



Environmental accounting disclosure practice of quoted manufacturing companies in Nigeria

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Abstract

The study assessed the level of environmental disclosure practice of manufacturing companies in Nigeria. Anchored on the legitimacy theory, the *ex post facto* research design was adopted by the study. The sample was drawn from a population of 60 quoted manufacturing companies on the floor of the Nigerian Stock Exchange as on 31 December 2017 using the judgmental sampling technique. The study variables were sourced from the annual reports and the stand-alone environmental reports of the selected companies from 2007 to 2017. The global reporting initiative environmental disclosure index was adopted in assessing the disclosure practice of the companies over the years. The findings showed that the environmental disclosure practice of the quoted manufacturing companies was low in the areas of material, energy, emissions, effluent and waste, water and biodiversity. A good number of the manufacturing companies disclosed very well the theme 'others' in the area of environmental expenditure and investment. The study further observed a non-significant statistical difference in the disclosure practice of manufacturing companies over the years ($t = -1.440, p = 0.223$). The study concluded that there exists no significant difference in the level of environmental disclosure practice of manufacturing companies in Nigeria from 2007 to 2017.

Keywords: Environmental disclosure, legitimacy, global reporting initiative, environmental expenditure and investment.

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1. Introduction

The industrial revolution brought about expansion in the scope of businesses and improved economy particularly for those in the industrialised society (Beredugo & Mefor, 2012). As a result, large companies, due to the industrial revolution, not only benefitted their shareholders, but they also impacted, often negatively, the environment, health and safety of employees, customers, surrounding neighbourhoods and communities (Seema, Anand & Salma, 2013). The use of natural resources and energy in manufacturing companies is expedient and this is not without environmental consequences (Uwuijbe & Ben-Caleb, 2012). Therefore, there is perceived feeling that manufacturing firms should be more involved in environmental accounting than non-manufacturing firms.

Environmental accounting is used for internal organisations' decision-making processes and procedures which include descriptive qualitative and quantitative monetary information on material and energy consumption, the outflows, waste generated and monetary information on costs, savings and revenue on any activity with potential environmental impacts (Nurhayati, 2014). The need to be globally relevant, as well as the negative consequences arising from the non-reporting of environmental impacts by corporate organisations, has resulted into increased academic debates and initiatives on this subject matter. These negative consequences include pressure on business activities from external forces such as the society, non-governmental organisations, government, consumers, human rights activists and environmentalists. Environmental accounting disclosure comprises various methods that organisations adopt in reporting their environmental impacts on stakeholders and measures they have adopted in preventing and cleaning-up these impacts. Environmental accounting disclosure could be in quantitative terms following the cost approach or qualitative terms following the descriptive approach (Odhiambo, 2015).

There are various frameworks that are available for reporting on the impact of economic activities on the environment (Adeyemi & Ayanlola, 2015; Jose & Lee, 2007). From the global perspective, the global reporting initiative (GRI) is one among other international environmental reporting guidelines (Jose & Lee, 2007). The GRI was one of the other international environmental reporting guidelines, which according to Jose and Lee (2007) were proposed by industrial organisations in 1996 with the introduction of an exposure draft titled: 'Sustainability Reporting Guidelines'. As opined by Alan-Willis (2003), the GRI was borne out of the request for more information about corporate environmental and social performance, variation and inconsistent reporting by companies and signs of increase in reporting guidelines from various other countries and sectors of the world and consequently, the need for a global standardisation of format and content for corporate reporting on environmental performance. The aim of the GRI is to develop a reporting framework, voluntary in nature, which will elevate sustainability reporting practices to a level equivalent to that of financial reporting with rigour, comparability, audit ability and general acceptance (Alan-Willis, 2003). Furthermore, the GRI sets out the structure and content recommended for reporting which companies are expected to adopt and follow when preparing and issuing environmental reports. The GRI environmental disclosure index has 32 items divided into 5 broad categories of materials: 3 items for energy, 6 items for water and biodiversity (BIO), 8 items for emission effluents and 10 items for waste, while 5 items are for 'others' category. Under the others category, items to be disclosed include initiatives to mitigate environmental impacts, products sold and their packaging materials that are reclaimed, environmental impacts of transporting products and workforce members, total environmental expenditures and investment, fines and sanctions for non-compliance with environmental laws (CEL) and regulations.

Bhattacharyya (2014) employed selected GRI disclosure index in measuring environmental accounting disclosure in Australia. According to Akinlo and Iredele (2014), environmental accounting can be measured using the GRI environmental performance measures which include: energy policy, impact on BIO, award received for installing environmental management system (AWR), environmental research and development cost, environmental pollution and control policy, waste management cost (WSM) and cost of CEL. Ezeagba, John-Akamelu and Umeoduagu (2017) adopted the environmental disclosure index as a measure of performance.

2. Underpinning theory: legitimacy theory

Legitimacy theory suggests that business organisations report on environmental impact in response to pressures from the public in the environment in which they operate. This public pressure could be political or social (Cho & Patten, 2007). The theory is based on the idea that business organisations must consider the rights of the community at large, not merely those of investors if they must continue to operate. It is, therefore, expected that companies that face more pressure can be viewed as those with poorer environmental disclosure and they would be expected to provide more positive disclosures to off-set and avoid increased threats to their legitimacy. Mahadeo, Oogarah-Hanuman and Soobaroyen (2011), in their study, argued that the changes in social environmental reporting are related to a need for companies to demonstrate an affiliation to pro-social objectives, identifying it as the moral legitimacy and, to a lesser extent, these companies are motivated by the need to manage a specific stakeholder, which is referred to as pragmatic legitimacy.

Buniamin (2010) examined the quantity and quality of environmental reporting in annual reports of public listed companies in Malaysia in year 2008 only. Two hundred and thirty four listed companies were sampled and content analysis was employed. It was discovered that larger companies and companies in environmentally sensitive areas published more information, and provided higher quality disclosure as well.

Mahadeo et al. (2011) examined social and environmental reporting (SER) practices of listed companies in the Island economy of Mauritius. Using content analysis of annual reports, quantitative and qualitative changes in SER were analysed in light of recent developments in corporate governance and with regard to the prevailing social and political contexts of Mauritius emerging economy. They found a significant but selective increase in the volume and quality of SER over the period under review (2004–2007).

Ahmad (2012) examined environmental accounting and reporting practices: significance and issues: A case from Bangladeshi companies. There was found a remarkable disclosure on expenditure on energy while others such as WSM, safety-related measures and environment protection presented in their annual reports were not remarkable in the sampled companies.

Farooque, Kotey and Ahulu (2010) explored changes in environmental reporting among Australian Multinationals Enterprises between 2004 and 2007, using the GRI guidelines. Twenty multinationals enterprises formed the study sample and secondary data were sourced from their annual reports for the period of study. Wilcoxon matched pair ranked and Spearman ranked correlation were used as analytical techniques and a significant increase in environmental disclosures on energy, emission and environmental management was found among environmental-sensitive industries than with other industrial sectors.

The Nigerian experience depicts a situation of gradual movement from voluntary environmental disclosure to a relatively regulated disclosure practice through the Code of Corporate Governance for listed companies on the Nigerian Stock Exchange (Mohammed, 2018). However, there is no strict adherence to the requirements of the Code of corporate governance by companies in Nigeria as the practice is very much voluntary in nature. From the foregoing, this study sought to assess the level of environmental disclosure practice of manufacturing companies from 2007 to 2017; to determine if a significant statistical difference exists in the level of the environmental disclosure practice over the period of study.

The only hypothesis for this study stated in the null is:

H₀: There is no statistical difference in the environmental accounting disclosure practice of selected quoted manufacturing companies from 2007 to 2017.

3. Materials and method

The *ex post facto* research design was adopted by the study. The selected sample was drawn from a population of 60 quoted manufacturing companies on the floor of the Nigerian Stock as on 31 December 2017 using a non-probability (judgmental) sampling technique. Values were sourced for the study variables from the annual reports and accounts, as well as the stand-alone environmental reports of the 20 selected companies over an 11-year period from 2007 to 2017. The GRI environmental disclosure index was adopted in assessing the disclosure practice of the selected companies over the years under five broad categorisations which are material, energy, water and diversity, emissions, effluents and waste and others. Content analysis was used in assigning values to the environmental disclosure. Quoted manufacturing companies earned the score ‘1’ each for every category of item disclosed, while any company with no disclosure item earned ‘0’ each for every category of item not disclosed. In testing the only research hypothesis, which examines whether a significant difference occurred in the disclosure practice of the sampled companies over the years, the analysis of variance (ANOVA) and paired sample t-test statistics were employed and the analysis package used was Statistical Package for the Social Science version 20. The *a priori* expectation was that there exists a significant difference in the level of environmental disclosure practice of selected companies over the period of study.

4. Results and discussion

It was observed that a few manufacturing companies performed better than others in disclosing environmental items under the broad categories of the GRI. Companies with an international presence fared better than other companies. This could be due to their international presence and the volume of their manufacturing activities. It was also observed that most of the disclosures by the selected quoted manufacturing companies were under the category ‘others’ which covers environmental expenditures and investment, fines and sanctions for non- CEL. It is noteworthy to state here that the disclosures were not on fines and sanctions for non-compliance, rather they were on environmental expenditures on benefits given back to the society. Furthermore, water and BIO was the second most disclosed item on the list, followed closely by emissions, effluents and waste. Category materials had the least disclosure as majority of the sampled firms did not disclose the implication of their source of materials used on the environment as stated in the GRI environmental reporting index. Energy was the second least disclosed item.

Table 1. Summary of environmental disclosure practice of sampled companies 2007–2017

	GRI disclosure themes					Total
	Material	Energy	Water	Emissions	Others	
Disclosed	13	29	39	33	196	310
Percentage	4.2%	9.4%	13%	10.6%	63.2%	100%
Non-disclosed	207	191	181	187	24	790
Percentage	26.2%	24%	22.9%	23.7%	3%	100%

Source: Authors’ compilation (2019).

Objective two sought to find out whether a statistically significant difference exists in the level of environmental disclosure practice of the selected quoted manufacturing companies from 2007 to 2017. The result of the ANOVA techniques showed that for material $F(10.209) = 1.427$, $p = 0.127$; energy $F(10.209) = 1.256$, $p = 0.257$; water and BIO $F(10.209) = 0.975$, $p = 0.462$; emissions, effluents and waste $F(10.209) = 2.045$, $p = 0.03$; and others $F(9.209) = 0.08$, $p = 1$ categories, no significant difference in the level of environmental disclosure was observed over the years.

Table 2. Results of ANOVA test of significance difference

	ANOVA			Mean	
	Sum of squares	df	Square	F	p-value
Material	0.78	10	0.078	1.427	0.170
Energy	11.45	10	0.143	1.256	0.257
Water	1.436	10	0.144	0.979	0.462
Emissions	2.50	10	0.250	2.045	0.03
Others	0.082	10	0.008	0.080	1.00

Source: Authors' compilation (2019).

The results as contained in Table 3 showed that there is no statistically significant difference in the pattern (disclosed and undisclosed items) of environmental accounting disclosure practice of the sampled companies from 2007 to 2017. Hence, the null hypothesis was accepted because the *p*-values for majority of the themes under ANOVA were more than the critical *p*-value for the significance level of 5%. The *t*-test result for the groups of disclosed and undisclosed items also pointed to the fact that the null hypothesis should be rejected, with a *p*-value of 0.223 which is above the significance level of 5%.

Table 3. Result of the test of significance difference between disclosed and non-disclosed environmental accounting practice

	Paired sample t-test						
	Mean	S. E. Mean	N	Std Dev.	t-Statistic	df	Prob
Disclosed	60.60	34.31	5	76.72	-1.440	4	0.223
Non-disclosed	159.40	34.31	5	76.72			

$p > 0.05$ (ns).

Source: Authors' compilation (2019).

The findings of this study corroborates those of Adeyemi and Ayanlola (2015), who acclaimed that non-significant disclosure practice is due to the voluntary nature of environmental disclosure by the companies in Nigeria. However, the findings failed to align with Farooque *et al.* (2010) study, who observed a significant increase in disclosure practice. Also, in line with Buniamin (2010), it was observed that companies with an international presence disclosed better environmental accounting themes than others without international presence.

5. Conclusion and recommendation

The assessment of environmental disclosure practice revealed that environmental expenditure and investment under the 'others' category was the most disclosed, followed by water and BIO, then emissions, effluents and waste category was the third most disclosed environmental item. Energy and material were the fourth and fifth least disclosed items, respectively. A further test on whether there exists a significant difference in the level of environmental disclosure practice of the companies over the years 2007–2017 showed a non-significant result. This implies that no improvement was recorded on the disclosure practice by the sampled companies over the study period.

The study recommends that regulated mandatory disclosure of environmental themes in its broad categorisation should be enforced in Nigeria in order to improve on the level of environmental disclosure practice. As seen in this study, only multinational companies fared better, hence more enforcement on indigenous manufacturing companies should be introduced and followed through for better disclosure in the future.

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