

# Environmental Reporting and Sustainability Reports in Oil Companies in Nigeria

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## Abstract

Environmental reporting is crucial for corporate survival as it builds corporate image, but certain procedures and regulations must be put in place to guide such reporting. Accordingly, this study examined environmental reporting and sustainability reports by oil companies in Nigeria with the aim of assessing the relationship between corporate environmental reporting and determinant of sustainability reports. Ex-post-facto and survey research design were adopted and data were sourced from structured questionnaires administered to corporate respondents and a 56 item sustainability reporting index adapted from the Global Reporting Initiative. Descriptive statistics were carried out, one way and two factors ANOVA and Post hoc test were all conducted. The study provided evidence of a positive and significant variation between corporate environmental reporting and determinants of sustainability reports in petroleum companies in Nigeria. The study recommended that management of petroleum companies should ensure compliance with corporate sustainability reporting.

**Keywords:** environmental reporting, sustainability reports, reporting indicators, Nigeria

## 1. Introduction

Green politics is both a communal and economic imperative for the modern world. Environmental reporting is a medium through which corporate environmental issues are communicated. Over the decades, there has been increasing debate regarding environmental management world over mainly based on natural degradation initiated by economic development.

The importance of transparency and disclosure in environmental reporting cannot be overemphasized as it has engrossed international communities and environmental bodies for its role. Hence corporations all over the world are now motivated to report their activities and practices in particular concerning the environment (Islam 2010). Reference to petroleum companies has shown that environmental calamities emanating from environmental issues, such as oil spillage, etc causes disasters to the surrounding environment and raised worries from the public especially communities where such companies operate (Cormier, Magnan & Van Velthoven 2005; Islam 2010, Uwaoma and Ordu 2016, Nwobu 2017).

Inability to checkmate and regulate oil explorative actions of these companies will not only manifest in severe and avoidable environmental harm but May also, metamorphose to severe health hazards. Again, the cultures, economic and social structure of local and indigenous communities are often affected. To make matters worse, environmental laws in emerging economies like Nigeria are grossly ineffective and substantively inadequate partly because they are inadequately enforced (Nwobu, 2017).

It is expedient to state that sustainability reporting is a valuable tool for managing and measuring the progress of petroleum companies. This is because it is a strategy for constructive stakeholder engagement which fosters harmonious alignment of stakeholder's concerns. This paper sheds light on the adequate Environmental Reporting – both financial and non-financial and its importance in the industry in reaching out to stakeholders.

Various merits have been identified as cogent for firms' involvement in sustainability reports among them are:

1. It enhances competitive advantage: usually organization that engages in environmental and sustainability reporting is perceived by stakeholders as not harnessing the environment but also seeing to well-being of the people hence gain competitiveness among others. (Jones, 2010).
2. Sustainability reporting builds corporate image: Socially and environmental friendly firms are graded to have good corporate image and this leads to improve performance.
3. The attraction of more capital: sustainability responsive firms are perceived to be contributing and positively influencing the environment where they operate and when sourcing fund from the capital market investors are attracted to patronize them (Murray *et al.*, 2006; Kwanbo, 2011, Madugba, *et al* 2020).

## 2. Theoretical Framework for Sustainability Reporting

This work receives theoretical support and justification from the legitimacy and stewardship theories. The legitimacy theorist upholds that there is a social bond connecting an entity and its constituents, in which “organization agrees to undertake various communally desired actions in return for endorsement of its objectives, other rewards and ultimate survival” (Guthrie and Parker, 1989). Under this perspective, organizations would employ numerous legitimate means to shield their legality (Ashforth and Gibbs, 1990; Suchman, 1995) and be in charge for prospective apparent legitimacy gaps.

Stewardship theory is also crucial when discussing environmental reporting and sustainability reports because firms ought to fashion their goals to include the stakeholders as they have interest in the firm Khan, Hussain, Ur-Rehman, Maqbool, Ali and Numan (2019). The responsibility of a firm is not just to make a profit but also to satisfy interest groups that have a claim in the firm Asogwa, Ofoegbu, Nnam, and Chukwunwike (2019) Johl and Khan (2019). This study adopted both theories because both centers on the relationship between the firm and the environment where it exist.

### 2.1 Empirical Literature Review and Hypotheses Development

Effective corporate reporting mechanism entails the integration of sustainability report into the annual reports. Corporate accountability is not in view without a sustainability report, thus necessitating the need for sustainability reports and it's disclosing to be incorporated. Sustainability reports may be published as stand-alone reports or incorporated into corporate annual reports. In Nigeria, this received attention. Permitting voluntary reporting by petroleum companies in Nigeria especially as there is no strong legislation stipulating what should be reported (Asaolu, Agboola, Ayoola & Salawu, 2011). Nigeria as a nation is yet to determine the how, nature and standard of sustainability reporting as well as its conformity with the international community.

Parve and Satirenjit (2019) in a study on nexus of comprehensive green innovation, environmental management system- 14001-2015 and firm performance found that implementation of a comprehensive green innovation will manifest in reduction of production cost, minimization of resource consumption and improve the performance of firms.

Ofoegbu, Odoemelam and Okafor (2018) using data extracted from annual reports of 303 companies both in Nigeria and South Africa found that greater number of companies in both countries influences environmental disclosures.

Analysis of sustainability reporting practice in mining, oil and gas companies in Indonesia (GRI guidelines approach) was investigated by Permatasari in 2018. The study found that there is an increasing trend of sustainability reporting practices, but environmental, social and economic indicators are consistently increasing while other indicators are missing.

In like manner, Cheema and Javed (2017) reported that rising demand for CSR motivated the application of management tools for green human resource management which most organizations have adopted. The paper concluded that effective CSR improves sustainable environment.

Martina and Emma (2016) examined how sustainability reporting has changed in the oil and gas industry in Europe and how the companies have followed the GRI guidelines. The study adopted quantitative method and content analysis, and found that companies have increased their level of compliance but there is difference in level of compliance amongst the companies.

Ismail and Rahman (2016) found that the quality of environmental disclosure of the sample companies is relatively high compared to previous studies. This study, however, failed to identify the measures of quality of environmental reporting adopted in the study. Their finding is supported by Eljayash, James and Kong (2012), Eljayash, Kavanagh, and Kongl (2013), and Sulaiman, Abdullah, and Fatima (2014). These studies are not in Nigeria. The study of Uwaoma and Ordu (2016) lack quantitative proof as it was more of expressions hence cannot be relied on.

Schneider, *et al* (2013) in their study found environmental, health and safety of oil and gas companies in United Kingdom and the US to be in the middle/medium level of maturity but with significant gap in performance. Implying

that sector has made progress by embracing sustainability, but still have to do more especially in compliance to clean Air Act, Spill and progress management.

The above gaps necessitated the urgent need to find out the variation between corporate sustainability reporting and environmental reporting in oil companies in Nigeria, with the hypotheses

**H0:** *The variation between corporate sustainability reporting and environmental reports in oil companies in Nigeria between 2014 and 2018 is not significant.*

### 3. Research Methods

This study adopted the survey and longitudinal research designs. The survey was used to extort data from annual reports and the stand-alone reports, while the longitudinal was used because repeated observations of the same units (oil and gas companies in this study) over a period of time were utilized. Ssekiyivu, Mwesigwa, Bananuka, and Namusoby (2018) adopted survey design in a similar study. Sustainability reports were measured with a 56 item of GRI. Meek, Robert & Gray (2006), Nwobu (2017) and Cyriac (2013) adopted same measure for sustainability reporting. In this study, indicators for sustainability reporting adopted are thus: economic, environmental, social and governance. The views of the corporate respondents on factors influencing sustainability reporting and the performance attached to such factor were ascertained with the survey. The population of this study is made up of 14 petroleum companies (Directory of the Nigerian Stock Exchange, 2015). Purposively nine companies were selected base on availability and the nature of data required for this study.

### 4. Empirical Result and Discussion

The results of the study are presented in Tables 1 – 4 and Figure 1. Some descriptive statistics such as the minimum, maximum, variance, mean, skewness, kurtosis and their standard error as applicable are presented in Table 1.

Table 1

Sustainability variables	Year	Min	Max	Var	Mean $\pm$ SE	Skew $\pm$ SE	Kurt $\pm$ SE
ECOIND (n = 15)	2014	0.00	9.00	13.171	5.200 $\pm$ 0.937	-0.186 $\pm$ 0.580	-1.725 $\pm$ 1.121
	2015	1.00	9.00	13.029	5.800 $\pm$ 0.932	-0.612 $\pm$ 0.580	-1.638 $\pm$ 1.121
	2016	1.00	9.00	10.171	5.800 $\pm$ 0.823	-0.339 $\pm$ 0.580	-1.651 $\pm$ 1.121
	2017	1.00	9.00	11.971	5.600 $\pm$ 0.893	-0.398 $\pm$ 0.580	-1.652 $\pm$ 1.121
	2018	1.00	9.00	13.924	6.067 $\pm$ 0.963	-0.746 $\pm$ 0.580	-1.618 $\pm$ 1.121
EVIND (n = 16)	2014	1.00	1.00	0.000	1.000 $\pm$ 0.000	N/A	N/A
	2015	1.00	2.00	.163	1.188 $\pm$ 0.101	1.772 $\pm$ 0.564	1.285 $\pm$ 1.091
	2016	1.00	2.00	.063	1.938 $\pm$ 0.063	-4.000 $\pm$ 0.564	16.000 $\pm$ 1.091
	2017	1.00	2.00	.117	1.875 $\pm$ 0.085	-2.509 $\pm$ 0.564	4.898 $\pm$ 1.091
	2018	1.00	3.00	.496	1.688 $\pm$ 0.176	0.537 $\pm$ 0.564	-0.643 $\pm$ 1.091
GOVIND (n = 15)	2014	0.00	7.00	3.552	5.533 $\pm$ 0.487	-2.091 $\pm$ 0.580	4.985 $\pm$ 1.121
	2015	0.00	7.00	3.210	5.733 $\pm$ 0.463	-2.548 $\pm$ 0.580	7.935 $\pm$ 1.121
	2016	1.00	6.00	1.743	5.200 $\pm$ 0.341	-2.570 $\pm$ 0.580	7.682 $\pm$ 1.121
	2017	1.00	7.00	1.810	5.333 $\pm$ 0.347	-2.536 $\pm$ 0.580	8.372 $\pm$ 1.121
	2018	1.00	8.00	2.838	6.533 $\pm$ 0.435	-2.859 $\pm$ 0.580	9.229 $\pm$ 1.121
SOCIND (n = 12)	2014	1.00	8.00	6.788	3.333 $\pm$ 0.752	0.894 $\pm$ 0.637	-0.747 $\pm$ 1.232
	2015	1.00	8.00	8.205	3.750 $\pm$ 0.827	0.440 $\pm$ 0.637	-1.515 $\pm$ 1.232
	2016	1.00	8.00	6.568	4.250 $\pm$ 0.740	0.328 $\pm$ 0.637	-1.552 $\pm$ 1.232
	2017	2.00	8.00	5.720	4.583 $\pm$ 0.690	0.211 $\pm$ 0.637	-1.628 $\pm$ 1.232
	2018	1.00	8.00	9.152	4.333 $\pm$ 0.873	0.043 $\pm$ 0.637	-1.918 $\pm$ 1.232

**Key:** **Min** = Minimum **Max** = Maximum **Mean  $\pm$ SE** = Mean  $\pm$  its Standard Error

**Skew  $\pm$ SE** = Skewness  $\pm$  its Standard Error **Kurt  $\pm$ SE** = Kurtosis  $\pm$  its Standard Error

N/A = Not Applicable

The results of the two-factor analysis of variance of sustainability variables across the years are presented in Table 2. At  $p$ -value  $< 0.05$ , the sustainability variables were observed to have a significant effect, that is, there is a significant difference between the sustainability variables across years while yearly variation has no significant effect. The interaction between the yearly variations and sustainability variables was also observed to have no significant effect.

Table 2. Two Factor Analysis of variance of sustainability variables across the years

SV	SS	df	MS	F	p-value
Corrected Model	943.221 <sup>a</sup>	19	49.643	9.123	0.000
Intercept	5144.199	1	5144.199	945.381	0.000
Sustainability variables	897.049	3	299.016	54.952	0.000
Year	24.429	4	6.107	1.122	0.346
Sustainability variables*Year	22.254	12	1.855	0.341	0.981
Error	1469.179	270	5.441		
Total	7528.000	290			
Corrected Total	2412.400	289			

**Keys:** SV – Source of Variation      SS – Sum of Squares      df – degree of freedom  
 MS – Mean Squares      F - F statistics      p-value – probability value

The observed significance difference inferred in Table 2 is more clearly presented in Table 3. No significant difference was observed between the five years; 2014 with mean  $\pm$  its standard error  $3.767 \pm 0.308$ , 2015 with  $4.118 \pm 0.308$ , 2016 with  $4.297 \pm 0.308$ , 2017 with  $4.348 \pm 0.308$  and 2018 with  $4.655 \pm 0.308$ . Significant differences were observed between the sustainability variables except for ECOIND and GOVIND that are not significantly different from each other. Based on their mean and standard error, the effect of the environmental variable is as follows in increasing order; ECOIND ( $5.693 \pm 0.269$ ), GOVIND ( $5.667 \pm 0.269$ ), SOCIND ( $4.050 \pm 0.301$ ), and EVIND ( $1.538 \pm 0.261$ ).

Table 3. Post Hoc Test on the effects of sustainability variables and year as a source of variation

Sustainability Variables		Year	
ECOIND	$5.693 \pm 0.269^c$	2014	$3.767 \pm 0.308^a$
EVIND	$1.538 \pm 0.261^a$	2015	$4.118 \pm 0.308^a$
GOVIND	$5.667 \pm 0.269^c$	2016	$4.297 \pm 0.308^a$
SOCIND	$4.050 \pm 0.301^b$	2017	$4.348 \pm 0.308^a$
		2018	$4.655 \pm 0.308^a$

**Keys:** Data Presentation = Mean  $\pm$  Standard Error  
 Values with different superscripts are significantly different

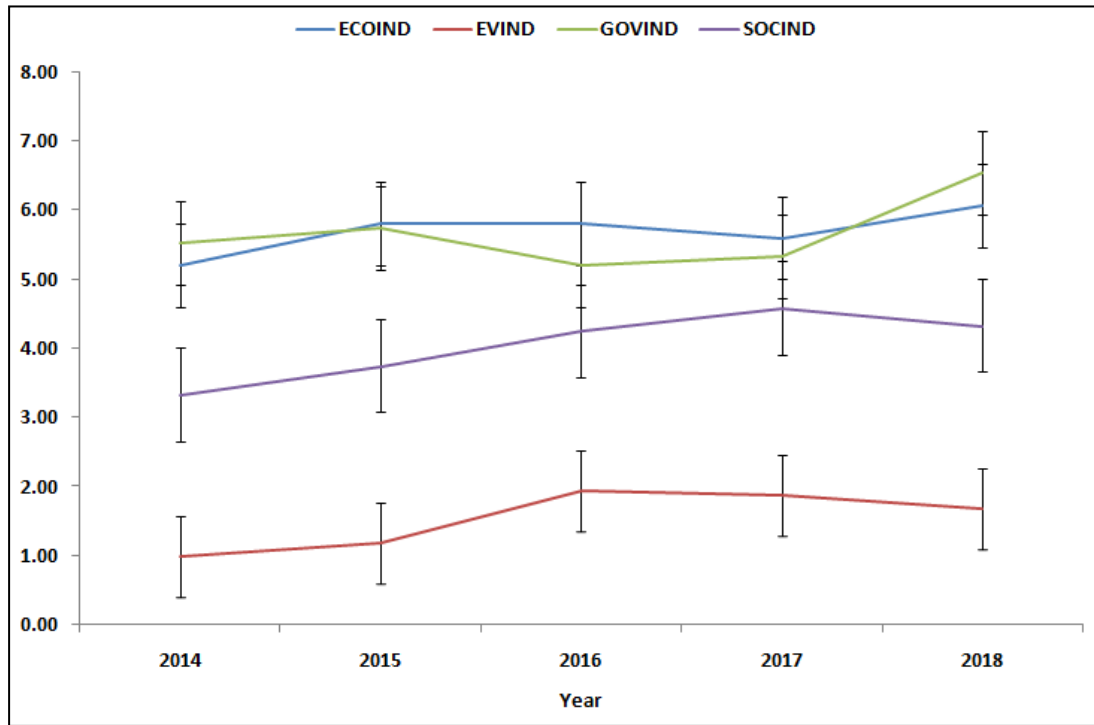


Figure 1. Marginal mean with standard error plot of sustainability variables across year

Figure 1 shows the marginal means with standard error plot of the sustainability variables across the year (2014 – 2018). It can be seen that EVIND varies differently from the other variables. The plot of ECOIND and GOVIND can be seen to intersect across the year which implies the possibility of a no difference between the two variables across the year. However, a different case can be observed from the plot of SOCIND. SOCIND was observed to vary differently from other variables in the year 2014, 2015 and 2018, while it was observed to intersect with ECOIND and GOVIND (Figure 1).

The observations visualized from Figure 1 were discovered to be reinforced in Table 4 which presents the result of a one-way analysis of variance and its post hoc test conducted on the sustainability variables per year. There was no significant difference between ECOIND and GOVIND in 2014 and 2015 but there exists a significant difference between every other sustainability variable. In 2016, only EVIND was observed to be significantly different from the other sustainability variables while ECOIND, GOVIND, and SOCIND were observed to be similar. The same observation was made in 2017 except for the significant difference observed between GOVIND and SOCIND while the mean of ECOIND was significantly similar to them separately.

Table 4. One Way Analysis of variance of the sustainability variables for each separate year and its Post Hoc Result

Sustainability variables	2014	2015	2016	2017	2018
<b>ECOIND</b>	5.200 ± 0.937 <sup>c</sup>	5.800 ± 0.932 <sup>c</sup>	5.800 ± 0.823 <sup>b</sup>	5.600 ± 0.893 <sup>b</sup>	6.067 ± 0.963 <sup>bc</sup>
<b>EVIND</b>	1.000 ± 0.000 <sup>a</sup>	1.188 ± 0.101 <sup>a</sup>	1.938 ± 0.063 <sup>a</sup>	1.875 ± 0.342 <sup>a</sup>	1.688 ± 0.176 <sup>a</sup>
<b>GOVIND</b>	5.533 ± 0.487 <sup>c</sup>	5.733 ± 0.463 <sup>c</sup>	5.200 ± 0.341 <sup>b</sup>	5.333 ± 0.347 <sup>b</sup>	6.533 ± 0.435 <sup>c</sup>
<b>SOCIND</b>	3.333 ± 0.752 <sup>b</sup>	3.750 ± 0.827 <sup>b</sup>	4.250 ± 0.740 <sup>b</sup>	4.583 ± 0.690 <sup>b</sup>	4.333 ± 0.873 <sup>b</sup>
<b>F (p-value)</b>	11.793 (0.000)	12.405 (0.000)	10.136 (0.000)	9.532 (0.000)	11.809 (0.000)

**Keys:** Data Presentation = Mean ± Standard Error  
 Values with different superscripts are significantly different

## 5. Summary and Conclusion

This study environmental reporting and sustainability reports in oil companies in Nigeria adopted the survey and ex-post-facto research designs. This is because of the nature of the data required. The dependent variable (environmental reporting) was measured with a 56 item sustainability reporting index from GRI. Out of a population of fourteen (14) quoted oil companies in Nigeria, Nine (9) was selected based on the availability and the nature of data needed. From the result obtained from our test of hypotheses of both the one and two way ANOVA, we conclude that there is positive and significant variation between corporate sustainability reporting indicators and the determinant of sustainability reporting in petroleum companies in Nigeria. Our finding corroborates the studies of Nwobu (2017) and Eljayash *et al* (2012). We recommend that management of oil companies should ensure compliance with the guidelines of corporate sustainability reporting as this portrays good image of their company. This finding implies that there is a shift in sustainability reports of petroleum companies. This study has contributed in reviewing the previous studies and is most current in petroleum companies in Nigeria. It has also shown that petroleum companies are getting concerned about sustainability reports and the environment in which they operate. However, adequate data on environmental and sustainability reports threatened the attainment of the objective of this study, but the researchers were able to overcome this through the rigorous search on the internet and other available documents. Hence, we suggest that further study can be carried out in other sectors of Nigeria's economy or perhaps in other developing nations in the same sector.

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