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Effect of Environmental and Social Disclosure on Return on Capital Employed of Listed Oil and Gas Companies in Nigeria

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Abstract
This study examined the impact of environmental and social disclosure on return on capital employed of listed oil and gas companies in Nigeria. The population of the study comprises of all the thirteen (13) oil and gas companies and eight (8) of those companies made up the sampled population. The study used three variable, the dependent, independent and control variable. Return on capital employed is the dependent variable, environmental and social disclosure is the independent variable while firm size and firm age are the control variables. The study used secondary data sourced from annual report and account of the sampled companies for the period 2010 to 2019. The study utilized descriptive statistics and correlation matrix to analyze the data. The study revealed that environmental and social disclosure have negative impact on return on capital employed (ROCE) of listed oil and gas companies in Nigeria. The study recommended that companies should incorporate environmental management system for environmental performance evaluation and management. This will enhance environmental disclosure and improve financial performance which will also enhance consistency in presentation and also comparability among companies.
Keywords: Environmental Disclosure, social disclosure, Return on Capital Employed
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Introduction

The growing environmental awareness and the intend for sustainable economic development is changing the direction of organizations toward environmental sensitivity. The use of natural resources and incessant emissions of greenhouse gases by organizations around the globe are on the increase. Emission from organizations operation is a major source of global warming and climate change. Environmental disclosure is an environmental management strategy where organizations communicate with stakeholder its performance on social and environmental matter. An organization cannot grow in isolation, the development of any organization is a function of its stakeholders and their belief in the firm. The information that is disclosed by an organization enlightens the stakeholders on the performance and the operation of the organizations. For an organizations to have a conducive business environment that will ensure continuity and enhance growth, it has to provide a balanced report that provide both quantitative and qualitative information to its stakeholders (Emeka, Olaoye & Ogundajo, 2021). Organization are encourage to sustain it contribution to its host community through corporate social responsibility, as this will minimize the negative impact of its activities on the environment. Okafor, A deleyi and Adusei (2021) argue that the quality of relationship that company has with its employees and other stakeholders is crucial to its success, as it is the ability to respond to competitive condition and a means of achieving mutual benefit. Organization therefore, are expected to provide proper accounting and disclosure that could be use to determine its future performance and its ability to satisfy it stakeholder. Therefore, there's a need for organization to account for environmental expenditure.

Several studies have been conducted by researchers to investigate the link between environmental and social disclosure on financial performance, but most of these studies were on other companies other than oil and gas companies that supposed to give much attention to environmental and social disclosure because of the nature of their activities. For instance, the study of Emeke, Olaoye & Ogundayo (2021), and Adebayo and Ezejiofor (2021) centred on consumer goods companies, Emmanuel and Ifeanyichukwu (2021) and Iiemena, Amedu, and Uagbale-Ekatah (2023) centred on manufacturing companies, Igbekoyi, Solanke, Adeusi, Alade and Agbaje (2021) centred on multi firms. The measurements of environmental and social disclosure in previous researches also were either based on content analysis or disclosure checklist, where most studies adopted content analysis as against disclosure checklist. Studies such as Akinlo, and Iredele, (2018); Ong et al, (2016) used content analysis while Ibrahim (2014) used disclosure index to measure environmental and social disclosure.

Furthermore, Oti and Mbu-Ogar (2018), Nwaiwu and Oluka (2018) who examined the impact of environmental and social disclosure and financial performance of listed oil and gas companies in Nigeria, measured environmental and social disclosure using proxies of employee health and safety, disclosure on waste management and community development.

The current study therefore examined the impact of environmental and social disclosure on return on capital employed of listed oil and gas companies in Nigeria using disclosure index and it focus on returns on capital employed

The main objective of this paper is to examine the effect of environmental and social disclosure on return on capital employed of listed oil and gas companies in Nigeria. The paper therefore is structured as follows: literature review, methodology, results and discussion, conclusions and recommendation

Literature review

Concept of environmental and social disclosure

Environmental and social disclosure according to Worae, Ngwakwe and Ambe (2018) are disclusures related to organizations, policies, attitudes or actions toward environmental impact, emissions, pollution, cleaning, planting or energy efficiency. It is a disclosure generated by environmental accounting system which is part of overall environmental information that is disclosed by company. To Alhasah and Anwarul Islam (2019) environmental and social disclosure involves report on activities carried out by a firm for sustaining the environment. It is a disclosure of information on the use and control of organization secretions and sewages into the environment. It comprises of the use of materials, procedures to decrease or eliminate the information of wastes of pollutant. Similarly, Amran and Sati-Nabiha (2017) define social and environmental disclosures as corporate social responsibility reports eco-reports and corporate accountability report. The authors further stated that the disclosure and corporate social and environmental activities of corporate entities may be either mandatory or voluntary, where the nature and extend of information need are to be disclosed is governed by the stipulated regulations and standard or showcasing the contribution of the corporate entities contribution to its host environment. Gatimbu and Wabwire (2016) posited that corporate environmental disclosure is the report on the impact of company's activities on the natural environment such as waste management, emission, pollution, and wetland and wildlife conservation. These views show that environmental and social disclosure is all about companies' reports on its level of financial involvement in provision of environmental and social needs of the places that they operate.

Environmental and social disclosures therefore, are all centered toward company's need for social responsibility. This will in turn draw the attention of the stakeholders toward the firm regarding its degree of responsiveness towards environment and social need of the community where its operate. The root of environmental and social disclosure is corporate social responsibility. Because of the devastating effects of company's activities, much attention is now given to companies who are environmentally responsible.

Return on Capital Employed (ROCE)

Return on capital employed (ROCE) refers to financial ratio that help assess the returns that a company generates with respect to the capital it puts to use. It is a ratio that can be used to assess a ccompany profitability and capital efficiency, it can help to understand how well a company is generating profit from its capital as it is put to used, this ratio is useful when comparing the performance of companies in capital intensive sector.

According to Najah and Jarboui (2013), ROCE measures how well a company utilizes its investment to generate earnings, and gives general indication of the company's efficiency. Similarly, Ilemena, Amedu and Uagabe-Ekatah (2023) define ROCE as an efficiency guage to show the intensity and profitability of overall capital employed. Wijesinghe and Senaratne (2014) also stated that return on capital employed is the measure of firm's efficiency at generating profits from every unit of capital employed. Ong, Goh, Thai and Teh (2016) averred that return on capital employed is the measure of overall firm performance that compares the earnings before interest and tax to the capital employed in the firm. This ratio detailed out the earning power of book value of investments and is frequently used in comparing two or more firms.

Environmental and Social Disclosure and Return on Capital Employed

Environmental and social disclosure issues have captured the interest of the business community and the general public in recent times. As concerns regarding environmental and social friendly practices increase, corporate organizations are facing the challenge of disseminating information about environmental and social issues in their annual reports. The Literature shows that environmental and social disclosure can influence financial performance (Teoh et al, 2016) Angelia and Suryaninsih (2015) posited that the better the company improved its environmental performance, the better the direct impact on the development of long-term corporate performance.

Empirical evidence by prior researchers suggest that environmental and social disclosure has impact on financial performance. Nwaiwu and Olua (2018) and Ong et al (2016) opined that corporations need sustainable business practices in order to stay competitive. The authors further explained that by disclosing environmental and social information, a company can enhance its reputation and gain competitive advantages over other companies. Abubakar, Moses and Inuwa (2017) were of the view that environmental and social disclosure is significance because it helps stakeholders to recognize the impact those organizations have on the environment and the impact the environment has on the organizations.

Where a company discloses information on environmental and social responsibility, it increases profitability which may be reinvested in acquisition of new assets to be employed in operations.

return on capital employed on environmental and social disclosure lead to increase in profitability, part of which will be retained and reinvested by companies or a higher dividend to shareholders resulting from enhanced profitability will be reinvested in additional shares which may yield greater profit thereby higher level of ROCE.

Empirical Review

Emeke, Olaoye & Ogundayo (2021) examined the effect of social and environmental disclosure on the performance of listed consumer goods producing companies in Nigeria. The sampled population consist of 18 companies out of 20 listed consumer goods companies, the study used secondary data sourced from annual reports and accounts of sampled firm for the period 2010 – 2019. The study utilize multiple regression analysis to analyzed the study data. The study revealed that social and environment disclosure has significant effect on financial performance of listed consumer goods producing companies in Nigeria. The study recommended that managers should ensure that information about their social practices is well communicated in an understandable manner to the stakeholders.

Igbekoyi, Solanke, Adeusi, Alade and Agbaje (2021) examined the effect of environmental accounting disclosure and financial performance of listed multi firms in Nigeria. The study used secondary data obtained from published annual reports of the companies for the period 2011 – 2020. Environment disclosure is the independent variable while return on asset and earnings per share are the independent variable. Descriptive statistics and panel regression analysis were used to analyse the study data, it was discovered that environmental accounting disclosure had a significant and positive effect on earnings per share but a negative and insignificant effect on return on asset. The study recommended that multination companies and other Nigerian firm, should make efforts to disclose their environment related activities even though it is not required by law, as it has shown evidence of its influence on earnings on shares of companies.

IIiemena, Amedu, and Uagbale-Ekatah (2023) examined the effect of social and environmental disclosure on gross profit margin and return on capital employed of manufacturing firms in Nigeria. The study used secondary data sourced from the annual reports and sustainability reports of the sampled firms for the period 2012-2021. Regression analysis were utilizes to analyzes the study data, the study result revealed that there is a significant positive effect between environmental and social disclosure with gross profit margin. However, no significant effect with ROCE, the study recommended that government should put in place as policy, annual awards and recognition programs for firms with near or 100% disclosure to encourage more sustainability-driven towards the economy towards the achievement of the sustainable development goal agenda

Adebayo and Ezejiofor (2021) examined the effect of voluntary environment disclosure on the corporate performance of quoted consumer goods manufacturing firm in Nigeria. The study used secondary data sourced from annual report and account of sampled firm. Regression analysis technique were used to analyze the study data, the result revealed that voluntary disclosure is positively related to the current ratio and a quick ratio of quoted manufacturing companies in Nigeria. The study recommended that further fortify corporate governance practices among firms should be severe execution of Nigeria stock exchange sustainability disclosure guideline for manufacturing firm

Arumona, Lambe & Ogunmakinde(2021) examined the effect of environmental disclosure on financial performance of quoted oil and gas companies in Nigeria. The study used secondary data sourced from annual report and account of the sampled companies for the period 2010-2019. Environment disclosure is the independent variable while return on asset and net profit margin were the independent variables. The data were analyzed using multiple regression analysis. The study revealed that environment disclosures has a positive effect on financial performance and profitability. The study recommended that since Nigeria economy is highly dependent on the oil and gas resources, the continued insistence on full compliance to every form of best practice in the oil and gas sector is of great and immerse benefit to the industry players, oil and gas firms, the economy at large and to the citizenry of the country.

Emmanuel and Ifeanyichukwu (2021) examined the effect of environment accounting disclosure and financial performance of manufacturing firms in Nigeria. The study used secondary data collected from index and corporate annual reports of the sampled manufacturing firms for the period 2010-2019. Descriptive statistics, correlation matrix and regression technique were utilize to analysed the study data. The study revealed that environmental accounting disclosure has a significant effect on financial performance of manufacturing firms in Nigeria. The study recommended that companies should increase the extent to which they disclose the environmental impact of their firms activity in the annual report for stakeholders assessment of their performance.

Legitimacy Theory

Legitimacy theory posits that the manner in which a company runs its business and reports on its activities will be influenced by the social values of the society and community in which the company exists. Ahmad, Suleiman and Siswwantoro, (2003) argue that managers act as custodians of the organisation and its operational activities and place upon them the burden of managing in the best interest of owners of business. Setyawan and Kamilla (2016) states that an organisation will continue to follow the development of the emerging norms in society. Hence, the norms in the community are frequently subjected to change and companies are expected to always follow its development. According to Ofoebbu, Odoemelam and Okafor (2018), legitimacy theory grants an organization the right to carry out its operations in agreement with society's interest. Hence organisation seeks to operate within the norms and aspiration of their respective communities. Aburaya (2012) stated that the argument underlying legitimacy theory is that organisations can only survive if they operate within the framework of the society's norms and values.

Legitimacy theory is relevant to this study because the complexity and rapid changes in our today's society has brought a lot of changes in norms. From stone age to jet age there has been different changes in norms and aspirations of the communities. Legitimacy theory is not static, but changes over time depending on the relationship between the organisations and the supervising and monitoring authorities, most likely the government (Zhang, 2013).

Methodology

The study used expo facto research design. The population of the study consist of the entire thirteen (13) oil and gas companies listed on the Nigeria stock exchange as at 31 December 2019. While eight (8) companies constitute the sampled size. The study use used secondary data sourced from the annual report and account of the sampled companies. Three variables were used these are: dependent, the independent and the control variable. Environmental and social disclosure is the independent variable, Return on capital employed (ROCE) is the dependent variable while firm size and firm age are the control variable.

The following is a description of the model used for the study:

$ROCEit= \beta_0 it + \beta_1 ESDit+ \beta_2 FRMAit + \beta_3 FRMSit+eit$

where; ROCE =Return on Capital Employed, ESD= Environmental and Social Disclosure, FMA = firm age, FMS = firm size, β_o= intercept, β_1- β_3= coefficient of the independent variables, e=error term, it = firm and time.

Study Variables and Measurements

S/N	Variable	Variable Type	Acronym	Measurement	ExpectedSign
1.	Env.and social disc.	Independent	ESD	Disclosure checklist	
3.	Return on Capital Employed	Dependent	ROCE	EBIT/CE	+
5.	Firm Age	Control	FMA	Years past sinceestablishment	+
6.	Firm Size	Control	FMS	value of Total Assets	+

Source: Researcher's Design, 2023

Descriptive Statistics

Table 1

Variables	Obs	Mean	Std.Dev.	Min	Max	Skew.	Kurt.	JB Test=P<5
ESD	72	0.261	0.353	0.4	1.000	-0.125	2.827	0.000
ROCE	72	2.749	25.527	-58.196	187.132	4.908	39.769	0.000
FS	72	7.890	0.452	7.115	9.031	1.17	4.005	0.000
FA	72	3.300	0.472	1.946	3.892	-1.013	3.258	0.000

Source: Researcher's Computation, 2023

The result of the descriptive statistics presented in Table 1 is pooled on yearly basis for the period of 9 years. Each variable was observed from 72 data points, which means that the study used 432 data points in total. Table 1 shows that the mean value for ESD is 0.261 with the maximum disclosure index of 1 and minimum of 0.4. The standard deviation value of 0.353 implies that the disclosure index within the period of the study is clustered around their mean. The skewness value of -0.125 further revealed that the data is distributed on the left-hand side of the mean. More so, the kurtosis value of 2.827 < 3 further confirms that the data are closely distributed below the mean. The descriptive statistic for ROCE shows a 2.749 mean ratio, minimum ratio -58.196, maximum ratio 187.132 with a standard deviation of 25.527. The standard deviation result returned a large number implying that return on capital employed ratio is widely spread out from the mean. The skewness value 4.908 means that the ratio is distributed above the mean of the sample with higher values. The kurtosis 39.769 > 3 (mean value) indicated a positive implying that there are more observations above the sample average.

FS is a control variable fitted into the model and measured as the log of total assets. The mean value is 7.890

million with the maximum value of 9.031million and the minimum value 7.115 million. The standard deviation of 0.452 signifies that most of the data are clustered around the mean. Skewness value of 1.17 reveals that the total assets of the companies are fairly distributed around the mean and fairy skewed. The kurtosis value of 4.005 > 3 means the data is distributed with larger value above the mean indicates that FS data is distributed above the sample mean and few are having large ratio.

FA stands for firm age as control variable that is of interest to the study. The mean value of 29.75 shows average age of the companies in years. The standard deviation of 11.29 implies that most company's age is distributed among from the mean. The skewness value of -0.29962 implies that most of the companies' ages are less than the mean age. This is further corroborated by the kurtosis value of 1.9698 < 3 which implies distribution below the sample mean.

Correlation Matrix

The correlation analysis presented in Table 2 below shows the canonical correlation between the dependent variables (ROCE) and the set of the independent variables (ESD, FS, FA). The canonical correlation analysis was used to identify and measure the association between the dependent and the independent variables and to test whether there exists a significant linear correlation among the variables.

Correlation Matrix: ROCE Model
Table 2

Variables	ESD	FA	FS	ROCE
ESD	1			
FA	-0.047	1		
FS	0.181	0.247	1	
ROCE	0.024***	0.111	-0.079	1

Source: Researcher's computation, 2023.

The correlation that is of most interest to the study is the one that predicts the relationship between the dependent and independent variables. The correlation between ESD and ROCE is 0.024, $p \geq 0.1$ which predicts a positive but not statistically significant relationship at 10% degree of significance. It means that a unit increase in environmental and social disclosure, is associated with 0.024 increase in return on capital employed but cannot be relied upon for the conclusion

Environmental and Social Disclosure and Return on Capital Employed
Robust Regression Results (ROCE)
Table 3

Variables	OLS	Robust
Constant	27.418(0.614)	19.763(0.021)
ENSD	3.883(0.662)	-0.292(0.832)
FS	-7.001(0.328)	-3.887(0.001)***
FA	7.780(0.251)	4.570(0.000)***
R-Squared	0.027	0.281
Prob>F	0.599(0.629)	(0.000)8.898
Observation	72	72

Note: * *** p<0.01, ** p<0.05, * p<0.1
Source: Researcher's computation, 2023.

The pooled OLS regression shows a R-squared value of 0.027 which means that about 2.7% variation in return on capital employed of the sampled companies for the period of the study is explained by the independent variables. However, the F-statistic value of 0.6291 with its associated p-value of 0.5987 ($p>0.05$) signifies that the model is not valid for inference, Though, when considered jointly with other models of the study as multivariate analysis, the model is valid at 5% level of significance. In the same vein, the model failed heteroskedasticity jointly with other models as a multivariate analysis. The robust regression model is presented to correct the heteroskedasticity problem. Therefore, the robust regression is used for testing the hypothesis.

The robust regression result shows R-squared value to be 0.284, meaning about 28.4% variation in ROCE is influenced by ESD. This is also supported by the F-statistic value of 8.898 with its associated p-value of 0.000. This implies that the robust regression model is valid for statistical inference and hence used for testing hypothesis. The robust regression result reported in Table 3 shows that ESD has an insignificant negative influence on return of capital employed. This is revealed by the ROCE/ESD (-0.292), F=8.898; P=0.832, >0.05.

Conclusion and Recommendation

Environmental disclosure is an environmental management strategy where organizations communicate with stakeholder its performance on social and environmental matter. The information that is disclosed by an organization enlightens the stakeholders on the performance and the operation of the organizations. This study conclude that environmental and social disclosure had negative and non-significant impact return on capital employed. The study recommended that companies should incorporate environmental management system for environmental performance evaluation and management. This will enhance environmental disclosure and improve financial performance. This will also enhance consistency in presentation and also comparability among companies.

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