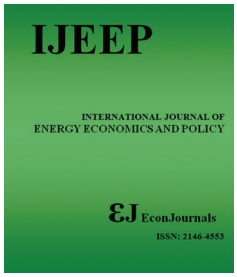

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An Assessment of Sustainability Disclosures in Oil and Gas Listed Companies in Nigeria

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ABSTRACT

This paper assesses the level of corporate sustainability disclosures in an environmentally-sensitive industry in Nigeria - the oil and gas industry. The paper aims to evaluate the extent of sustainability disclosure in the annual report's oil and gas industries. The study retrieves secondary data on sustainability disclosure for 10 years (2010 - 2019) from eight oil and gas industries listed in the Nigerian stock exchange through a desktop approach and content analysis methodology. Content analysis of the sustainability disclosure is to identify items of sustainability disclosed in the annual reports. The paper assesses the extent of disclosure by adopting the global reporting initiative's scoring index. Findings from the analysis indicate a very low-level climate change and environmental pollution disclosure. Only 13.8% of the companies disclosed their impact on climate change and environmental pollution. On the contrary, all the companies revealed their community investment, which this paper regards as legitimizing smokescreen ecological pollution. The paper contributes to the literature by connecting the legitimacy theory to the decoying sustainability disclosure of oil and gas companies in Nigeria. In conclusion, the study recommends more stringent sustainability disclosure policies for the oil and gas to provide more information for environmental and climate change advocates and investors in censuring the companies, which might instill improved environmental compliance.

Keywords: Climate Change, Greenhouse Gas Emissions, Governance Indicators, Oil and Gas, Renewable Materials, Social Indicators, Sustainability Disclosures

JEL Classifications: M4, M14, M140, Q53, Q54, Q56, Q57

1. INTRODUCTION

The environmentally-sensitive nature of oil and gas operations has prompted them to seriously consider their performance in financial terms and socially and environmentally. Some of the oil and gas companies' operations include exploration, extraction, refining, transportation, and petroleum products marketing. As a result of their operations, oil and gas companies contribute immensely to environmental problems such as pollution, waste disposal, and spillage, cost communities and people who depend on land and water as a livelihood source. There are also social concerns associated with oil and gas operations, such as employees' injuries from accidents, health, and employees' safety.

Obligations arising from oil and gas companies when they negatively affect their environment are enormous. Thus, companies disclose and report aspects of their performance, which can pose risks to their operations and future obligations. Reporting on sustainability has become a task for companies' corporate communications department to communicate how such companies respond to their environmental and social concerns. As a corporate function, this department seeks to disseminate information to its internal and external stakeholders. Corporate communication is crucial in reporting sustainability disclosures. In the view of Salvioni and Bosetti (2014), reporting on corporate sustainability is a means to inform stakeholders about corporate responsibility to its stakeholders. Therefore, this implies that a company is responsible for its actions in three dimensions: environmentally, socially, and

governance. Consequently, it is imperative to assess companies' sustainability reporting, particularly environmentally-sensitive ones, due to their operations. It is also crucial to evaluate how companies align with global best practices.

These companies are prone to attract more stakeholders such as shareholders, investors, employees, communities, financial institutions, governments, and even non-governmental organizations. For instance, some oil and gas companies operating in Nigeria have been indicted for oil spillage, which affected farmlands and water. Beyond their environmentally-sensitive nature, oil and gas companies are capital-intensive. Therefore, this means that large capital investment is required for their operations. Consequently, oil and gas companies are prone to attract stakeholders with substantial capital investments, and ultimately, such companies are exposed to higher risk. Therefore, ignoring the environmental and social impacts arising from business operations is likely to expose them to higher risk.

Corporate failure is another issue that triggers the need for disclosures and transparency. According to Petrache (2009), preoccupation with Enron's immediate financial success led to the abrupt end of the energy giant's corporate life. The aftermath of corporate failures affects the organization and corporate stakeholders, including employees, investors, shareholders, communities, and government. Perhaps, this is one reason for sustainability reporting, which bothers reporting the economic, environmental, and social impacts of corporate organizations and their governance information. Sustainability performance seeks to measure corporate performance in economic, environmental, social, and governance aspects.

There is a lack of sector-specific research on sustainability reporting. Therefore, to fill this gap, the paper aims to assess oil and gas companies' sustainability disclosures and their alignment with global best practices.

Following this introduction is a literature review on sustainability reporting in Section 2, Sections 3 and 4 focus on the research method used and findings. The findings are discussed in Section 5, leading to section 6, where key areas the oil and gas sector needs to focus on are discussed. The study also presents recommendations for further research and implications of industry advancement in sustainability reporting.

2. LITERATURE REVIEW

2.1. An Overview of Sustainability Reporting

Nigeria is one of the African countries initiating investments (Kehl, 2007). Nigeria has also been grouped with Mexico, Indonesia, and Turkey to attract international finance. According to Durotoye (2014), due to Nigeria's massive oil production, there are more business opportunities in Africa. As more investors seize business opportunities in the oil and gas sector, companies in that sector are prone to internationalization. Sustainability reporting is one such globally accepted corporate reporting practice that has gained most stock markets' attention.

Nigeria joined the United Nations Sustainable Stock Exchange Initiative and became the second African member (United Nations Conference on Trade and Development, 2013). Modalities on how stock markets can partner with corporations, regulators, and investors to improve transparency and disclosure of sustainability are among the core responsibilities of the UNSSE (Sustainable Stock Exchange Brochure, 2012).

In sustainability reports, companies disclose policies concerned with their social, environmental, and economic aspects. An example of economic policy is the policy on local suppliers in significant areas of the location.

2.2. Sustainability Reporting in the Oil and Gas Sector

The Nigerian National Petroleum Corporation (2016) traced the history of oil companies in Nigeria to Shell-BP's discovery of crude oil in 1956 at Niger Delta's Oloibiri. Since that time, oil companies in Nigeria have carried out operations to extract and market crude oil products. There are two main sectors within which oil and gas companies have been categorized: upstream and downstream sectors. The upstream industry deals with crude oil extraction, refinery, and production of petroleum products. The downstream industry deals with the transportation and marketing of petroleum products.

There are several sustainability performance implications for oil and gas companies. According to PricewaterhouseCoopers (2014), international oil companies have more significant onshore assets; they are concerned about the repercussions that government payments in the form of tax and community development levies have on current and future earnings. However, there are implications of the operations of a business on people and the planet. In the view of Ramirez and Gonzalez (2013), the awareness of these implications has resulted in the inclusion of sustainability reports in financial information. When these implications are taken into consideration, they could have a less negative impact on future earnings. As noted in Idachaba (2011), the oil and gas industry operator aims to maximize production at minimal costs using state of the art technology. One of the issues that can reduce costs is sustainable performance regarding a company's relationship with people, the planet, and profits.

In the history of sustainability reporting, oil and gas companies have reported more after an adverse event such as a spill has occurred. Patten (1992) finds that oil companies increase their environmental disclosures in annual reports after the Exxon Valdez oil spill in 1989. Similarly, Deegan et al. (2000) note a change in disclosure practices after certain events, including the Exxon Valdez oil spill and the Bhopal disaster. These findings align with the legitimacy school of thought, where companies report to defend or maintain their image in society. Adverse events such as oil spills result in bad publicity, influencing stakeholders' perceptions concerning the company.

Sustainability disclosures are still evolving, as shown in prior studies. Even when companies are within countries that require mandatory reporting, adherence is primarily influenced by their individual decision to report except where there are sanctions for

not reporting. Some studies have also argued that sustainability reporting is synonymous with developed countries globally, such as Germany, Denmark, Sweden, South Africa, the United Kingdom, the United States of America, France, and Malaysia. Therefore, this is because these countries understand the need for such reporting and can carry them out.

In Malaysia, studies (Mohammed et al., 2010; McPhail and Maimunah, 2012; Abd-Mutalib et al., 2014) have examined sustainability reporting. This study's findings are similar in that companies did not disclose environmental, social, and governance indicators. Generally, there were disconnections in human rights disclosures, sustainability, and bio-fuel disclosures, probably due to inadequate regulatory and governance mechanisms. In many organizations, one of the governance mechanisms is the board of directors that controls and directs organizations towards the actualization of their set goals (Osisioma, 2013).

Bennett et al. (2011) examined the content of sustainability reports in the United Kingdom and found that varying priorities were given to different performance indicators reported. Companies gave disclosures to carbon emissions, water usage, waste, biodiversity, health and safety, diversity, procurement practices, and supply chain priority. As of the year 2011, there was no mandatory disclosure requirement for UK companies to engage in sustainability reporting. However, the UK Business Review provided an opportunity for companies to engage in sustainability reporting such as significant social and environmental risks, social and environmental performance to enable investors and shareholders to assess a company's overall success. In a study based on the Russian context, Usenko and Zenkina (2016) reported that oil and gas companies published more sustainability reports than social reports and environmental reports. It was also noted that these forms of reporting are still voluntary in Russia, and companies sought to manage their reputation by releasing the information in the reports.

Alazzani and Wan-Hussin (2013) found that oil companies had varying levels of environmental performance. The company with the lowest score did not report environmental disclosure at all. The sampled oil and gas companies reported habitats protected, greenhouse gas emissions, total number, and significant spills volume. Yunus et al. (2016) noted a significant association between its industry's carbon management strategy adoption and sensitivity. Carbon management strategy was a tool to reduce carbon emissions, one of the environmental indicators of sustainability reporting.

Studies (Raucci and Tarquinio, 2015; Ong et al., 2016) reported that companies disclosed more sustainability information related to economic aspects rather than environmental aspects. More so, more companies had sustainability disclosures embedded in annual reports than in stand-alone sustainability reports. Findings (Abd-Mutalib et al., 2014; Ong et al., 2016) revealed the dominance of qualitative disclosures in sustainability information embedded in annual reports. This dominance could be the voluntary nature of sustainability reporting, allowing companies to decide on the information they want to report and how to report them. One of the ways to improve sustainability reporting is to regulate its practice. Homayoun et al. (2016) shared this school of thought and argued that companies might grapple with inadequate knowledge of sustainability reporting issues without regulation of sustainability reporting. In addition to the knowledge issue, the experience is also crucial in determining how companies choose to engage in sustainability reporting.

Due to the differences between companies voluntarily engaging in sustainability reporting, there is increased use of standards and guidelines, including the GRI guidelines, to enable companies to report sustainability. Despite the distinguishing features of the criteria mentioned above and guidelines, they help guide companies' reporting practices and ensure that they can adequately account for their performance to stakeholders. However, these guidelines are not mandatory and require that companies use their discretion when using them. It is also important to note that voluntary guidelines may not encourage companies to develop their internal processes such as sustainability, environmental management systems, sustainability framework, and auditing.

2.3. Benefits of Sustainability Reporting

Moreover, in the business world, the word "shareholders" is gradually phasing out due to concerns that a business that ignores its stakeholders' interests may risk the erosion of its shareholder value. Although business organizations with a commitment to sustainability have been found to have higher market values (Eccles et al., 2012), this finding has been contradicted in the conclusions of some studies (Murray et al., 2006; Adams et al., 2010; Kaspereit and Lopatta, 2011). Businesses that operate unethically may risk their reputation, as revealed in the Enron case. Eccles et al. (2012) also argue that companies' adoption of responsible business policies does not impair shareholders' financial returns and results in competitive advantage. This argument was based on the findings that sustainability engendered higher stock returns.

2.4. Standards for Disclosure

According to the Sustainability Accounting Standards Board (2014), some of the issues oil and gas companies must report are greenhouse gas emissions, water, impacts on biodiversity, community development, health and safety, ethics and supply chain, and valuation reserves. The GRI (2012) has specific sustainability reporting guidelines for oil and gas companies. Examples are reporting on indigenous people (as part of stakeholders), corruption, involuntary resettlement, local content, materials, energy, water, emissions, waste, environmental protection expenditures and investments, governance commitments, and social performance indicators.

2.5. The Case for Regulation to Promote Sustainability Reporting

Comyns and Figgie (2015) find no improvement in Greenhouse gas reporting quality by oil and gas companies across 12 years. When there is increased government or stock exchange regulatory body regulation, it is expected that there will be full compliance by companies within those countries. However, Quick (2008) studied the level of sustainability reporting among companies

in the Deutscher Aktienindex – German Stock Index (DAX30) and found that over 70% of sampled organizations engaged in sustainability reporting. Germany is one of the countries whose governments or stock exchange regulatory bodies encourage sustainability reporting. One of the issues that could be missing is that there is insufficient enforcement of sustainability reporting. On the other hand, the personnel responsible for its implementation may be lacking.

Regulation and monitoring of sustainability reporting by companies is a crucial issue for advancements in sustainability reporting. Regulators such as the securities and exchange commission (SEC) and industry regulators can make it mandatory for interim sustainability reports to be filed by companies. Although there are arguments that regulation alone is insufficient to make companies engage in a particular reporting practice. Also, robust enforcement mechanisms must be in place to follow-up companies' compliance with reporting. For instance, South Africa has one such enforcement mechanism that makes sustainability reporting a listing requirement for companies as far back as 2011.

The development of sustainable development related to stock markets shows that market-based policies are essential to engender companies' commitment to improved sustainability performance. For instance, the stock market could improve corporate sustainability performance through ethical or socially responsible investors. Although there is no stock market policy from ethical investors for oil companies in Nigeria to report sustainability, there are sustainability disclosure requirements from the securities and exchange commission (SEC) in Nigeria. This NSE development implies that companies, especially environmentally-sensitive companies, will comply with the SEC's disclosure requirements to avoid sanctions.

According to Wensen et al. (2011), companies' sustainability reporting practices in Denmark and Sweden have been influenced by government policies and stock market regulators. In the United Kingdom, the financial communities, business players, Non-Government Organizations (NGOs), and reporting experts influence it. These could be attributed to the countries' external contexts such as the legal environment, political spheres, and regulators of business operations' impact on the environment and people aspects.

Based on the literature review, the current study developed the hypothesis:

H_1: Sustainability disclosures do not significantly differ over the periods in Nigeria's oil and gas industry.

2.6. Theoretical Framework

This paper inclines the legitimacy theory, positing that companies that pollute use social responsibility to appease and divert community and stakeholder activities on corporate environmental responsibility (Feng et al., 2020). Hence, the legitimacy theory's central precept is that companies adopt a strategic approach to finding congruence between societal pressure and organizational goal (Deegan, 2019; Dos Santos et al., 2020). Given that the corporate's primary aim is profit, some companies in developing countries with a weak policy on environmental pollution try to legitimize their polluting operations by feigning responsible corporate by reporting what the communities would like to see (Dube and Maroun, 2017). Such a legitimacy strategy can engage with community investments and say this more visibly while engaging little or no environmental impact report (Ayoola, 2011). Accordingly, researchers have uncovered the disclosure hoaxes displayed by polluting companies, including social responsibility reporting, to strive for legitimacy (Du and Vieira, 2012). Therefore, this can also be seen where companies involved in controversial operations such as oil companies are more prone to report their social responsibility and community engagements to mitigate the level of a dispute regarding negative corporate impact to the environment and community (Vollero et al., 2019); hence, social and community engagement reporting serve companies' legitimizing strategy to obtain sustainability certifications for increased market value (Feng et al., 2020). Therefore, this paper uses the dynamics between environmental and community investment reporting by oil and gas companies in Nigeria to show an example of how polluting companies can flaunt their community investment while concealing the extent of their environmental and climate change impact on the community and environmental advocacy groups and stakeholders. No previous research has used these eight oil and gas companies to relate to the legitimacy theory; hence, this paper contributes to sustainability disclosure theory and practice.

3. METHODOLOGY

3.1. Data and Variables

This study population consists of 12 oil and gas companies from the Nigerian Stock Exchange (NSE) as of August 2020 (Nigerian Stock Exchange, 2020). The oil and gas sector includes companies engaged in operating and developing oil and gas field properties, recovering and producing liquid hydrocarbons from oil and gas field gases. These business organizations also explore, create, market, refine, transport oil and gas products. The study sample is a census of the population due to its small size. The sample size comprises eight oil and gas companies in Nigeria. Therefore, the sample represents 67% of the oil and gas companies listed on the Nigerian Stock Exchange. A desk approach was used to retrieve data from the corporate annual reports. The data is explained in Appendix I, that is, the sustainability disclosures checklist. During the actual retrieval of data from the annual reports, it was observed that some companies did not have the accounts on their website, thus reducing the sample size to 8 companies. The period covered in this study is from 2010 to 2019. A 28-indicator checklist was developed using the Global Reporting Initiative (2012). "1(one)" was assigned to an indicator's presence in the annual report or sustainability report, and otherwise "0 (zero)" was given. The total sustainability score was calculated from the occurrence of indicators. Data were analyzed using a content analysis of sustainability disclosures in the annual reports of eight (8) oil and gas companies in Nigeria, rated utilizing the global reporting initiative's scoring index. The study assessed the validity and reliability of the sustainability disclosure checklist. After developing the list, the content was evaluated to ensure that it was in agreement with the GRI sustainability reporting indicators. The

reliability of the index was assessed using the test-retest approach. Initially, an individual coded the sustainability content of the corporate reports. After 3 months, another individual coded the sustainability content of the corporate information. The results of the coding were similar. There was no statistically significant difference between the first and second coding of the corporate reports' sustainability content. The data were analyzed using Stata 11 Software.

4. EMPIRICAL RESULTS

4.1. Descriptive Statistics

Approximately 67% of listed oil and gas companies in Nigeria as of August 2020, were assessed for sustainability disclosures. The data on sustainability reporting for oil and gas companies from 2010 to 2019 was analyzed using mean, standard deviation, minimum, maximum, and range.

It is striking to see that in Table 1, of the 80 total observations, the mean sustainability disclosures score increased from the year 2010 to the year 2014. There was a slight decrease in the mean sustainability disclosure score between the years 2015 and 2017. The mean sustainability disclosure score slightly increased in years 2018. However, in the year 2019, there was a marginal decrease in the mean sustainability disclosures score. The minimum sustainability disclosures score lowest for years 2010, 2011, 2012, and 2013 respectively. The maximum sustainability disclosures score is the weakest for the years 2015 to 2019. While the minimum sustainability disclosures score is highest for 2014 to 2019, the maximum sustainability disclosures score is highest for the year 2012.

In Table 2, Out of the 80 total observations, the mean economic indicators is lowest in year 2010, while the highest mean economic indicators of sustainability score is in year 2018. The minimum economic indicators score is least in years 2010-2013. The maximum economic indicators score is least in years 2015-2019.

The companies in the observations reported community investments. A reason for this could be that these companies are conscious of their negative impact on the ecology through emissions, spills, and waste, which affect the host community and view community investments as a strategy to legitimize their environmental pollution (Berrone et al., 2009). Climate change was poorly disclosed, as only 12.5% of the companies reported on the issue. The entire companies (100%) reported on the value of defined benefit plan obligations. Significantly few companies (25%) reported financial assistance received from the government, and 12.5% of the companies reported spending on local suppliers at significant operations locations. Overall, the state of reporting on economic indicators in Table 2 was relatively average.

Out of the 80 total observations, the mean environmental indicators is lowest in year 2010, while the highest mean environmental indicators of sustainability score is in years 2012, 2013, and 2018 respectively. The minimum environmental indicators score is zero for all the years in the observation. The maximum environmental indicators score is least in years 2015 through to 2019. On the average, the overall mean environmental indicators score is relatively low.

Based on Table 3, reporting on environmental indicators was also relatively low (with 18.2%) across the 5 years. For example, less attention was paid to reporting greenhouse gas emissions, organic pollutants, the volume of spills, and suppliers' assessment based on environmental risks.

Based on Table 4, out of the 8 observations, the mean social indicators increased from year 2010 to year 2013. There was a marginal reduction in social indicators score from year 2013 to year 2014. There was a slight decrease in social indicators score between year 2014 and year 2015. The total social indicators score was the same between years 2015 and 2017. In year 2018, the mean environmental score increased compared to the score for the previous year. While the minimum social indicators score is lowest for all the years in the observations, the maximum social indicators score is lowest for years 2015, 2016, and 2017 respectively. The maximum social indicators score is highest for years 2012, 2013, and 2014 respectively. On the average, several oil and gas companies in the observation did not disclose any social indicator throughout the period of the study.

Across the companies, there were few disclosures on political, financial contributions made by the organization and suppliers' assessment for impacts on society. More companies reported benefits to full-time employees, injury rate, representation of men and women in governance bodies, local community development programs, anti-corruption policies, and procedures.

Table 1: Descriptive statistics of sustainability disclosures in the corporate reports of oil and gas companies in Nigeria

Variable: Sustainability disclosures						
Year	Observations	Mean	Standard Deviation	Minimum	Maximum	Range
2010	8	8.5	7.634508	1	26	25
2011	8	10.125	7.160158	1	26	25
2012	8	11.75	9.910312	1	28	27
2013	8	11.75	9.176834	1	27	26
2014	8	11.75	7.245688	4	27	23
2015	8	11.375	5.902481	4	21	17
2016	8	11.375	5.902481	4	21	17
2017	8	11.375	5.902481	4	21	17
2018	8	12.125	6.128097	4	21	17
2019	8	11.625	6.162965	4	21	17

Source: Compilations from Stata 11 output (2020)

Table 2: Descriptive statistics of economic indicators of sustainability in the corporate reports of oil and gas companies in Nigeria

Variable: Economic indicators of sustainability disclosures						
Year	Observations	Mean	Standard Deviation	Minimum	Maximum	Range
2010	8	3.375	2.386719	1	8	7
2011	8	4.25	1.908627	1	8	7
2012	8	4.375	2.875388	1	9	8
2013	8	4	2.267787	1	8	7
2014	8	4.5	1.414214	4	8	4
2015	8	4.625	1.187735	4	7	3
2016	8	4.625	1.187735	4	7	3
2017	8	4.625	1.187735	4	7	3
2018	8	4.75	1.164965	4	7	3
2019	8	4.625	1.187735	4	7	3

Source: Compilations from Stata 11 output (2020)

Table 3: Descriptive statistics of environmental indicators of sustainability in the corporate reports of oil and gas companies in Nigeria

Variable: Environmental indicators of sustainability						
Year	Observations	Mean	Standard Deviation	Minimum	Maximum	Range
2010	8	1.375	3.889087	0	11	11
2011	8	1.875	3.943802	0	11	11
2012	8	2.75	5.092011	0	11	11
2013	8	2.75	5.092011	0	11	11
2014	8	2.625	3.70328	0	11	11
2015	8	2.5	3.70328	0	9	9
2016	8	2.5	3.70328	0	9	9
2017	8	2.5	3.70328	0	9	9
2018	8	2.75	3.955105	0	9	9
2019	8	2.625	3.777282	0	9	9

Source: Compilations from Stata 11 output (2020)

Table 4: Descriptive statistics of social indicators of sustainability in the corporate reports of oil and gas companies in Nigeria

Variable: Social indicators of sustainability						
Year	Observations	Mean	Standard Deviation	Minimum	Maximum	Range
2010	8	3.75	2.12132	0	7	7
2011	8	4	2.13809	0	7	7
2012	8	4.625	2.66927	0	8	8
2013	8	5	2.828427	0	8	8
2014	8	4.625	2.386719	0	8	8
2015	8	4.25	2.052873	0	6	6
2016	8	4.25	2.052873	0	6	6
2017	8	4.25	2.052873	0	6	6
2018	8	4.625	2.326094	0	7	7
2019	8	4.375	2.199838	0	7	7

Source: Compilations from Stata 11 output (2020)

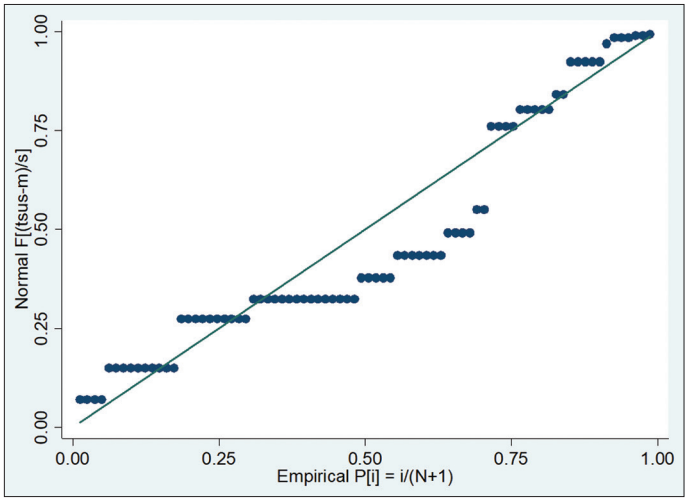
4.2. One-way Repeated Measures Analysis of Variance (ANOVA) Results

One-way repeated measures ANOVA is also referred to as within-subjects ANOVA. It was used to assess whether the mean of the sustainability disclosures is the same in the ten groups of oil and gas companies. The ten groups represent the 10 years starting from year 2010 to 2019. One-way repeated measures ANOVA was also used because there were ten groups' mean scores of sustainability disclosures and the participants were the same in each group. Hence, it was expedient to assess whether there were changes in sustainability disclosures across the 10 years.

The assumptions underpinning one-way ANOVA were satisfied before it was used to analyse the data. The first assumption was that the dependent variable (that is, sustainability disclosures) was measured at the continuous level. Since sustainability disclosures is a continuous variable that was measured on a scale of 0-28. The second assumption was that the independent variable, that is, time period comprised ten categories, within which the companies were observed.

Third, there were some outliers across the 10-year period. This is shown in Figure 1.

Figure 1: Outliers



Source: Compilation from Stata 11 output (2020)

Table 5: Shapiro-Wilk w test for normal data

Variable	Observations	w	v	z	Prob >z
Total sustainability disclosures	80	0.90423	6.574	4.126	0.00002

Source: Compilation from Stata 11 output (2020)

Table 6: One-way repeated measures analysis of variance

Source	Partial ss	df	MS	F	Prob>F
Model	2922.3	16	182.64375	14.15	0.0000
id	2843.1875	7	406.169643	31.47	0.0000
Time	79.1125	9	8.79027778	0.68	0.7231
Residual	813.1875	63	12.9077381		
Total	3735.4875	79	47.2846519		
Number of observations			80		
R-squared			0.7823		
Adjusted R-Squared			0.7270		

Source: Compilation from Stata 11 output (2020)

Also, from Table V, based on the Shapiro-Wilks test of normality, the distribution of the sustainability disclosures in the ten groups was not normally distributed. The Shapiro-Wilks test rejects the hypothesis of normality when the P-value is not > 0.05. The P = 0.00002 which is <0.05.

However, one-way repeated measures ANOVA are robust to deviations from normality. Hence, violation of normality will not culminate in invalid results. Finally, the variances of the differences between the combinations of related groups were equal.

Based on Table 6, One-way repeated measures ANOVA was run on a sample of 8 companies to ascertain whether there were differences in sustainability disclosures across a 10-year period. The results showed that the sustainability disclosures were not statistically significantly different over the 10-year period, $F(9, 63) = 0.68$, $P < 0.005$.

5. DISCUSSIONS OF FINDINGS

The companies are already used to engaging in financial reporting, incorporating economic indicators of sustainability reporting. For instance, community investments, assistance received from the government, and defined benefit plan obligations are often reported in financial statements. However, based on this current study, pertinent issues such as risks and opportunities of climate change, their economic implications, and costs of actions taken are yet to receive serious attention from companies. It has been argued that these issues have become prominent as a result of the significant greenhouse gas and other pollutants and the risks they pose to business operations. However, Harrast and Olsen (2016) finding concerning disclosure of risks and opportunities of climate change show that companies disclose them due to legal costs of non-compliance, not taking to cognizance the opportunities. Similarly, this current study's findings are in tandem with Berthelot and Robert (2011), where the level of climate change disclosures was found to be very low.

Ramirez and Gonzalez (2013) found that even though climate change issues are expanding, accounting standards are not adequately developed to account for them. The highest number of companies reporting on climate change risks and opportunities, financial implications of the risks and opportunities, and costs of actions taken to manage them occurred in the period 2012, which was the year of the introduction of the Central Bank of Nigeria (CBN) sustainability reporting guidelines for financial institutions. A reason for this could be that oil and gas companies, although not in the financial services sector, agree that improvement of their sustainability performance is necessary as they are beneficiaries of the services of financial institutions.

Only one company reported water withdrawn for production, total greenhouse-gas emissions, organic pollutants, number and volume of spills, environmental protection expenditures, and suppliers' evaluation based on environmental risks. The company in question has quoted shares on two stock exchanges, one in Nigeria (Nigerian Stock Exchange) and the other in South Africa (Johannesburg Stock Exchange). Johannesburg Stock Exchange makes sustainability reporting a listing requirement for companies whose shares are quoted on it. This is probably the reason for consistent disclosures of sustainability performance by the company.

Although the critical indicators of sustainability reporting have been grouped into economic, environmental, and social, this study found more disclosures of community investments than any other economic indicator. Therefore, this could be that these companies already contribute negatively to the environment through emissions, spills, and wastes that affect the host community. According to Wells et al. (2001), vast amounts of money are spent yearly by extractive industries in developing countries on community development initiatives.

This study's results agree with prior studies (Burgwal and Vieira, 2014; Raucci and Tarquinio, 2015; Ong et al., 2016), where companies were found to report low environmental levels indicators. This study's results do not agree with a prior analysis (Raucci and Tarquinio, 2015), where it was reported that labor disclosures dominated the social aspects of sustainability reporting. In this study, disclosures on benefits to full-time employees, health

and safety, local community development programs dominated the social performance measures.

Overall, this study's results agree with Tang and Chan (2010), Coulmont et al. (2013), where the quantity of information reported was found to be low compared to reporting guidelines such as the Global Reporting Initiative (GRI). Albeit, Coulmont et al. (2013) noted that where separate sustainability reports were published, for example, on companies' websites, companies did not repeat information disclosed in annual financial statements in sustainability reports. Even in terms of consistency of data reported, this study's findings concur with reviews (Junior et al., 2017), where despite belonging to the same industry, companies had differences in sustainability reporting strategy and social aspects dominated sustainability reporting.

6. CONCLUSION AND RECOMMENDATION

Despite the growing interest in sustainability reporting, descriptive studies examining company reports' contents are not many (source). One of the unanswered questions remains on the contents of sustainability reports of environmentally-sensitive companies. There seems to be inadequate research examining the balance between corporate transparency and the risk of divulging too much information in corporate reports (Usenko and Zenkina, 2016).

This study's results are crucial because they enable the researchers to ascertain the actual state of sustainability reporting in the oil and gas sector of the Nigerian economy. These results also offer inference for future studies. It is also possible to assess companies' sustainability reporting from 2015 to ascertain whether it differs from the one of the year 2014.

This study's main limitation is that the population was limited to the companies on the Nigerian Stock Exchange (NSE). The possibility remains that there are companies in the Nigerian oil and gas industry that do not operate on the NSE. Further research on the sustainability reporting of such companies can shed more light on the practice of such reporting among oil and gas companies.

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APPENDIX I – SUSTAINABILITY DISCLOSURES CHECKLIST

Economic Indicators

Community Investments.
Risks and opportunity posed by climate change.
Financial implications of the risk and opportunity posed by climate change.
Costs of actions taken to manage risks or opportunities posed by climate change.
Value of defined benefit plan obligations.
Mode of settling the defined benefit plan obligations (liability).
Percentage of salary contributed by the employer and employee.
Financial assistance received from the government.
Spending on local suppliers at significant locations of operations.

Environmental Indicators

Renewable and non-renewable materials used.
Materials used that are from recycled materials used to manufacture the organization's product and services.
Fuel/electricity/heating/cooling/steam consumption.
Reduction in energy consumption due to conservation.
Water withdrawn for operations.
Gross direct greenhouse-gas emissions.
Organic pollutants.
Waste and method of disposal.
Number and volume of spills.
Environmental protection expenditures.
Assessment of suppliers based on environmental risks.

Social Indicators

Benefits to full-time employees.
Injury/injury rate/occupational diseases rate.
Health and Safety employee training.
Representation of men and women in governance bodies.
Local community development programs.
Anti-corruption policies and procedures.
Political financial and other kinds of contributions made directly and indirectly by the organization.
Suppliers and clients subject to assessments for impacts on society.