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Kajolam Fruitful Ventures
C/O Department of Accounting,
Bingham University
Tel: 08027629054, 08065662589
E-mail: kfventures@gmail.com

ENVIRONMENTAL INFORMATION DISCLOSURE BY LISTED MANUFACTURING COMPANIES IN NIGERIA

ONMONYA, Lucky
Department of Accounting,
University of Jos,
Plateau State

ARUMONA, Jonah
Department of Accounting,
Bingham University
Karu, Nasarawa State

Abstract

The growing public agitation for companies operating in environmentally sensitive industries that have caused alarming pollution, global warming and other forms of environmental damage to mitigate adverse environmental impact of their operation necessitated their disclosure of environmental information. The extent to which Nigerian companies publish this information in annual report is largely unknown. It is for this reason that this study investigated the environmental disclosure practice by manufacturing companies listed on the Nigeria Stock Exchange (NSE). This is an aspect of the sustainable development reporting known as the Triple Bottom Line reporting or Triple-P. that is, profit [economics], planet [environment], and people [social] reporting. The study is a longitudinal study that covers a 12-year period (2004-2015). The population of this study is a total of 39 manufacturing companies. Descriptive statistics measures were used to summarise and analyse the level and trend of environmental disclosure. One Way ANOVA was used to test whether the means of the level of environmental disclosure by the sampled companies for the 12 years are equal. Findings show that environmental disclosure is low but the steady increase over the 12-year period despite the absence of mandatory environmental disclosure standard or regulation in Nigeria suggests that listed manufacturing companies are responding to public pressure to mitigate environmental damage. This response to voluntarily environmental disclosure is to gain, maintain or defend their legitimacy to continue operation in the face of heightened international and local campaign, advocacy and regulations for mitigating environmental damage and ensuring environmental sustainability. It is recommended that the Financial Reporting Council of Nigeria (FRCN) should issue an accounting standard to sufficiently address environmental issues in annual reports. This will lead to mandatory disclosure of environmental information.

Key Words: Environmental Damage, Sustainable Development, Environmental Disclosure

INTRODUCTION

There have been growing public concerns in the last few decades on how companies operating in environmentally sensitive industries such as manufacturing have caused alarming pollution, global warming and other forms of environmental damage. The adverse impact of industrial production has become a threat to the physical environment as well as creating health hazards which are detrimental to host communities, customers, employees and society at large. It is in the light of this that there are increasing agitations for companies to disclose environmental information on environmentally friendly activities or investment that eliminate adverse environmental impact and safeguard the environment. However, at the international scene, there is no international accounting standard that deals exclusively with environmental accounting disclosure, but there has been overwhelming support for environmental disclosure by companies since the launching of the GRI sustainability reporting framework on environmental reporting. The challenges of environmental disclosure in Nigeria are lack of accounting standard for environmental reporting and lack legislation for mandatory disclosure of environmental information. Thus, environmental disclosure in annual reports is voluntary.

However, as public demand for clean and safe environment increases and, consequently, the need for environmental accounting disclosure heighten, it is expected that disclosure by companies operating in a sector with high adverse environmental impact such as manufacturing should increase. This will likely not be the reality in Nigeria since environmental disclosure is voluntary. Environmental disclosure by listed manufacturing companies is largely unknown in term of the level of disclosure over the years, environmental themes disclosed and their location in Annual Report. There is also considerable doubt about the increase in environmental disclosure despite increasing agitation and legislation for environmental sustainability. The implication is that the public or relevant stakeholders will have difficulty in having information about the response of Nigerian listed manufacturing companies in mitigating environmental damage based on global best practice. Therefore, it is needful to use environmental disclosure themes that are consistent with the GRI sustainability guidelines on environmental disclosure to assess the extent of environmental disclosure by Nigerian listed manufacturing companies.

This study provides a useful guide for advocacy groups on environmental sustainability as well as environmental accounting and reporting in Nigeria. The findings and recommendations of this study will also give a direction on building corporate governance and accountability framework for environmental reporting in Nigeria. Policy makers in government will also be enlightened on the need to make corporate environmental reporting not just voluntary but mandatory. This can make the Financial Reporting Council of Nigeria (FRCN) to formulate accounting standard on environment accounting disclosure. Specifically, the Federal Ministry of Environment, NESREA and other States' Environmental Protection Agencies will find this study very useful. This will give them an understanding that corporate environmental accounting disclosure is a vital way of making companies to be environmentally sensitive and contribute to clean and safe environment. The aim of the study is to investigate the environmental disclosure practice by manufacturing companies listed on the Nigeria Stock Exchange (NSE).

Research Hypotheses

H_o 1: There is no significant difference in environmental disclosure by manufacturing companies from year 2004 to 2015.

Environmental Damage and Sustainability

The United Nations International Strategy for Disaster Reduction (UNISDR) (2009) defined environmental damage or degradation as the reduction of the capacity of the environment to meet social and ecological objectives and needs. The UNISDR further explained that degradation of the environment can alter the frequency and intensity of natural hazards and increase the vulnerability of communities. The types of human- induced degradation are varied and include land misuse, soil erosion and loss, desertification, wild land fire, loss of bio-diversity, deforestation, mangrove destruction, land, water, and air pollution, climate change, sea level rise and ozone depletion. The concept of sustainability is used to describe the use of natural resources, products and energy in a way that they do not have negative impact on the environment. A notable global step in ensuring environmental sustainability is the placing of the sustainability on the agenda of governments and businesses worldwide through the 1987 United Nations World Commission on Environment and Development report popularly known as the Brundtland Report. Deegan (2005) points out that the brief of the report was to produce a global agenda for change in order to combat or alleviate the on-going pressures on the global environment considered as being clearly unsustainable. It was generally accepted that business organisations must change the way they do business and they must learn to question traditionally held business goals and principles perhaps with encouragement from government. Business organisations should also focus on sustainable development.

The Brundtland report define 'sustainable development' as a development that meets the needs of the present without compromising the ability of future generation to meet their own needs (World Commission on Environment and Development (WCED), 1987). At the heart of this concept is the belief that economic, social and environmental objectives should be complementary and inter-dependent in the development process. Therefore, sustainability entails balancing the economic, social and environmental objectives of society (Clayton and Bass, 2002). It is obvious that to meet the needs of the present without diminishing the capacity of future generations to meet their own is a great challenge of sustainability. Oyesiku (2009) who define sustainable development as a development path along which the maximization of human well-being for today's generation does not lead to declines in future well-being, also states that attaining the part of sustainability requires eliminating the negative externalities that are responsible for natural resources depletion and environmental degradation. There is recognition that the move towards sustainability cannot be achieved without the reporting or disclosure of social and environmental accounting information (Gray & Bebbingtion, 2002; Murray, Sinclair, Power & Gray, 2001; Ashcroft & Smith, 2007). Global focus on sustainable development has made environmental disclosure practice a relevant aspect of accounting and an innovative sustainability initiative. Suranni (1999) and Turner (2004) point out that sustainability accounting in the form of environmental accounting and reporting plays a crucial role in the move towards achieving sustainability. Jones (2005) explains that issues associated with accounting for the environment, environmental audit and related issues have become increasingly relevant to business as environment pollution has become a more prominent economic, social and political problem throughout the world. Jones (2005) point out that steps are being taken as national and international levels to protect the environment and to reduce, prevent and mitigate the effect of pollution; thus, companies are now being expected or required to disclose information about their effort in mitigating environmental damage.

The issue of sustainability led to the emergence of sustainability accounting. Sustainability accounting is concerned with the identification, measuring and reporting of information on economic, environmental and social performance of an entity as contribution to sustainable development. It is related to the Triple Bottom Line reporting or Triple-P: that is, profit [economics], planet [environment], and people [social] reporting (Tilt, 2009). Therefore, for an organisation to be sustainable; that is, having a long term perspective, it must be financially secured as shown by such measures as profitability [economic objective]; minimise or ideally eliminate its negative environmental impact [environmental objectives]; and act in conformity with societal expectation [social objective] (Bansel & Roth, 2000). This shows that traditional accounting which mainly focuses on reporting financial performance can be extended to include reporting of social and environmental performance. Thus, a core aspect of sustainability accounting is environmental accounting.

Corporate Environmental Disclosure

According to Lorraine, Collison and Power (2004), environmental disclosure has been a means by which companies report the impact of their activities on the environment and their performance in minimising adverse impact in response to societal concern. Barnali and Puja (2015) explain that environmental reporting and disclosure practices are means of communicating to the relevant publics or stakeholders about the impact of the organization's actions on the environment. The reporting can be done in the form of financial or non-financial reporting. Environmental accounting information are used by relevant publics or stakeholders such as investors, long term creditors, suppliers, customers as well as regulatory agencies, local communities, civil society groups and the media. The users of environmental accounting information identified by Brandy (2006) are shown in table 1.Financial stakeholders such as shareholders, bankers and long term creditors may be concerned with the mitigation of environmental risks that can result to huge liability and threat to their stake. Local communities may be concerned by local environmental hazards caused by a company operation and whether or not the organisation is acting as good neighbour by contributing to clean and safe environment. Customers may be concerned with responsible care, that is, whether companies' products are of the right quality and standard. Suppliers may be concerned with ethical purchasing considerations or the contents of their supply chain. Environmental regulatory and protection agencies are concerned with compliance with environmental regulations and standards. Civil society groups such as Environmental Non-Governmental Organisations, Community based Organisations, the media and the general public are concerned with responsible behaviour of companies and compliance with ethical code.

Table 1: Users of Corporate Environmental Accounting Information in Annual Reports

Users	Areas of Interest
Financial stakeholders	Company's response to mitigation of environmental risks to protect their stake.
Local communities	Response to the prevention of local hazards and whether or not the company is acting as good neighbour.
Customers	Responsible care in terms of product quality and services delivery
Suppliers	Ethical purchasing considerations or with contents of their supply chain.
Regulatory Agencies	Compliance with environmental regulations and standards
Civil Society and the General Public	Responsible behaviour of companies, compliance with ethical code.

Source: Environmental Management in Organizations by Brandy (2006) P. 209

LITERATURE REVIEW

Theoretical Review

A number of theories have been used in many countries and in different contexts to develop a framework that explain environmental disclosure practice by companies. The most widely used theories are the Institutional Theory, Stakeholder Theory and Legitimacy Theory. Legitimacy theory is used in this study because it provides a strong theoretical base for explaining voluntary environmental disclosure in a developing country such as Nigeria. In many developing countries, there is weak institutional support as well as flabby stakeholders' power to compel corporate environmental accounting disclosure. The institutional theory posits that organisations are part of the larger social system or environment in which they operate and their behaviours or practices are influenced or conditioned by the system's regulation and expectation (Deegan & Jeffrey, 2006). The theory is used to explain how institutional norms and pressure affect social change and the adoption of a particular practice among organisations. The theory is slowly but steadily emerging as a useful theoretical framework in relation to corporate environmental disclosure implications due to increasing environmental protection awareness, requirements and regulations.

The stakeholder theory posits that a company's stakeholders can compel the company to disclose social and environmental information because it is their right to know the social and environmental impact of the company's operations. The theory predicts that the relative power of a particular stakeholder group (with power often being defined in terms of group's control over scarce resources) will determine whether that group's receives the accounting information it desires (Deegan, 2005). Legitimacy theory predicts that organisations seek to be perceived by the community as legitimate and that accounting information can be used as one means to bring legitimacy to the organisation (Deegan, 2005). Legitimacy theory posits that for a company to continue to exist, it must act in congruence with society's values, norms and beliefs. Legitimacy theory is selected in this study as the most compelling theory for the explanation of voluntary environmental accounting disclosure practice by listed manufacturing companies in Nigeria. This is because of weak institutional framework and inability of powerful stakeholders to compel environmental accounting disclosure in Nigeria. Deegan (2005) points out that Legitimacy theory predicts that in certain circumstances organisations will use positive or favourable disclosures in an effort to restore the legitimacy of an organisation. Dowling and Pfeffer (1975) were the proponents of organisation legitimacy theory. They contended that since organisations are part of a larger society, they will continue to ensure that they operate within the values, norms or bounds and beliefs of the society so that their activities can be recognized by society as 'legitimate'. According to Cho & Roberts (2010), the proponents of the Legitimacy theory as the basis for environmental disclosure (e.g..; Patten, 1991; Lindblom, 1994; Hackston & Milne, 1996) points out that the pressure and demand for legitimacy systematically drives the extent of social and environmental disclosures. Nihal (2015) explains that environmental disclosures can be used to repair legitimacy in so far as such disclosures address society's concerns and supposedly offset criticism and cultivate societal support. Hence, companies may change the type of disclosure at some point or reduce environmental disclosures as and when they perceive shifts in legitimacy threats (De Villiers & Van Staden, 2006). Branco and Rodrigues (2007) explain that apart from provide economic benefits, such as profits, wages and employment, and comply with law to be considered as legitimate, it has become necessary for companies to act and be seen acting within the bound of what is considered as acceptable according to the value and norms of society. The company should appear to consider the right of the public at large and not merely those of investors (Joshi, Suwaidan & Kumar, 2011). How a company operates and reports is largely influenced by the social values of the community in which they exist. One way for companies to remain legitimate to important conferring publics is voluntary disclosure of social and environmental information in annual reports.

EMPIRICAL STUDIES

Several studies have also been conducted in many developing countries. Ahmad and Sulaiman (2004) used the legitimacy theory framework to investigate the extent and types of voluntary environmental accounting disclosure in annual reports of construction and industrial products industries in Malayisia for the year 2000. Finding reveals that the level of environmental disclosure was very low despite being reported in many sections of the annual reports. Hossain, Islam and Andrew (2006) also conducted an exploratory study to investigate the extent and nature of social and environmental reporting in corporate annual reports in developing countries with specific reference to Bangladesh. A sample of 107 companies' annual reports for the years 2002 and 2003 were used. The study shows that social and environmental disclosures are low. Yao, Wang and Song (2011) conducted a study with 800 listed companies on the Shanghai Stock Exchange in 2008 and 2009 using legitimacy theory to explain social and environmental disclosure practices in China. The research result supports the legitimacy theory as providing an important insight for managers' interest in exploiting annual reports as a tool to legitimise their corporate social conduct in an emerging market.

Ahmad (2012) also investigated annual reports of 100 Bangladeshi companies. The study reveals that environmental accounting disclosure level has improved over the last 10 years and all sampled companies have an average of 19 per cent disclosure which is still low based on global standard. Jinfeng and Huifeng (2009) examined the level of environmental accounting information disclosure of manufacturing companies listed on the Shanghai Stock Exchange. Finding shows improvement in environmental disclosure level but the level is low and unable to satisfy information users. Joshi et al. (2011) also examined factors influencing the level of environmental disclosure from a sample of 45 Indian listed companies using their websites and annual reports. The study shows a tendency to disclose environmental protection information but the level of disclosure is low. Suttipun and Stanton (2012) investigated the extent and content of environmental information disclosure provided in 2007 annual reports of 75 companies listed on the Stock Exchange of Thailand (SET). Result indicates that 62 companies (83 per cent) provided environmental information in their annual reports.

Romlah, Takiah and Nordin (2002) investigated the environmental reporting practice in the annual reports of Malaysian companies and discovered that majority of disclosures were in the Chairman's Reports and Review of Operation Statement.
Kabir and Akinnusi (2012) investigated corporate social and environmental accounting information disclosure practices by manufacturing companies in Swaziland over a period of two years, from 2007 to 2008. Findings show that the concept of corporate social and environmental accounting is fairly new in Swaziland and very few companies disclose social and environmental information in corporate annual reports. Tang, Peng and Zhou (2014) investigated the practice of policy about corporate environmental information disclosure in China. Data were obtained from listed companies of Heavy polluting industries. Finding reveals that the quality of environmental information disclosure is not good enough. The main reason lies in the system unreasonable design and poor independence of the regulatory authorities. Ullah, Hossain and Yakub (2014) examined the environmental disclosure practices and extent of disclosure of listed textile industries in Bangladesh. The study reveals that more than two-third (69%) of the sample companies addressed no environmental issues in their annual reports and

on average, textile industries disclosed very poor information regarding environmental aspects where variation of disclosure among the industries is considerably high. Ngonidzashe and Stainbank (2014) investigated the nature and extent of sustainability reporting in the mining and manufacturing industries in South Africa. The research found that over the five years examined, companies in both industries increased their sustainability disclosures in term of environmental and social information. However, overall, mining companies provided more information in their reporting.

Nihal (2015) investigated the extent and content of environmental disclosures across sectors according to their environmental impact in Turkey. The purpose of the study is to extend organisational legitimacy arguments. The industrial sectors were sorted into three groups as high impact sectors, medium impact sectors and low impact sectors. The results of this study fail to confirm legitimacy theory as an explicator of environmental disclosure in the Turkey. The sample companies operating in medium impact sectors have a higher tendency to disclose environmental information and to provide a stand-alone environmental report and separate environmental section in their annual reports than companies in high and low impact sectors. Ebimobowei (2011) investigated social accounting disclosure in annual reports of forty Nigerian listed companies in eight sectors for the period 2005 to 2007. The extent of disclosure in terms of the themes, forms and location in annual reports were measured and analysed using content analysis and descriptive statistics respectively. The study revealed that only 15 % of the companies present environmental disclosure in annual reports. Owolabi (2009) conducted a study on annual report environmental disclosure in Nigeria using 20 companies from 10 sectors of the Nigerian economy. The period of coverage is 5 years, ending in December, 2006. Using descriptive statistics, the study reveals that only 7 out of 20 companies spread over 6 out of 10 sectors examined provided one form of disclosure or another. The companies are also mainly multinationals operating in Nigeria with their action more likely to be parent company policy driven because environmental accounting information disclosure is not mandatory in Nigeria. Uwuigbe (2011) investigated corporate environmental reporting practice among listed companies in Nigeria and South Africa using the stakeholder theory. Content analysis of 5 years (2004-2008) annual reports and companies websites were used. A sample of 60 companies, 30 from each country was selected. Findings reveal that there is a significant difference in the level of environmental disclosure between South African and Nigerian companies, but South African companies produced higher disclosures. However, despite disclosure level noticed, environmental disclosure is low, voluntary, ad hoc and self-laudatory. Uwuigbe and Olayinka (2011) also conducted a comparative study on corporate social and environmental disclosure in Nigeria using two manufacturing sub-sectors, Building Material and Brewery industry. The annual reports of 10 sampled companies (5 from each industry) for the period 2004 – 2008 were used. The Student t-test was used to determine whether there is a significant difference between the two industry groups. Result reveals that on the average, all sampled companies have some form of corporate social and environmental information disclosed in their annual reports and that disclosure in brewery industry is comparatively higher than building material industry.

Adeyemi and Ayanlola (2014) conducted a study on voluntary social responsibility disclosure practice of non-financial sector organisations in Nigeria. They concluded that there has been haphazard reporting of CRS information in Nigeria and that there is no significant variation in disclosure by the non-financial sector. Nosakhare, Adam and Ahmad (2016) conducted a study that provides a detailed description of the length of Nigerian companies' environmental information disclosure. The research design adopted by the study is basically descriptive. The study utilised panel data structure of 142 sampled companies for a five year period (2009-2013). One-way ANOVA was also used to test whether there are significant differences in the length of environmental disclosure between the different years and industrial sectors. Result shows that there is a significant difference in environmental disclosure from 2009 to 2013 suggesting increase in quantity of environmental disclosure.

METHODOLOGY

This study is a longitudinal study because it involves repeated observation of the same subjects or variables (environmental disclosure and company characteristics) over a 10-year period (2004-2015). Descriptive design was adopted because the study investigated the extent of environmental disclosure in annual reports. It was used to explore and describe the extent and trend of environmental disclosure in annual reports in terms of the level and trend of disclosure as well as the pattern of disclosure in relation to environmental themes and locations in annual reports. This was used in study such as Bala and Yusuf (2003), Hossain et al.(2006), Ahmad (2012) and Albertini (2014). This research used content analysis method to obtain and analyse data from corporate annual reports. This is in line with many studies such as Hackson and Milne, 1996; Unermam, 2000; Branco and Rodrigues, 2007 and Uwuigbe, 2011.

Population and Sampling

The population of this study is a total of 39 manufacturing companies. They were selected based on the following criteria: 1. being currently active on the NSE; 2. listed on the main board of the NSE before 2004 and have a 12 year published annual reports (2004 to 2015) submitted to the NSE. The annual reports should also have information on variables of the study. (Refer to Appendix A1). The distribution of these companies according to their sub- sectors is shown in the Table 2.

Table 2: Distribution of Manufacturing Companies according to Sub-Sectors

S/No.	Sub-Sectors	Frequency	Percentage
1	Agricultural Processing	6	15
2	Industrial Goods	12	30
3	Natural Resource Processing	3	8
4	Consumer Goods	15	39
5	Health Care Products	6	15
	Total	**39**	**100**

Data Collection Method

A Corporate Environmental Disclosure Index (CEDI) checklist with un-weighted scores was the research instrument used to collect data on environmental disclosures in annual reports. The CEDI checklist contains seven environmental themes and forty environmental items (refer to Appendix A2). The procedure for collecting data on environmental disclosure involved four steps. First, the annual reports from each sampled company were scrutinised to check for pages that contain environment information based on the corporate environmental disclosure index checklist (refer to Appendix A2 for seven (environmental themes and 40 environmental items used in this study). Second, if environmental information is disclosed, th types of disclosure in terms of the theme and area of location in annual report (for example, Chairman's Report, Director Report, Financial Statements and Notes to Accounts) were identified. Third, a dichotomous coding scheme is used to award score of [1] if an environmental item is disclosed while a non-disclosure item will be assigned [0]. Thus, a company can score maximum of 40 (100%) and a minimum of 0 (0%).

Under this approach, all items of environmental information in the index were considered equally important and the onl consideration is whether or not a company disclosed an item of environmental information in its annual report (Husain, Islar and Andrew, 2006). Thus, the un-weighted disclosure method formula for measuring total corporate environmental disclosur score for a company is given as:

$$CEDI = \sum_{i=1}^{n} \frac{di}{d} \quad \ldots .(1)$$

Where d= '1' if the item 'di' is disclosed or '0' if item 'di' is not disclosed.
n= number of items which might be disclosed by a sampled company.
d= maximum number of items (i.e. 40)

The value of CEDI score is calculated as the ratio of the value of computed total disclosures score obtained by each compan to maximum number of points that is possible to obtain. The ratio is then expressed as a percentage.

RESULTS AND DISCUSSION

Descriptive statistics measures were used to summarise and analyse the level and trend of environmental disclosure (2004 - 2015). The summary is shown in the descriptive statistics of values as shown in table 3 and the accompanying bar chart.

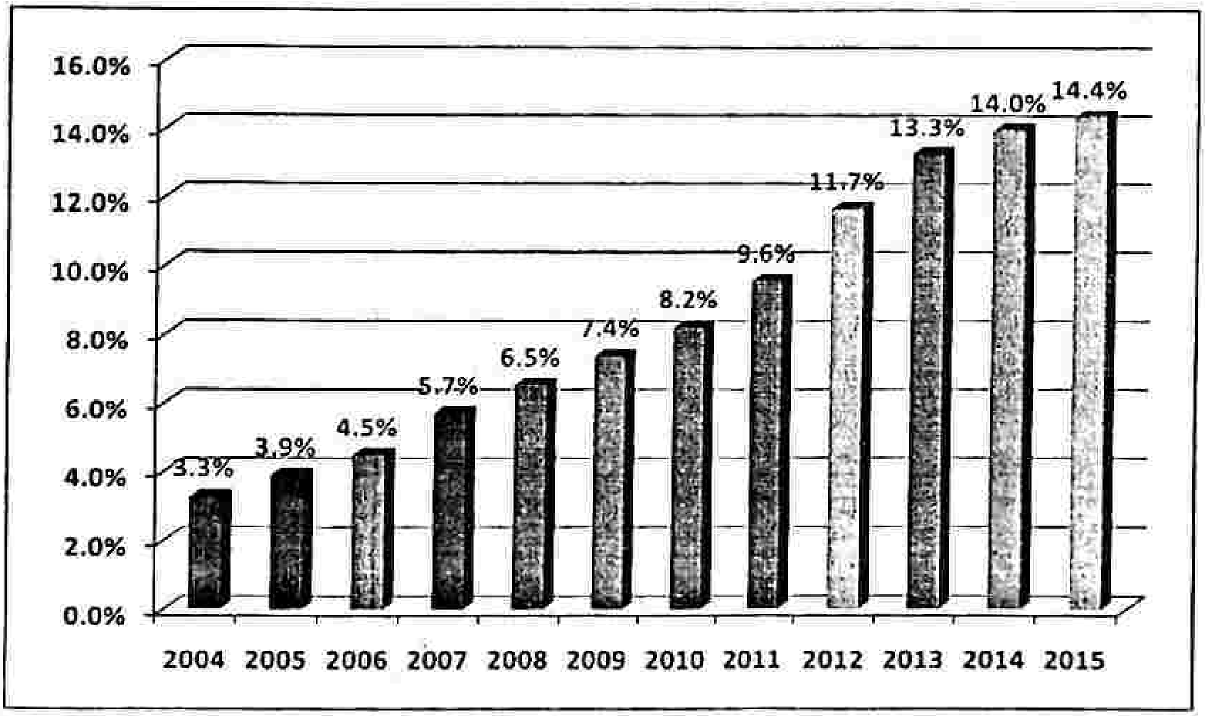
Table 4: Descriptive Statistics on Environmental Disclosure by Sampled Companies

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	51	61	70	89	102	115	128	149	182	207	218	224
%	3.3	3.9	4.5	5.7	6.5	7.4	8.2	9.6	11.7	13.3	14.0	14.4
Mean	1.31	1.56	1.79	2.28	2.62	2.95	3.28	3.82	4.67	5.31	5.59	5.74
STD	1.26	1.54	2.04	2.65	3.34	3.94	4.11	4.41	5.02	5.84	5.95	6.06
Minimum	0	0	0	0	0	0	0	0	0	0	0	0
%	0	0	0	0	0	0	0	0	0	0	0	0
Maximum	5	5	10	11	17	19	20	20	21	23	23	23
%	12.5	12.5	25	27.5	42.5	47.5	50	50	52.5	57.5	57.5	57.5

Source: Fieldwork, 2017

Table 4 shows that the total disclosure for all 39 sampled companies in 2004 is 51 out of the expected 1560 environmental items (each of the 39 companies was expected to disclose 40 environmental items in the CEDI checklist (refer to Appendix 1). This is just 3.3% of expected total disclosure and the lowest for the 12 years. The level of disclosure increases from 3.3% in 2004 to 3.9% in 2005, 4.5% in 2006, 8.2% in 2010 and the highest disclosure of 224 (14.4%) is 2015. (The steady increase is also depicted in the increase in mean disclosure from 1.31 in 2004 to 5.74 in 2015). The standard deviation is 1.26 in 2004, but increased to 6.06 in 2015. The minimum disclosure for companies in all the 12 years is 0. This means that some companies did not disclose any environmental information throughout the period. Notwithstanding, the maximum disclosure for 2004 is 5(12.5%), this increases to 20 (50%) in 2010 and 2011, 21(52.5%) in 2012 and 23 (57.5%) from 2013 to 2015 indicating that some companies have reached the average/moderate level of disclosure based on Reputation Institute rating. The rates of increase in environmental disclosure over the years by some companies are far higher than others. This suggests that disclosures are haphazard and ad hoc. The trend in environmental disclosure by sampled companies is shown by the information provided in chart 1The trend indicates relative increases in disclosure level despite the low level of environmental disclosure.

Chart 1: Bar Chart Showing Environmental Disclosure in Years (2004 – 2015)



Source: Fieldwork, 2017

Test of Hypothesis

One Way ANOVA was used to test whether the means of the level of environmental disclosure by the sampled companies for the 12 years are equal. The model specification for this is:

H_0: $\mu 1 = \mu 2 = \mu 3 = \mu 4 = \mu 5 = \mu 6 = \mu 7 = \mu 8 = \mu 9 = \mu = 10$ (i.e. CED for 12 years are equal)

H_1: H_0 is not true.

The decision rule using Test Statistic is to reject H_0 if F test calculated (F) is more than F critical value (F_α) at 0.05 level of significance. Using P-value, H_0 is rejected if P-value is less than 0.05. The a priori expectation is that environmental disclosure among sub-sectors is not equal. ANOVA Table is presented in Table 10.

Table 10: Analysis of Variance for differences in CED from 2004 - 2015

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.7205	11	0.0655	5.70450	1.22E-08	1.8096
Within Groups	5.2359	456	0.0114			
Total	5.9564	467				

To make hypothesis testing decision, the test statistic is compared with the critical value. If the test statistic is greater than the critical value, the null hypothesis of no significant difference is rejected and vice versa. Alternatively, the p-value can also be used to make the hypothesis testing decision. The decision rule is that when the p-value is less than the level of significance (0.05) at which the test was made (that is, $p < 0.05$), we reject the null hypothesis and accept the alternative hypothesis and vice versa. Hypothesis testing decision can now be made by comparing the test statistic, the **computed *F*-value** (F = 5.7045), to the **critical *F*-value** ($F_{0.05}$ = 1.80966). Since the test statistic (F = 3.0650) is more than the critical value ($F_{0.05}$ =2.5787), we reject the null hypothesis and conclude that there is significant variation in environmental disclosure by listed manufacturing companies from 2004 to 2015. Similarly, the P-value (0.000) is less than the level of significance (0.05); thus, the null hypothesis is rejected. This indicates that there is increase in environmental disclosure by manufacturing companies.

Discusion

The increase in environmental disclosure by manufacturing companies is in agreement with Nosakhare et al.(2016). It is also in agreement with Patten (1992), Deegan and Rankin (1996), O'Donovan (2002), Tilling and Tilt (2010) and Ahmad (2012) which reveals that the occurrence of an event that threatened or provides opportunity to enhance the legitimacy of companies' operations can lead to increase in environmental disclosure. This suggests that the launching of the Global Reporting Initiative 2002 led to the response of companies to disclose more environmental information in order to gain legitimacy. This supports the finding of Nosakhare et al. (2016) which shows that there is a significant difference in environmental disclosure by Nigeria companies from 2009 to 2013 suggesting increase in quantity of environmental disclosure.

However, Descriptive statistics show that environmental disclosure for the 12 years by listed for manufacturing companies in Nigeria is low based on global standard despite the steady increase in environmental disclosure. The level of disclosure increases from 3.3% in 2004 to 3.9% in 2005; 4.5% in 2006, 8.2% in 2010 and the highest disclosure of 224 (14.4%) in 2015. The steady increase is also depicted in the increase in mean disclosure from 1.31 in 2004 to 5.74 in 2015. This is above the GRI 2010 3% average score for Africa. 2006 to 2015 level of disclosure is also above the average score of 4% for Oceania.

However, the level of disclosure for all the years is below the average scores for Europe (45%), Latin and Northern America (28%) and Asia (20%). The trend shows increasing level of disclosure but the level of environmental disclosure by listed manufacturing companies in Nigeria is low. This is far below the benchmark of the Reputation Institute corporate social responsibility rating which assesses the adequacy of social and environmental disclosure. The rating ranges from excellent/top tier (75-100%), strong/robust (66%-75%), average/moderate (56%-65%), weak/vulnerable (45%-55%) to poor/lowest tier (below 45%). Environmental disclosure by listed manufacturing companies in Nigeria with highest of 14.4% in 2015 is far below the lowest tier of the Reputation Institute. This shows that the level of disclosure by sampled manufacturing companies is low. This is in agreement with Ahmad and Sulaiman (2004), Hossain et al. (2006); Haider (2010); Joshi et al. (2011); Ahmed (2012); Bunianim (2012); Kabir and Akinnusi (2012); Waris (2013) and Onyali, Okafor and Egolum (2014) that reveal that corporate environmental disclosure in many developing countries is still very low. Uwuigbe (2011) who studied environmental disclosure by firms in Nigeria and South Africa also pointed out that despite the disclosure level noticed, environmental disclosure is low in both countries. Result on the dispersion of the distribution of environmental disclosure scores by sampled companies over the years as shown in the increase in standard deviation from 1.26 in 2004 to 6.06 in 2015 reveals that disclosure is haphazard and ad hoc. This is in tandem with Uwuigbe (2011); Uwuigbe and Olayinka (2011) and Uwuigbe and Jimoh (2012).

Finding also reveals that 35 companies representing 89.7% of sampled companies made disclosure. Five companies with the highest mean disclosure are Lafarge Cement - 15; Glaxo Smithkline - 13; Nigeria Breweries Plc - 10;Nestle Nigeria Plc - 8; Guinness Nigeria Plc - 8 and Cadbury Nigeria Plc - 8. Four of these companies (Glaxo Smithkline, Nestle Nigeria Plc., and Cadbury Nigeria Plc.) are subsidiaries of multi-national companies. Four companies representing 11% of sampled companies did not disclose any environmental information. These are Cutix Plc., Vono Product Plc., Aluminium Extrusion Plc. and Fidson Healthcare Plc. The highest environmental item disclosed is environmental health and safety. This was disclosed by 33 companies. 16 companies disclosed information relating to implementation of a relevant ISO relating to quality or environmental management system. Companies and environmental policy, values and principles as well as statement about the firm's compliance (or lack thereof) with specific environmental standards were disclosed by 10 companies. Only a few companies disclosed other environmental items. 7 companies made disclosure on environmental management systems regarding environmental risk and performance. 6 made disclosure on community involvement and/or donations related to environment; employee training in environmental management and operation; and an overview of environmental impact of the industry. In all, 29 (72.5%) environmental items were disclosed by sampled companies. No disclosure was made in relation to 11 environmental items in the annual reports of sampled companies. This represents 27.5% of the total items. The low level disclosure suggests that companies have not considered the mitigation of environmental damage as a serious issue in Nigeria. However, the slight increase in disclosure shows that environmental disclosure is meant to improve corporate image in order to gain or maintain organizational legitimacy.

SUMMARY, CONCLUSSION AND RECCOMMENDATIONS

The summary of major findings includes the following:

i. There is a significant difference in environmental disclosure from 2004 to 2015. This is an indication that there is increase in environmental disclosure by manufacturing companies.

ii. However, environmental disclosure level is low and haphazard.

iii. 35 companies representing 89.7% of sampled companies made disclosure

iv. 29 (72.5%) environmental items were disclosed. Environmental disclosure is mainly in narrative form and appeared in the directors' and chairman's reports as well as section devoted to CSR/Environmental or Sustainability Report sections of the annual reports.

Environmental disclosure is low but the steady increase over the 12-year period despite the absence of mandatory environmental disclosure standard or regulation in Nigeria suggests that listed manufacturing companies are responding to public pressure to mitigate environmental damage. This shows that the occurrence of an event that threatened or provides opportunity to enhance the legitimacy of companies' operations such as response to the advent of the GRI can make manufacturing companies to increase in environmental disclosure. This response to voluntarily environmental disclosure is to gain, maintain or defend their legitimacy to continue operation in the face of heightened international and local campaign, advocacy and regulations for mitigating environmental damage and ensuring sustainability. The environmental sensitivity of the manufacturing sector attracts much public attention and pressure for them to engage in environmentally responsible and friendly activities. The results confirm previous findings and support the legitimacy theory.

Consequently, the following are recommended based on the research findings:

i. The Financial Reporting Council of Nigeria (FRCN) should issue an accounting standard to sufficiently address environmental issues in annual reports. This will lead to mandatory disclosure of environmental information.

ii. The GRI base CEDI used in this study provides an array of environmental themes/items that a company can disclose (refer to Appendix 1). This provides useful guide and it is in line with global best practices. The standard should make more provision for environmental disclosure should be more in the financial statement sections of the annual reports. This will result to increase in monetary disclosure.

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