

THE INFLUENCE OF ENVIRONMENTAL SUPERVISORY AGENCIES ON ENVIRONMENTAL INFORMATION DISCLOSURE IN NIGERIA

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ABSTRACT. Purpose: - Environmental reporting based on triple bottom line (TBL) reporting consists of three basic elements of profit, people and planet depicting economic, social and environmental information respectively. Past studies have tend to examine the relationships between these three collectively and other variables, especially corporate characteristics. Of greater concern to environmentalists however, is the dissemination of environmental information, which has been greatly ignored. This study is, therefore, an attempt to examine exclusively the relationship between pure environmental information disclosure and environmental monitoring agencies. **Methodology:** - Using environmentally sensitive firms operating in Nigeria, the study employed content analysis and regression to determine the relationship covering the period 2009-2014. **Findings:** - It concluded that both significant positive and negative relationships exists between environmental reporting and monitoring agencies. **Research Implications:** - This shows that while Nigerian Stock Exchange contributes positively to environmental information disclosure, Department of Petroleum Resources and National Environmental Standards and Regulations Enforcement Agency are having a negative impact on environmental information dissemination. **Practical Implications:** - There is a clear indication that the Department of Petroleum Resources and National Environmental Standards and Regulations Enforcement Agency are inefficient/ineffective. **Originality/ Value:** - The lack of treating environmental information dissemination independently from other elements of sustainability is what this study

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capitalized on. Furthermore, studying the influence of environmental monitoring agencies (NSE, DPR and NESREA) on environmental reporting is mostly overlooked by scholars.

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Introduction

Ionel-Alin (2011b) posit that environmental reporting is 'one of the most important areas of development during the last 15 years as far as accounting is concerned ... generating interest beyond the restrictions imposed by purely academic discussions or the professional accountant community'. This has seen the convening of conferences and summits such as the Stockholm conference (1972), Rio de Janeiro Earth Summit (1992), Kyoto Protocol (1997), Johannesburg Summit (2002) and recently the Paris Climate Summit (2015) being held to tackle the rapid deterioration of climate and our environment. Because of its seriousness, the issue has attracted many researches in accounting especially as it affects corporate governance.

There has been studies on sustainability reporting and its relationships with corporate financial performance, ownership structure, board characteristics, industrial type, website or internet disclosure, quantity and quality of disclosure, etc. Yet these has not exhausted the concept of sustainability reporting. It is of interest to note that sustainability reporting standards as contained in Global Reporting Initiative (G4) could be categorized into four broad parts, which includes general information, economic information, environmental information and social information (Initiative, 2013). These have been collectively referred to as either

social reporting, environmental reporting, corporate social reporting, corporate social and environmental reporting, sustainability reporting or corporate social responsibility or nonfinancial reporting (Gray, 2001; Gray, Owen & Maunders, 1987; Othman & Ameer, 2009). Most studies have examined the relationship with the collective categories of sustainability reporting. That is, combining all four major categories of environmental reporting. A critical examination of the four categories shows that the general and economic disclosure standards have little to do with environmental issues. However, issues specified in Section 5 of G4 under environmental and social categories (Ph. 84-141) are the major sustainability issues (Initiative, 2013).

Most studies conducted in the past have ignored a direct relationship with either of these categories. In this study therefore, the monitoring role of environmental agencies as it affects disclosure by firms on environmental issues as stated in Section 5, Ph. 84-141 would be tackled. The main aim of this work therefore, is to evaluate the influence of environmental monitoring agencies in Nigeria on firms' disclosure of purely environmental issues. The choice of Nigeria for this study is that it is one of the African countries that demonstrates the political, social and economic consequences of environmental hazards. From the oil-rich southern parts to the semi-arid lands of the north, the country faces series of tribal, ethnic, religious, and communal clashes brought about by environmental issues. For instance, while in the northern part of the country, there are clashes between herdsmen and farmers in the southern part, there are serious upheavals between oil producing companies and local communities (Haggins & Frames, 2011). The focus will be on environmentally sensitive firms in the Nigerian economy for the period covering 2009-2014. Thus, two assertions would be tested and reported:

H₀₁ There is no direct relationship between environmental information disclosure and monitoring by the Nigerian Stock Exchange (NSE) of firms operating in the Nigerian economy.

H₀₂ There is no direct relationships between environmental information disclosures and monitoring by the Department of Petroleum Resources or National Environmental Standard and Regulations Enforcement Agency (DPR/NESREA) of firms operating in the Nigerian economy.

The significance of this is to enable stakeholders, like host communities, to know the level of environmental pollution (air, land and water) being made by firms and measures taken by environmental supervisory agencies to either prevent, mitigate, reduce, eliminate, eradicate or sanctioned defaulters. The paper has been divided into five sections each presenting a unique aspect of the research. In section one a general introduction into the background, objective, scope and significance of the study was given. Section two reviewed relevant literatures on environmental reporting as stipulated by Section 5 of G4 “environmental category”. The research design, framework, theory and model were discussed in section three. Analysis of data, finding of the study, implications and recommendations were explained and stated in the last two sections of the study.

Literature Review

The Concept of Environmental Reporting

Environmental reporting could be seen as the public disclosure by firms of their environmental performance information similar to the publication of the financial and economic performance information in annual financial reports, which encompasses the recognition, disclosure, and measurements of amounts and displays of environmental impacts (Johnson, 1993). It is of great importance to draw attention to the fact that environmental reporting is not currently on the Financial Accounting Standards Board (FASB) agenda (Johnson, 2016) nor is it recognized as mandatory in most developing countries like Nigeria. This makes it goes unnoticed by most firms operating in these developing economies. In developed economies (Britain, US, etc.) however, pressure from environmental rights groups like Green Peace Movement have forced mandatory disclosure of social and environmental information from firms operations.

Sustainability Disclosure Standards under G4 (Environmental Category Ph. 84-141)

GRI 4 (G4) could be categorized into four main parts. Each parts sets out special and unique standards on items to be disclosed. The four categories are:

1. General information
2. Economic information
3. Environmental information
4. Social information

The general information section is centered on information regarding a company's strategy, risks and opportunities. The profile of the organization is also disclosed in this section. Information like firm name, address, accounting year-end, restatement of financial reports and auditor firms are all contained in this section. Also found in this section are the mode of governance, commitment and engagements with regards to organizational structure, mission & vision, agreements, industrial membership and list of all stakeholders to a firm. Economic information covers issues on the flow of capital, economic impact of the organization on society and its impact on the economy. The environmental section deals mainly with issues like material used, energy consumed, effluents & wastes, biodiversity and environmental management processes. Finally, the social category, which is the biggest category, contains issues like firms' social policy, organizational responsibility, employment, firms' relationship with community, health & safety, training & education, human rights, privileges, products environmental impacts and environmental ethical codes.

"The environmental dimension of sustainability concerns the organization's impact on living and nonliving natural systems including land, air, water and ecosystems" (Initiative, 2013). It covers environmental impacts in relation to inputs and outputs like energy, water, emissions, effluents & wastes and biodiversity. Furthermore, aspects like transportation, products and other service-related impacts together with environmental compliance and expenditures are affected by environmental information disclosure (Initiative, 2013).

Critical Examination of Environmental Reporting Relationships

Studies in the areas of environmental reporting have touched so many issues and relationships with varying results. In the review some of these studies would be examine by analyzing the problems evaluated,

the objectives, methodologies used and the findings arrived at. Looking at corporate environmental disclosure by companies listed under Fortune Global-200 due to stakeholders' demand, Buniamin (2010), Jose and Lee (2007) and Tagesson, Blank, Broberg and Collins (2009); attempted to discover the type of information corporate bodies disclose on the website as it affects environmental management policies and practices using content analysis. It was discovered that there exists a positive correlation between corporate performance like firms' size and profitability and environmental disclosure and that government firms disclose more on environmental information than private firms (Tagesson *et al.*, 2009).

Firms environmental reporting and performance should be considered as strategic in policy formulation. The relationship between disclosure and firms' image and environmental management as an important tool of improved environmental management by developing countries stems from external pressure (Sumiani, Haslinda, & Lehman, 2007). Buniamin (2010), Cho & Roberts (2010), Moneva & Cuellar (2009), Spence (2007) and van Staden & Hooks (2007) examined the quality and extent of environmental disclosure by environmentally sensitive firms and found a positive and significant relationship based on the legitimacy theory. Firms with higher emission propensity disclose more than firms with lower emission propensity. The disclosure are valid as they rely on GRI disclosure that are more objective and verifiable (Buniamin, 2010; Cho & Roberts, 2010; Clarkson, Overall & Chapple, 2011).

In a study on the quantity and quality of environmental information disclosure, it was discovered that only 28% of companies listed in Bursa Malaysia include environmental information in their annual reports. To effectively manage the challenges of environmental disclosure companies need the two processes of sustainability reporting and low-carbon roadmaps (Caritte, Acha & Shah, 2015). The result showed a lack of consistency and transparency in corporate social reports of the United Kingdom food retailers. Another study of the association between environmental disclosure strategy and the tension of legitimacy discovered that environmental reporting by firms enhances the quality of analyzed information context, which enables better forecast (Cormier & Magnan, 2015). This tells a lot on the image of firms as it legitimize it in the eyes of stakeholders with no financial interest at stake. An evaluation of

financial and nonfinancial reporting by firms in the London Stock Exchange (FTSE100) related to environmental impact was conducted by Ionel-Alin (2011a). The outcome was an increasing trend in environmental disclosure. Furthermore, only 22 of the 48 companies reports on environmental performance indicators specified by GRI.

Environmental disclosure is a response to social pressures created around the time of these initiatives (Loh, Deegan & Inglis, 2015). With over 1,500 corporate reports published between 1997 and 2008, the comparison of corporate reporting and environmental news content shows that the two mirror each other (Pollach, 2014). For some issues however, media news may impact corporate environmental agenda, but not the opposite. A significant but inverse relationship exists between environmental reporting and corporate characteristics (Smith et al., 2007). Spence (2007) explore the reproduction of capitalist discourse through environmental reporting and its implications. The research discovered that both capitalist discourse and environmental reporting are driven by numerous motivations.

Environmental studies tried to emphasize environmental practices as a medium of communicating corporate accountability with the aim of strengthening organization-stakeholders association (Yusoff & Darus, 2012). Of the 141 responses received from their survey, 22% practice some form of environmental reporting. Results indicate that corporate CEOs have embark upon a positive step in environmental implementation by providing various means of reporting, identifying and engaging stakeholders. The overall advantage to firms is an improved public image and accountability geared towards meeting stakeholders demands. Most of the studies employed secondary data in their research (Buniamin, 2010; Clarkson *et al.*, 2011; Jose & Lee, 2007; Tagesson *et al.*, 2009; van Staden & Hooks, 2007). That of Spence (2009) however, used primary data. While the work of Cho & Roberts (2010) and Clarkson *et al.* (2011) were based on GRI disclosure standards Sumiani *et al.* (2007) used ISO14001.

It is worth noting that environmental studies especially those mentioned above touches lots of areas. Results from these researches have been mixed depicting positive, inverse, significant and insignificant relationships. However, while the majority of studies have applied sustainability reporting in its totality, there are hardly studies that

specializes on either all or one elements of sustainability (social and/or environmental disclosures). Thus, this practice leaves behind a gap, which the current research hope to exploit. Moreover, in most economies nowadays there are public agencies charged with the responsibility of ensuring compliance with laid down standards, rules and regulations on sustainability reporting. In Nigeria, the Ministry of Environment (MOE), NESREA, DPR, Forestry Belt and of recent the NSE; have all been granted authority to monitor or supervise environmental matters each with its area of jurisdiction. It is therefore, pertinent to analyze the significant (if any) of any relationship that exists between these agencies and environmental materials, that threatens land, air and water purity. This study provides the opportunity to examine such relationships.

Research Methodology

The research used secondary data in the form of published annual financial reports, triple bottom line reports, sustainability reports and reports on the website or internet. The survey was conducted on environmentally sensitive firms operating in the Nigerian economy during the periods 2009-2014. The total population of these was 81 companies. The sample size was about 83% of the population, which gives 67 companies, and were analyzed for a six-year period (2009-2014). Selection of firms was stratified random with firms been categorize into industries or sectors before being selected at random.

The 67 firms for six-years gave an observation of 402. Data screening resulted in the elimination of 13 observations and the total observation stood at 389. Skewness and Kurtosis tests showed that all data in the distribution were normal as none exceeded the acceptable values of ± 2 for skewness and 10 for kurtosis (Table 1).

Regression tool of Stata13 was applied in analyzing the data for impact, significance, relationships and level of disclosures. The dependent variable of environmental reporting constituted one of the three major items specified by the GRI (G4) disclosure standard in Section 5 "Environmental Category". Items to be disclosed under this were classified into materials used, energy consumed, effluents & wastes, biodiversity and emissions.

For each disclosure 1 score was awarded while for nondisclosure 0 score was awarded. The average is given by the simple average disclosure index (sadi) which represents the measurement of environmental disclosure.

Table 1. Normality of Data

Variables	Skewness ($\leq \pm 2$)	Kurtosis (≤ 10)
Materials Used	-2.18594	5.77833
Energy Used	-0.59545	1.35456
Effluents & wastes	1.19074	2.41787
Biodiversity	1.36238	2.85608
Environmental Management Department	0.86887	1.75493
Simple Average Disclosure Index	0.39549	2.10720
NSE	1.31461	3.30257
DPR/NESREA	0.29503	1.79198
Industrial Type	-0.41481	1.17207

Source: Computed by the authors using Stata13

For the independent variables, a mean value index (MVI) was used to measure the performance of environmental policy administrators. This index is an average of the measure of compliance by firms with environmental rules, regulations and standards attracting scores of 0 and 1 for noncompliance and compliance respectively by affected firms. This instrument, which is an evidence-based policy survey, maximizes the use of best quality research to inform policy driven decision-making, which, is valuable for evidence-based policy activities (Lancaster, 2014). There is also a control variable (industrial type) which determines the intensity of environmental sensitivity. Highly sensitive industries are scored 1 and lowly sensitive ones are scored 0.

The framework was built on the relationship between environmental reporting and environmental monitoring agencies in Nigeria (NSE and DPR/NESREA). The underpinning theory of the study is the institutional theory, which explains that companies will put in place organizational structures and embark on operation practices and policies due to societal and powerful stakeholders' pressure on a particular organization (Loh *et al.*, 2015). Thus, the relationship is depicted by the following relation:

ER f (environmental policy administrators)

$$ER_{it} = \alpha + \beta_1 NSE + \beta_2 DPR/NESREA + IT + \varepsilon \quad (i)$$

where:

ER _{it}	= environmental reporting
α	= constant term
ε	= error term
β	= coefficient
NSE	= Nigerian stock exchange
DPR	= department of petroleum resources
NESREA	= national environmental standards and regulations enforcement agency
IT	= industrial type

4 Results and Discussion

Data analysis involves the statistical evaluation of a dataset to give meaning to the result. The analysis of this study determines the means, deviation from the mean, minimum and maximum values, correlation matrix and its significance, the overall significance of the relationships and the impact of the predictor variables on the dependent variable, the type of relationship and the level of individual significance of all the variables of the research. These are the basic items that were interpreted and their implications recorded.

The descriptive statistics gives a summary of the analyzed data that touches on the average rate of disclosure or compliance and the highest and lowest values recorded. Results on Table 2 shows results for the dependent variable (sadi) and items that constituted it together with the independent and control variables (NSE, DPR/NESREA and industrial type).

Dependent Variables Items

These items together constituted the average rate of environmental disclosure. The five of them include material used, energy consumed, effluents & wastes, biodiversity and environmental management department

(EMD). On average, there was a disclosure rate of 86.89% on materials used and that of energy consumed was 64.27%. These two disclosures, which are mainly inputs, recorded very good environmental rates as their disclosure exceeded 50%. For effluents & wastes however, disclosure rate was 24.42% while that of biodiversity and EMD were 21.85% and 30.08% respectively. This shows that disclosures on these three items was very poor as they all fell below average (50%). This happens in the face of an excellent disclosure on input elements (material used and energy consumed); whose joint environmental disclosure rate gives an average of 75.58%.

The average disclosure rates for output pollutants like effluents & wastes, biodiversity, and EMD was 25.45%. This wide range in disclosure rate between the two could be due to the importance attached to material used and energy consumed in the production process. The two are not only direct costs that can be easily traced to the product being billed and reported, but backed by the sensitivity of energy consumption in Nigeria due to poor electricity energy supply. As such organizations are very conscious of these costs, thus record them fully as they are borne directly by the company.

The standard deviation results shows that distribution in the dataset was even as all the standard deviation indices were below zero (0). The record also shows that in as much as firms recorded zero disclosure, there were also 100% disclosure as could be seen from the minimum and maximum values recorded (Table 2).

Table 2. Descriptive Statistics

Variables	Mean	Std. Dev.	Minimum Value	Maximum Value
Material used	0.8689	0.3380	0.0000	1.0000
Energy consumed	0.6427	0.4798	0.0000	1.0000
Effluents & wastes & wastes & wastes	0.2442	0.4302	0.0000	1.0000
Biodiversity	0.2185	0.4138	0.0000	1.0000
Environmental management department (EMD)	0.3008	0.4592	0.0000	1.0000
Simple average disclosure index	0.4550	0.3152	0.0000	1.0000
NSE	0.6093	0.0206	0.5818	0.6545
DPR/NESREA	0.4942	0.0957	0.3832	0.6664

Source: Computed by authors using Stata13

Simple Average Disclosure Index

This index represents the average disclosure rate of total environmental items. It shows the level of disclosure by environmentally sensitive firms of environmental information. The mean disclosure was 45.50%, which, though not that poor is below average (50%). It means that average disclosure on environmental items is below average. With a deviation from the mean of ± 0.3152 , it shows data distribution within the dataset or observation were even. The level of disclosure reported may be subject to different interpretations depending on the perspective of either mandatory or voluntary disclosures. The fact that environmental reporting in Nigeria is voluntary shows that the rate of 45.50% disclosure rate is good. This could be regarded as very poor under mandatory environmental disclosure. Minimum disclosures of 0 and maximum disclosures of 100% were also recorded by firms within the industries (Table 2).

Predictor Variables

For the two predictor variables of the research, the result shows that firms' compliance with NSE monitoring was at 60.93% level while that of DPR/NESREA was 49.42% (Table 2). The two gives an average rate of disclosure on compliance of 55.18%. On individual basis, NSE rate is very encouraging as it gives an indication of the efficiency and effectiveness of the NSE's monitoring operations thus leading to a higher level of disclosure. DPR/NESREA is also not that bad as the disclosure rate shows that a high level of monitoring is being carried out. Data within the distribution were even as indicated by the indices of both NSE and DPR/NESREA (0.0206 and 0.0957 respectively).

It should be noted that neither the minimum and maximum values shows that firms in the economy recorded the lowest nor the highest rates of compliance for these two environmental monitoring agencies. The NSE recorded a minimum disclosure value of 58.18%, while DPR/NESREA recorded a minimum disclosure value of 38.32% (Table 2). This shows that monitoring by environmental agencies yielded at least some results, as none of the firms could claim not feeling the supervisory impact of these agencies. On other hand, NSE's record shows 65.45% and that of DPR/NESREA shows 66.64% highest compliance

rates. The implication is that there were no extreme firms in terms of compliance with environmental agencies' monitoring role. That is, firms that complied 100% with environmental disclosure standards.

Correlation Matrix

The correlation matrix index on Table 3 is an indication of the existence of the strength, direction and significance of any relationship between the variables. Overall the correlations indices shows that a relationship exists between all the variables as none of the indices between the variables is 0% nor are there any perfect relationship between variables (100% index). The relationships were however, very weak as the highest matrix reads 0.1642 which is between the NSE and DPR/NESREA. Furthermore, there were no cases of collinearity among the predictor variables since none of the indices attained 80% or 90% value. The implication of this result is that except for the weak relationship the dataset in the observations are perfect.

Table 3. Correlation Matrix

Variables	sadi	nse	dprnesrea	Ind. type
sadi	1.0000			
nse	0.1636*	1.0000		
Dprnesrea	-0.1461*	0.1642*	1.0000	
Ind. type	-0.1046*	-0.0759	0.0652	1.0000

Source: Computed by authors using Stata13

The relationship between environmental information disclosures (sadi) and the NSE and DPR/NESREA are direct and inverse respectively. This implies that positive or negative changes in NSE monitoring leads to positive or negative changes in environmental reporting. On the other hand, an increase in DPR/NESREA monitoring could lead to a fall in environmental information disclosure vice versa, because of the inverse relationship. This is an indication of the inefficiency of DPR/NESREA as their impacts on firms is negative. However, reduced monitoring by these agencies (DPR/NESREA) could lead to higher disclosure of environmental information. A critical look at the significance of the relationships shows that all but two of the relationships between the variables are highly

significant. The only non-significant ones are those between the NSE and industrial type (13.52%) and between DPR/NESREA and industrial type (19.96%).

Regression Analysis

The regression analysis gives results for the collective impact of NSE and DPR/NESREA on environmental reporting, its significance, the rate of change between the predictor variables and environmental reporting and their individual significance.

Table 4. Regression Results

f-value			0.0000
R ²			0.0638
Sadi	Coefficient	t-value	p-value
NSE	2.8482	3.70	0.0000
DPR/NESREA	-0.5647	-3.42	0.0010

Source: Computed by authors using Stata13

From Table 4, the f-value of 0 is an indication of a very high collective significant relationship (at 1% level of significance), between environmental reporting and monitoring by NSE and DPR/NESREA. Their combined impact on environmental disclosure (R²) is 6.38%. On individual basis however, for every one unit of increase or decrease in NSE monitoring, environmental disclosure will rise or fall by 2.8482 times. On the other hand, a rise or fall in monitoring by DPR/NESREA by one unit could lead to a decrease or an increase in environmental reporting by firms due to the inverse relationship between them. Both relationships are on individual basis, highly significant at 1% level of significance. Thus, the conclusion to be drawn from Table 4 is to either support or reject the assertions of this study as reproduced below:

H₀₁ There are no significant relationships between environmental information disclosure and the Nigerian Stock Exchange (NSE) by firms listed in the NSE.

H₀₂ There are no significant relationships between environmental information disclosures and the Department of Petroleum Resources/ National Environmental Standard and Regulations Enforcement Agency (DPR/NESREA) by firms listed in the NSE.

Since the result shows that both values are highly significant at 1% level of significance, we reject these null hypotheses. Rather the conclusions to be drawn are that:

a. A direct positive and significant relationship exists between environmental reporting and NSE monitoring by listed firms in the Nigerian economy.

b. An inverse and significant relationship exists between environmental reporting and DPR/NESREA monitoring by listed firms in the Nigerian economy.

Table 5 gives a summary of the major findings:

Table 5. Test of Hypothesis

Hypothesis	Relationships	Findings
H ₀₁	<i>Sadi and NSE monitoring role</i>	(+) and significant
H ₀₂	<i>Sadi and DPR/NESREA monitoring role</i>	(-) and significant

Source: Computed by authors using Stata13

Conclusion

Summary of the Research

Most studies have ignored evaluating a direct relationship with the individual elements that constitutes sustainability reporting. This research therefore, is an attempt to examine the monitoring role of environmental agencies as it affects disclosure by firms on environmental issues as stated in Section 5, Ph. 84-141, with the aim of evaluating the influence of environmental monitoring agencies in Nigeria on firms' disclosure on purely environmental issues. The focus was on environmentally sensitive firms listed in the NSE in the economy for the period covering 2009-2014. A review of relevant literatures shows that 12 Aspects are sub-categorize under "environmental category" in the G4 sustainability disclosure standards. Each sub-category has its unique items to be disclosed. Using a sample size of 67 firms, the dataset was analyzed through Stata13.

Findings and Major Contributions

From the analysis of data, the following findings could be outlined:

1. Input items (materials used and energy consumed) were highly disclosed at an average disclosure rate of 75.50%. Conversely, disclosures on output elements (effluents & wastes, biodiversity and EMD) were very poor at an average disclosure rate of 25.45%. This shows that environmental pollution is not properly accounted for.

2. The average environmental disclosure was also below par (50%). The 45.50% disclosure made is only encouraging when one considers the fact that Nigeria practices voluntary disclosure.

3. The rate of compliance with environmental monitoring agencies by firms is mixed. While the NSE have higher rate (60.93%), the DPR/NESREA have a lower rate (49.42%).

4. There is a direct and significant relationship between environmental reporting and the NSE. Alternatively, an inverse and significant relationship is found between environmental reporting and DPR/NESREA showing that this agency is inefficient and ineffective.

5. A highly collective significant relationship (at 1% level of significance), exists between environmental reporting and monitoring agencies.

6. Finally, the total impact of environmental supervisory agencies (NSE and DPR/NESREA) on environmental information disclosure is very weak standing at 6.38%.

Recommendations

Due to the poor disclosure shown by firms in the sector on output pollutant the environmental agencies concerned should intensify monitoring of firms' environmental disclosure to ensure higher compliance with local as well as international environmental standards and regulations. The discovery that firms disclose more of input information than output ones is an indication of concealing the real degree of environmental pollution. The authorities should therefore, be more vigilant in their supervision and ensure strict compliance with environmental disclosure standards.

Environmental disclosure should be given the same status with financial disclosure by making it mandatory for firms operating in the Nigerian economy, to forcefully embark on it. Laws and statutes should be promulgated to ensure this. It could assist greatly in elevating environmental disclosure to a higher level.

Compliance with DPR/NESREA rules and regulation is very poor and have negative impact on environmental disclosure. The authorities should therefore, reorganize and restructure these organizations together with formulating friendly and effective environmental policies that will have positive impact on environmental disclosure. It should be noted that the discoveries shows that a significant relationship exists between environmental disclosure and DPR/NESREA supervisory role. This significant influence must be maintained.

The resultant impact of 6.38% of the environmental agencies on environmental disclosure is very low (below 50%). The authorities should therefore act to boost this impact to a higher level. The higher the impact, the more effective and efficient the monitoring by environmental agencies.

Limitations and Further Studies

As earlier mentioned triple bottom line (TBL) reporting constituted three major elements: economic, social and environmental aspects. This study was exclusively for the environmental aspect. Further studies are recommended on the relationship between environmental monitoring agencies and either the economic or social performance of organizations in the Nigerian or any other economy.

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Appendix

Major Aspects of G4 Environmental Disclosure

The G4 standard provided 12 Aspects of items on which disclosure is to be made. The Aspect in each sub-category shows the specific items to be disclosed under it. Starting from the first sub-category, the main items of information to be disclose are given below.

1. Material Aspect:
 - Materials used
 - Recycled input materials
2. Energy Aspect:
 - Energy consumed inside the organization
 - Energy consumed outside the organization
 - Energy intensity ratio
 - Energy reduction
3. Water Aspect
 - Water withdrawal
 - Water sources affected
 - Recycled and reused water
4. Biodiversity Aspect:
 - Areas of high biodiversity value
 - Impact of companies operations on biodiversity
 - Habitats protected and restored
 - Total number of species within habitat in areas of operation.
5. Emissions Aspect: - this aspect involves indicators of greenhouse gasses (GHG) emissions as well as ozone-depleting substances like nitrogen dioxide, sulphur dioxide, hydrogen dioxide, carbon dioxide and other important air emissions.
 - GHG emissions
 - Energy indirect GHG emissions
 - Other indirect GHG emissions
 - GHG emission intensity ratio
 - Reduction of GHG emissions
 - Emission of ozone-depleting substances
 - Nitrogen dioxide, sulphur dioxide, carbon dioxide and other significant air emissions

6. Effluents & Wastes Aspects:
 - Total water discharge by quality and destination
 - Total weight of waste by type and disposal
 - Total and volume of significant spills
 - Weight of hazardous wastes under the terms of the Basel Convention
 - Identify biodiversity value and related habitat affected by firms operation
7. Product and Services Aspect:
 - Extent of products and services environmental impact
 - Percentage of products sold and their reclaimed packaging materials
8. Complain Aspect:
 - Monetary value of fines
 - Total number of non-monetary sanctions for non-compliance with environmental laws and regulations
9. Transport Aspect:
 - Environmental impact of transporting workers from organization's operation
 - Environmental impact of transporting products from organization's operation
 - Environmental impact of transporting goods from organization's operation
 - Environmental impact of transporting other materials from organization's operation
10. Overall Aspect:
 - Total environmental protection expenditures by type
 - Total environmental protection investments by type
11. Supplier Environmental Assessment Aspect:
 - Percentage of suppliers screened using environmental criteria
 - Important actual and potential negative environmental impacts in the supply chain and actions taken
12. Environmental Grievance Mechanism Aspect:
 - Total number of grievances about environmental impacts filed
 - Total number of grievances about environmental impacts addressed and resolved through formal grievance mechanism.

