DETERMINANTS OF ENVIRONMENTAL DISCLOSURE

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Abstract

The objective of this study is to investigate the Determinants of environmental disclosure in Nigeria. The specific objectives therefore, are to examine the effect of industry type, leverage and firm size on environmental disclosure. Historical data were obtained from the financial statements and account of firms in the manufacturing and financial sectors listed in the Nigeria Stock Exchange. The statistical instrument employed in the study, is the Binary logistic panel data regression. Our findings revealed that industry type, firm size has positive relationship, while leverage has no significant effect on environmental disclosure. It was recommended that firms in certain operations that can have effect on the environment should disclose their financial commitments in the annual reports especially those firms that its operations have to do with pollution and other environmental hazard should disclose their environmental information.

Keywords: Determinants, environmental disclosure, firms, industry type, leverage, firm size, annual reports

Introduction

In recent years, the increasing popularity and significant of environmental reporting organization on the determinants of environmental disclosure seek to receive greater publicity to disclose environmental information's in their annual reports due to reasons linking the demands by corporate stakeholders pressure from regulations, the power of environmental groups, the influence of competitors and multinational companies and improving corporate productivity and competitiveness (Muttanachai & Stanton, 2012). There has been wide-ranging research on the determinants of environmental disclosure in academic research mainly in accounting. Walter Corrier and Michel (2006) exposed that environmental disclosure is highly desirable. Richardson and Welker (2001) stated that environmental disclosure may in fact be disadvantageous to firm's cost of capital.

Meanwhile, Beefs and Southier (1999) state that viewing from within the scope of a firm's strategy; environmental disclosure naturally occupies a prominent place. Muttanachai and Stanton (2012) pointed out that environmental disclosure reports are means of reinforcing corporate responsibility for environmental situations. According to Leuz, (2003) and Healy and Palepu, (2001) environmental disclosure extending beyond financial performance measures may be in fact value relevant for investors as it assist in bridging the growing gap between traditional financial statement and market valuation needs. Conversely, Cornier and Magnan (2003) emphasize that in French content, proprietary, cost (leverage and profitability) volume and ownership) are important determinants of a firm's environmental disclosure or report strategy. Most of the studies on the reasons and determinants of environmental disclosure were investigated in developed countries such as: USA, UK, Canada, Australia, Japan with few from developing countries (Abdul 2010).

The study adopted a combination of cross a sectional data and time series (panel) survey data of firms quoted in the Nigerian stock exchange. While panel data survey of the firms cover a period of three years (2011- 2013). A sample size consists of fifty (50) companies from both manufacturing and non-manufacturing sectors were used for the study. The model for this study was adapted from the work of Mejda and Hakim, (2013).

Literature Review and Hypotheses Development

The concept of environmental disclosure reporting gained greater publicity right from the United National conference on environmental and development (UNCED) held in Rio de Janeiro in June 1992. Ishak (2010) defined environmental disclosure as an environmental management strategy to communicate with stakeholders. Environmental disclosure is as well commonly regarded as corporation social responsibility reporting (Degan, 2007). Meanwhile, parker (1986) as cited in Setyorim and Ishak (2010) defined corporate environment disclosure as the reporting by corporate environment disclosure as the reporting by corporation on the social impact of corporate activities, the effectiveness of corporate social programs, as a way corporation's discharging of its social responsibility and the stewardship of its social resources in all.

Accordingly, there has been a major enlargement in the figure of companies in both developed and developing countries making environmental disclosures a matter of necessity in their annual reports and other communication media (Deigom & Gordorn, 1996). Henderson and Parson (2004) explained that environmental reporting covers sustainability so that it reflects concerns about environmental protection, intergenerational equality, the earth and its resources. Following that initiative, many studies have noted that increasing popularity and significant of environmental reporting organization seek to operate within the bounds and norms of their respective societies. Deegan (2002) states that they endeavor to make ensure that their activities are perceived as legitimate by outside parties because a corporation is part of a broader social system. Furthermore, when there is a change in social expectation or stakeholders' concerns, corporation aim at ensuring that their activities in terms of human, environmental and other social consequences respond to those changes to meet social expectations (Deegan, 2001).

Conversely, Campbell, Gaven and shrives, (2003) posit that if companies do not operate in a manner consistent with community expectations, they will be penalized so as to be successful. Thus, corporation must adapt their activities to meet community expectations. According to Wheel and Sillanpea, (1998) environmental reporting is one way to communicate effectively with stakeholder. Moreso and Robert (1994) found that in building trust and loyalty contribute to business performance in organization where they are to be responsible to these stakeholders and depend upon their continued approval to maintain a successful operating environment. Meanwhile, Deegan, Ramkin, and Voguo (2000) argued that firm must seek association between outsider perceptions of their social concern and their activities or actions serving corporate needs. While Campbell al et, (2003) postulate and explain how social and environmental disclosure can be used to narrow or close the existing gap between company actions and social concerns.

Empirical Evidence on Determinants of Environmental Disclosure

Several authorities in developed countries have empirically evidenced in relation to environmental disclosure than in the developing countries. Previous studies is however discussed below.

Firms' Industry Type and Environmental Disclosure

Several previous studies revealed that, companies were classified according to various criteria. Predominantly, companies are separated into two types; high or low profile companies (Choi, 1999; Hackston & Milne, 1996; Patten, 1992). High profile companies are those operating in highly environmentally sensitive industries (Perry & Sheng 1999; Stray & Ballantain 2000; Ho & Taylor 2007), and are however, more exposed to the political and social environment than low profile companies (Newson & Deegan, 2002). Using the association between the levels of corporate environmental disclosure in annual reports and type of industry, many studies Ahmad and Sulaiman,(2004); Ho and Taylor, (2007) and Newson and Deegan, (2002) have established that companies in high environmentally sensitive industries disclose more environmental information in annual reports than companies in low profile industries. Conversely, an early study by Cowen et al. (1987) and a later one in India (Sahay, 2004) found no relationship between type of industry and the levels of corporate environmental disclosure. Upon this backdrop of conflict assertions, we therefore hypothesized that; *there is no significant relationship between industry type and environmental disclosure.*

Firms' Leverage and Environmental Disclosure

Investors in companies and lenders depend solely on financial statements for the evaluation of a firm's financial standing and credit rating. Thus, managers are disposed to increase disclosure to reduce agency costs between insiders and creditor (Mejda & Hakaim, 2013). Cormier and Magnan (2002) and Brammer and Pavelin (2006) demonstrated a negative association between environmental disclosure and leverage. Nevertheless, Roberts (1992) and Naser *et al.* (2006) reported a positive relationship. Most studies in environmental disclosure determinant investigate companies which operate in polluting sectors. These firms concerned are more likely to be punished. Based on this established facts, the bankers and lenders will pay more attention to these companies' communication about corporate environmental responsibility. As a result, the polluting companies will have a preference to report more environmental information if they have more debt. Mejda and Hakaim (2013) found that firm with higher debt are more probable to disclose environmental information. Hence, we state that; *Firms' leverage has no significant relationship with environmental disclosure.*

Firms' Size and Environmental Disclosure

Abdul ((2010) stakeholder theory state that larger companies come under more scrutiny than smaller companies. Therefore, these companies feel the heaviness to disclose more social information to obtain approval from the stakeholders for continued survival (O'Donovan, 1997). Larger firms are as well perceived to be important economic entities and thus have greater demands placed on them to provide more information for customers, suppliers, analysts and government bodies (Cooke, 1991). Making information available is equally made easier because these larger firms possess the necessary resources to furnish stakeholders with the pertinent information and hence producing extra data at a competitive cost than smaller firms (Cooke, 1991, 1992). A positive relationship between size of a corporation and the amount of environmental disclosure has been consistently found by prior studies (Stanny & Ely, 2008; Raar, 2002; Stanwick & Stanwick, 2006 and Ho & Taylor, 2007). Roberts (1992) found a negative association between the size of the company and the level of Corporate Social Responsibility disclosure.

Legitimacy theory suggests that larger companies have to act more in response to disclosures to have a greater influence on social expectations because they have more stakeholders than small companies (Cowen, Ferreri, & Parker, 1987). To verify the truism of the above findings, we hypothesized that; *Firms' sizes have no significant relationship with environmental disclosure.*

Methodology

The study adopted a combination of a cross sectional data and time series (panel) survey data of firms listed in the Nigerian stock exchange. The panel data survey of the firms covers a period of three years, that is, 2012 to 2015. A sample size consists of fifty (50) companies from both manufacturing and non-manufacturing sectors were used for the study. To emphatically ascertain the significant determinants of environmental disclosure, the model for this study was adapted from the works of Mejda and Hakim, (2013) which is stated below:

$SCORE = \alpha_0 + \alpha_1 BUS\text{-}CUL_i + \alpha_2 FAM\text{-}OWN_i + \alpha_3 GOVOWN_i + \alpha_4 INT\text{-}PEN_i + \alpha_5 SIZE_i + \alpha_6 LEV_i + \alpha_7 PROFi + e_i$. Where:

Variables	***Proxy***	***Operations***
environmental disclosure	SCORE	: the environmental disclosure rating of firm i
business culture	BUS-CUL	: is a dummy variable. It takes a value of one if the firm *i* is located in a country which has strong economic ties with United Kingdom or United States, zero if the firm *i* is located in a French business culture MENA country.
family ownership	FAM-OWN	family ownership of firm i, measured by the percentage of capital held by family.
government ownership	GOV-OWN	government ownership of firm i, measured by the percentage of capital held by the state
Internet Penetration	INT-PEN	Internet Penetration of firm i.
size of firm	SIZE	size of firm i, measured by the “log total assets”
Leverage	LEV	leverage of firm i, measured by “debt to assets ratio
`nmProfitability	PROF	profitability of firm i. we use the ROA as a measure of the profitability

For the purpose of this study, we modify the above model to reflect the environmental disclosure rating of firms which are regressed on the determinants of environmental disclosure. However, the model is expressed in functional and econometrical form as stated below.

The specification is:

$$ED = f(IND, LEV, FSIZE).$$

$$ED = x_0 + x_1\, Ind + x_2\, lev + x_3\, fsize + \mu$$

Where

ED = Environmental Disclosure, X_0 = Constant, X_1, x_2, and x_3 = Coefficients

IND = Industry type, LEV = Leverage, FSIZE = Firm size, Our appriori expectations are stated as; x_1, >0, x_2 >0, and x_3 <0

Data Presentation and Interpretation of Results

The outcome of the Binary Logic are presented and interpreted in order of descriptive statistics, correlation and estimation of coefficients as below.

Table 4.1 Descriptive statistics

Variable	Mean	Standard Deviation	Jarque-Bera	Pmj/' m/Prob
ED	0.5419	0.4990	55.6778 9	0.000/
IND	0.7814	0.4139	103.556	0.000
LEV	22.4539	16.6056	14.64441	0.000
FSIZE	7.2164	1.1160	20.0822	0.000

SOURCE: Researchers Survey, 2015

It is deduced that Environmental disclosure (ED) firms stood at mean value of 0.54196 (54%), and a Jarque-Bera value of 55.67789 which is significantly at 5%, indicating relatively high level of Environmental disclosure amongst the firm investigated. Similarly, industry type (IND) indicated mean value of 0.7814 meaning that over 75% of the sampled firms were in manufacturing sector. Meanwhile, leverage (LEV) stood at mean value of 22.4539. Finally, Firm Size (FSIZE) has a mean value of 7.216, with a Jarque-Bera value of 20.0822 which was significant at 5%, implying that the firms investigated worth billions of naira.

Table 4.2 Correlation of Variables

VARIABLES	*ED*	*IND*	*LEV*	*FSIZE*
ED	10000	0.0817	0.0423	0.1195
IND		1.0000	0.0496	-0.1978
LEV			1.000	-0.0208
FSIZE				1.000

SOURCE: Researcher's Survey. 2015

It indicates that when environmental disclosure (ED) stood at 1 unit, industry type (IND) stood at positive correlation value of 0.0817 (over 8%). Meanwhile, leverage (LEV) at correlation value of 0.0423 (over 4%). Finally (FSIZE) which is measured using natural logarithm of total Assets stood at correlation of 12%. The level of significance is 5% (1-tailed)

Table 4.3 Estimation of Binary Logic

Variables		**Coefficients**	**Z-statistics**	**Prob.**
Dependent	**Independent**			
ED	C	-2.332296	-2.725991	0.0064
	IND	0.745157	2.701077	0.1066
	LEV	0.000684	0.629310	0.5291
	FSIZE	0.32355	2.789305	0.0053

SOURCE: Researcher's Survey. 2015

McFadden R-squared (R^2) = 0.616720
S.E of regression = 0.496351
LR statistics = 17.721983 (0.002310)

The result of the Binary Logic, that is, Quadratic-hill climbing regression result. McFadden R-squared (R^2) which is the coefficient of determination stood at a value of 0.616762, indicating that about 62% of the systematic variations in the dependent variable (ED) were accounted for by the independent variables (IND, LEV and FSIZE), meaning that the remaining 38% were unexplained hence captured by the stochastic disturbances.

More so, LR which is the overall statistic stood at 17.7220 which is higher than the standard error of regression (S.E of regression) whose value is 0.4964. The higher than the value of LR statistic (goodness-of-fit) than the S.E of regression the better for prediction and judgment.

Discussion and Findings

Firstly, industry type (IND) revealed a positive coefficient value of 0.745 and Z- stat value of 2.701, which show that industry type has positive relationship with environmental disclosure. The finding is in line with Ho and Taylor (2007) who evidenced that industry type has positive and significant relationship with determination of environmental information in the financial statements of firms.

Secondly, leverage (LEV) stood at positive coefficient value of 0.000694 and Z- stat value of 0.6293, showing that firm financed with leverage has no significant effect on environmental disclosure. The finding supports the view of Mejda and Hakim (2013) who demonstrated that negative relationship exists between leverage firm and determinants of environmental disclosure.

Finally, firm size (FSIZE) has a positive coefficient value of 0.3235 and Z- stat value of 2.7893, indicating that the size of the firm has significant impact on environmental disclosure. The finding agreed with Stanny and Ely, (2008) view that size of the firm has association with environmental disclosure.

Conclusion/Recommendations

This study revealed the need for firms to take as a matter of necessity to include in their financial account environmental disclosure. Concern of environmental disclosure in the financial statements of firms is fundamental and imperative. It is indispensable that the activities of the firm in the environment in which they operate in terms of finance are well documented and accounted for the users of the report to evaluate. Following the conclusion reached in this study, it is recommended that:

1. It was recommended that firms in certain operations that can have effect on the environment should disclose their financial commitments in their annual reports.

2. It was recommended that Firms disclose in their annual reports the extent of pollution and other environmental hazard noticed in the cost of their operations.

3. Industry type has positive and significant relationship with determination of environmental Disclosure in the financial statements of firms.

4. Size of the firm has significant influence on environmental disclosure. Therefore, firm size is a strong determinant of environmental disclosure.

References

Abdul, R. (2010). Determinant of environmental disclosure practices of US Resources Company Hard Copy Versus Internet reporting.

Ahmad, 2 Hassan, S., & Mohammad, J. (2003). Determinant of environmental reporting in Malaysia. *International Journal of Business studies* 11(1) 69-90.

Ahmad, N. N. N., & Sulaiman, M. (2004). Environmental disclosure in Malaysian annual reports: *a legitimacy theory perspective.* IJCM, 14 (1) 44-58

Beefs, S. D., & Southier, C. (1999). Corporate environmental report: the need for standards and environmental Assurance services. *Accounting Horizons.* 13(2): 129-146.

Brammer, J.S., & Stephen, P. (2006). Corporate reputation and social performance: The importance of fit. *Journal of management studies* 43(3): 435-455.

Campbell, D. (2003). Intra-and International effect in environment disclosure: *evidence for legitimacy theory' Business strategy and the environment,* 12 (6): 357-371.

Choi, J. S. (1999).An investigation of the initial voluntary environmental disclosure made in Korean semi-annual financial reports. *Pacific Accounting Review* 11(1) 73-102.

Cooke, T. E. (1991). An assessment of voluntary disclosure in the annual report of Japanese Corporations. *The International of Accounting* 26(3):174-189.

Cooke, T. E. (1992). The impact of size, stock market listing and industry types on disclosure in the annual reports of Japanese listed companies. *Accounting and Business Research* 22(87): 229-237

Cormier, D., & Magnan, M. (1999). Corporate environmental disclosure benefits. *Journal of Accounting, Auditing and Finance* 14(3) 429-451

Cornier, D., & Magnam, M. (2003). "Does disclosure matter? Corporate environmental reporting is far from standard and it seems firms don't take advantage of it as a value creation tool" *Journal of Accounting and Public Policy* 21(4/5): 371-394.

Cornier, D., Magnam, M., & Van veithoven, B. (2005). Environmental disclosure Quality; Do firms respond to economic incentives, public pressures or Institutional Conditions? *European accounting review* 14(1): 1-3

Cornner, D., & Gordon, I. M. (2001). An examination of social and environmental reporting strategies. *Accounting Auditing & Accountability Journal*, 14(5): 587-616.

Cowen, S. S., Ferreri, L. B., & Porker, L. D. (1987). The impact of Corporate characteristics on social responsibility disclosure: *a typology and frequency- based analysis. Accounting organizations and society:* 12(2): 111-122.

Deegan, C. M., & Gordon, R. (1996). A study of the environmental disclosure practice of Australian Corporations. *Accounting and Business Research* 26 (3), 187- 199.

Deegan, C. (2001). *Financial Accounting Theory Roseville*, NSW: MCGraw-Hill Book Company Australia Ply Limited.

Deegan, C., Ramkin, & Voght, P. (2000). Firms disclosure reactions to major social incidents. *Australian evidence, Accounting forum* 24(1): 10-30.

Degan C. (2002). Introduction: the legiticacy effect of social and environmental disclosure-a theoretical foundation. *Accounting, auditing & Accountability Journal, 1*5(3): 282-311

Degan, C., & Rankin, M. (1996). Do Australian Companies report environmental news objectively? An analysis of environment protection Authority. *Accounting, Auditing and Accountability Journal Journal,* 9 (2): 52-69.

Henderson, S., & Pearson, G. (2004). *Issues in financial accounting Frenchs Forests*, NSW: Pearson Education Austriala.

Ho, L. J., & Taylor, M. E. (2007). An empirical analysis of triple bottom-line reporting and its determinants: evidence from the United states and Japan. *Journal of International financial management and Accounting* 18(2): 123-150.

Leuz, C., & Verrecchai, R. (2000). The economic consequence of increased Disclosure. *Journal of Accounting research* 38 (supplement 2000): 91-124. Hhtp//dx.doi.org/10.2307/2672910

Leuz, C. (2003). IAS versus USA GAAP: Information Asymmetry –Based Evidence from Germany's New Market. *Journal of Accounting Research* 41(3)445-472

Mejida, M. A., & Hakim, B. O. (2013). A study of the determinants of corporate environmental disclosure in MENA Emerging Markets, *Journal of Review on Global Economics* 2:48-59

Muttanachai, S., & Stanton, P. (2012). Determinants of environmental disclosure in Corporate Annual Reports. *International Journal of Accounting and financial Reporting* 2(1) 99-115

Newson, M, & Deegan, C. (2002). Global expectations and their association with corporate social disclosure practices in Australia, Singapore. And south Korea. *The international Journal of Accounting* 57: 183-213.

O'Donavan, G. (1999). Managing legitimacy through increased corporate reporting: *an exploratory study interdisciplinary environmental review* 1(1): 63-97.

O'Donovan, G. (2002). Environmental disclosures in the annual report: Extending the applicability and predictive power of legitimacy theory: *Accounting Auditing & Journal*, 15 (3), 344-372.

Patten, D. (1992). Intra-Industry environmental disclosure in response to the Alskoni oil spill: a note on legitimacy theory. *Accounting organizations and society,* 17 (5)4, 11-475.

Raar, J. (2002). Environmental initiatives towards triple –bottom line reporting corporate communications, 7 (3) 1`69-183.

Roberts, R. (1992). Determinants of corporate social responsibility disclosure: an appliance of stakeholders theory Accounting Organizations and Society 17 (6), 595-612.

Sahay, A. (2004). Environment reporting by Indian corporations. *Corporate social responsibility and environmental management* 11: 12-22

Stammy, E., & Ely (2008). Corporate environmental disclosure about the effects of climate change" *corporate social-responsibility and environment management, 15*(6): 338-352.

Wheeler, D, & Sillanpea, M. (1998). Including the stockholders the business case long range planning 31 (2):201