2016 as cited in Amponsah-Tawiah&Mensah2016) Organizations environmental and social policies are a boast towards environmental sustainability and enhance firm’s opportunity to gain increased market share and profitability.

2.1.3 Waste management and performance
Waste is inevitable in an economy. According to the Department for Environment, Food and Rural Affairs DEFRA, (2011) as cited in Akinlo & Iredele (2014). Waste is a component of economic activities carried out by households, firms and the government; it is a contribution to economic activity through resource recovery (material or energy). Waste management involves implementing the waste hierarchy through the 3R’s (reduce, reuse and recycle) in order to promote a clean environment and a healthy society. Miradha et al (2017) opined that waste reduction can be achieved by reducing material inputs to products with high waste potentials, waste classification and the use of advanced facilities in waste processing. Reuse of waste involves utilization of waste as materials for the same or other functions, while recycling comprises of further processing of waste for several other purposes. Firm’s disclosure on waste management strategy portrays a positive picture of organizations inclination to eco-efficiency which in turn impacts on performance, as consumers will be more willing to demand for products which in its entire life cycle is environmentally friendly i.e utilizes fewer resources and creates fewer waste and pollution.

2.1.4 Community development and performance
Organizations as corporate citizens are expected to give back to the society. Community development, an aspect of organizations social responsiveness holds that companies have a duty towards the society and business decisions should be linked to ethical values and respect for individuals, society and environment (ICAN 2014). Carrol (1991) posit that community development aligns with the philanthropic expectation placed on organizations at any given point in time. However, Oti, Effiong & Akpan (2017) buttressed that community development is anchored on firm’s initiative at cushioning the effect of their externalities on the host communities. Disclosure on community developments depicts a firm in good light and convinces stakeholders that an organization performs its operations in an ethical manner. Dessy & Rosita (2015) emphasized that utilizing local labour in a community as a form of job expansion strategy is very important as it reduces labour cost incurred by the company and impacts positively on the bottom-line. Banwarie (2011) also posited that firm disclosure of its environmental and social effort can be used as a tool to manage a firm’s relationship with its host community leading to a stable business environment devoid of protest /conflict influenced by key stakeholders.

2.2 Theoretical framework
2.2.1 Stakeholder theory
This is a theory with the view that corporate entities activities impact on a wider spectrum of the society rather than just the shareholders. Deegan (2000) opined that stakeholders should be furnished with information concerning organizations social and environmental impacts (i.e disclosures on the environment, health and safety, employment and community development/sponsorship). However, Friedman (1984) added that organizations have stakeholders who influence and are affected by its activities. Therefore, the specific information needs of various stakeholders must be disclosed in order to reduce information asymmetry.
2.2.2 Legitimacy theory
Legitimacy theory is a system oriented theory which proposes that organizations interact/influence and can be influenced by the environment (employees, suppliers, creditors, regulators, government and host communities) which it operates (Deegan 2002). Organizational survival and growth depends on the acceptance of these social systems. Deegan (2009) further buttressed that organizations consistent commitment to societal expectations legitimizes its operations. The social contract that exists between organizations and the society should be sustained by organizations embarking on social programs. Any breach of this contract threatens the survival and performance of these organizations.

2.2.3 Empirical review
Prior empirical studies have examined environmental and social disclosure and financial performance of firms Dadang and Subuh (2016), Dessy and Rosita (2015). However, Uwuigbe and Jimoh (2012) examined the extent of corporate environmental reporting practices in five cement manufacturing companies quoted in the stock exchange. The findings revealed that disclosure on environmental practices in the industry is still at its lowest ebb. Oba (2012) evaluated the relationship between three corporate social responsibility proxies’ community social responsibility (CD), human resource management (EHS) and charitable contribution on the market value of quoted conglomerates measured by Tobins equity Q using the multiple regression model. The study found that an insignificant relationship exist between community social responsibility, human resource management, charitable contribution and market value of the quoted conglomerates. In addition, Collins (2008) analyzed 60 manufacturing companies to ascertain indicators of sustainable business practices using the field survey methodology. The companies were divided into two groups; environmentally responsible/sensitive and irresponsible/insensitive based on the following indicator; employee health and safety (EHS), waste management (WM) and community development (CD). The study findings revealed that firms that adopt environmentally sustainable practices have higher firm value. Ullah, Hossain and Yakub (2014) also investigated environmental disclosure practices reported by listed textile industries in Bangladesh. The findings revealed that more than two-third (69%) of the sampled companies disclosed no environmental issues in their annual reports. Bhattacharyya (2014), investigated factors associated with the environmental and social reporting pattern of Australian firms. Global Reporting Index (GRI, 2002) guidelines were used in the study. The results indicated that the extent of social and environmental reporting by Australian firms was relatively low and larger organizations tend to disclose/report more on their environmental and social practices in the industrial transport industry. However, Tze, Boon and Yee (2014) examined the link between environmental improvements and financial performance of 78 leading companies listed in Bursa, Malaysia. Content analysis was used to analyze the information disclosed/reported by the firms. The result revealed that effort to ensure environmental improvements and activities helps firm gain competitive advantage and enhanced firm value.

3.1 Methodology
The sample size of this work comprise of 5 Oil and gas companies which were selected based on the availability of environmental and social disclosures in the company’s financial statement for the period studied. Data were collected from secondary sources (published annual reports for 2012-2016). In line with the Global Reporting Index (GRI) guidelines, a check list was developed comprising of three (3) themes, Employee Health and Safety (EHS) Waste Management (WM) and Community Development (CD), adopted from the work of Akinlo and Iredele (2014). The scoring method was employed for the study, if an item is disclosed; “I” is assigned and if not disclosed, “O” is assigned. A firm could score a
minimum of 0 point and maximum of 5 points. Data on return on capital employed (ROCE) were collected from the sample companies published financial statements documented in the Nigerian stock exchange fact book for the period 2012-2016.

**Model Specification**
The model below defines the relationship between the dependent variable and the independent variable.

\[
\text{ROCE} = a_0 + a_1 \text{EHS} + a_2 \text{WM} + a_3 \text{CD} + u
\]

Where

- \( \text{ROCE} \): Return on Capital Employed
- \( \text{EHS} \): Employee Health and Safety
- \( \text{WM} \): Waste Management
- \( \text{CD} \): Community Development

- \( a_0 \): Unknown constant to be estimated
- \( a_1, a_2, a_3 \): Unknown coefficient to be estimated
- \( u \): Error term.

**4.0 Result presentation**

**Table 1: Model Summary**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.580*</td>
<td>.336</td>
<td>.241</td>
<td>12.29534</td>
<td>2.452</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), COMMUNITY DEVELOPMENT, EMPLOYEE HEALTH AND SAFETY, WASTE MANAGEMENT
b. Dependent Variable: RETURN ON CAPITAL EMPLOYED

The model summary was carried out to determine the effect of the independent variables on the dependent variable. The data analysis revealed the R square and Adjusted R square which determines the coefficient of variation. The R Square is .336 and the Adjusted R square is .241. These indicates that the independent variables employee health and safety, waste management and community development explains 36.6% variation in the dependent variable (Return on Capital employed). The predictors are statistically significant; leaving only about 24.1% variability in return on capital employed to other factors not considered in this study.

**Table 2: Coefficients**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant) 61.344</td>
<td>23.973</td>
<td>2.559</td>
<td>.018</td>
</tr>
<tr>
<td></td>
<td>-9.438</td>
<td>4.549</td>
<td>-.453</td>
<td>-2.075</td>
</tr>
<tr>
<td></td>
<td>COMMUNITY DEVELOPMENT</td>
<td>9.053</td>
<td>3.765</td>
<td>.555</td>
</tr>
<tr>
<td></td>
<td>WASTE MANAGEMENT</td>
<td>-1.025</td>
<td>5.078</td>
<td>-.044</td>
</tr>
<tr>
<td></td>
<td>EMPLOYEE HEALTH AND SAFETY</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: RETURN ON CAPITAL EMPLOYED
The autonomous coefficient of the model highlights significantly the specific relationship between the independent variables and the dependent variable. The regression unstandardized coefficient of return on capital employed result shows that a 1% increase in returns will achieve a -9% decrease in community development and another -1% decrease in employee health and safety respectively. Indicating that an insignificant relationship exist between community development, employee health and safety and return on capital employed, this further implies that a unit expenditure on community development and employee health and safety will reduce firm returns on invested capital by 9% and 1% respectively.

### ANOVA\(^a\)

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1607.436</td>
<td>3</td>
<td>535.812</td>
<td>3.544</td>
<td>.032b</td>
</tr>
<tr>
<td>Residual</td>
<td>3174.682</td>
<td>21</td>
<td>151.175</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4782.118</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Dependent Variable: RETURN ON CAPITAL EMPLOYED

\(^b\) Predictors: (Constant), COMMUNITY DEVELOPMENT, EMPLOYEE HEALTH AND SAFETY, WASTE MANAGEMENT

The ANOVA table reveals the explanatory power of the dependent variable. The F-ratio statistic has a p-value below 0.05 for the 95% level of confidence. This result reveals that the dependent variable (return on capital employed) is significant but not strong enough to explain the relationship in the model. These means that companies do not efficiently manage their environmental and social practices as well as their disclosure effectively. These could adversely impair the company’s financial performance (ROCE).
The normality assumption carried out in (Fig. 1 above) conducts single or joint hypotheses tests on the model parameters. Using the histogram, we checked whether the normality test was adequately met. Brook (2008) stated that if the residuals are distributed normally, the histogram will present a bell shape. The histogram shape reveals that the residuals for the independent and dependent variables are normally distributed around its mean of 1.49 and standard deviation of 0.93. This implies that each company used in the study generate 1.49 per cent of it returns through proper disclosure of environmental variables such as employee health and safety, community development and waste management. The complex the environmental variables, the lower the returns of the companies and vice versa.

4.2 Discussion of Findings
The tables above presents the regression matrix for the dependent and independent variables, it is observed that there is no problem of autocorrelation in the result. The autonomous coefficient of the model highlights significantly the specific relationship between the independent variables and the dependent variable. The result revealed that a decrease in employee health and safety will result in a reduction in company’s financial performance by -1.025. Connoting that there is a negative relationship between employee health and safety and financial performance. Management effort in addressing employee needs as well as providing a healthy and safe work environment will enhance employee efficiency and increase financial performance in future. An unhealthy work environment poses a threat to organizational efficiency because there will be underutilization of employee time due to persistent health challenges. This finding is consistent with that of Oba (2012) whose findings
revealed an insignificant relationship between human resource management (EHS) and market value proxy by Tobin's equity Q.

However, the result also revealed that a rise in waste management will result in a significant growth in company’s financial performance by 9.053. This implies that waste management/control as an environmental strategy will not only secure environmental health / aesthetics but will also guarantee growth and expansion through increased customer loyalty and patronage. This finding aligns with that of Collins (2008) who stated that the green credential practices of firms are significantly correlated to huge firm performance. This finding is also consistent with that of Tze, Boon & Yee (2014) who found that firm’s initiative towards ensuring environmental development/ enhancement will help them have an edge over rivals thus creating an opportunity for increased returns.

Furthermore, the statistical significance between company’s environmental and social disclosure in terms of community development and financial performance as shown in the result revealed that a decrease in financial performance by -9.438 will lead to a unit decrease in community development. This implies that company’s returns would increase tremendously with greater social impacts through community development. This finding is at par with that of Banwarie (2011) who affirmed that firm’s contribution to societal growth through community development will help align company’s strategies with that of stakeholders in the community thus providing a serene environment for companies operations.

4.3 Conclusion and Recommendations
The paper concludes that disclosure on the environmental and social strides of quoted oil and gas companies in Nigeria is imperative to improved financial performance. The nature of oil and gas operations/activities is inherently complex and have multi-faceted impacts on the environment, employees and the host communities where these operations are been carried out. Disclosures by oil and gas companies of its actions, programs, and initiatives aimed at controlling/reducing the impact of company’s operation on the physical environment, employees health and safety, waste management and the development of its host communities whose source of livelihood may have been altered due to oil and gas activities depicts the company as being environmentally and socially accountable to both existing and potential customers hence increasing its financial standing and performance. Based on this analysis, disclosure on environmental and social impacts is requisite for enhanced financial performance. The paper therefore recommends that:

1. Oil and gas companies should improve on employee health and safety as part of their mission and vision statement for enhanced firm value.
2. Companies should constantly review their waste management strategy and employ bespoke technology in their waste management to mitigate waste impact on the environment.
3. Companies should also ensure sustained development of their host communities to avoid hostility by stakeholder groups which will have negative effect on its operations and in turn affect performance.

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