DETERMINANTS OF ENVIRONMENTAL DISCLOSURES OF LISTED MANUFACTURING FIRMS IN NIGERIA

1Atang, G. T. & 2Eyisi, S.A

Department of Accounting, College of Management sciences,
Michael Okpara University of Agriculture Umudike.Umuahia, Abia State.

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Abstract: Environmental disclosure by corporations has been increasing steadily in both size and complexity over the last two decades. Research attention over the years has attempted to understand and explain this area of corporate reporting which appears to lie outside the conventional domains of accounting disclosures since there are no accounting standards for environmental disclosures. This study aims to shed light on the determinants of environmental disclosures of listed manufacturing firms in Nigeria. The data for the study was gotten from a sample of 22 listed firms in the industrial sector. Ex post facto research design is adopted for the study and multiple regressions is used in analyzing the data gotten. Descriptive and inferential statistics were used to generalize the results and conclude the findings. The result showed a beta value 0.018 for cost of sales. This mean an increase in the profitability of manufacturing firms will lead to a 1.8% increase in the environmental disclosure of the company. The result also revealed that board composition influences about 13% of the variation in the environmental disclosure of manufacturing firms in Nigeria. While on the other hand auditor type contributes only 5.6% of the changes in the environmental disclosure of the manufacturing firms in Nigeria. It is therefore concluded that profitability, auditor type, board composition and firm size jointly influences the environmental disclosure of manufacturing firms in Nigeria. It is recommended that the regulatory bodies should initiate policies that will make the disclosure of environmental information compulsory in Nigeria. Also, the external auditors should also persuade their clients to disclose information relating to the environment as this has an impact on their reputation.

Keywords: Environmental disclosures, firm size, profitability, board composition and audit firm size.

INTRODUCTION

Societal consciousness and concerns for the environmental impact of companies have risen to an extend in about 4 decades ago. At this time, questions about issues affecting the natural environment have been raised. According to Galani, Gravas and Stavropoulos (2011), these problems include, in addition, movement of waste, emissions, safety of the ozone layer and climate change. Although the criticisms on the detrimental environmental impact of companies slightly diminished in the 1980s, the Nineteen Nineties signify a new center of attention of interest for this topic (Bassey, Effiok, &amp; Eton, 2013). This renewed interest for the natural environment has not been isolated in a precise area or culture; however it has drawn world attention (Galani et al, 2011).

Environmental disclosure with the aid of companies has been increasing regularly in both size and complexity over the last two decades (Srinivasa, 2014). Research interest over the years has tried to apprehend and provide an explanation for this area of corporate reporting which seems to lie outside the traditional domains of accounting disclosures. The evolving task in contemporary business activities is the need to reconfigure their overall performance indices to include societal and environmental issues as part of the standard objective of doing business.

Examining environmental overall performance determinants has been a famous area of environmental research (susi, 2009). Studies like Singh and Joshi (2009); Osemene and Olaoye (2009); Makori and Jagongo (2013); Nireshi and Velnapmy (2014) have examined the impact of numerous variables like: company size, profitability, industry, country of firm ownership, area of reporting, leverage, capital intensity, and firm age, the existence of a corporate social responsibility (CSR) committee, stakeholder power and governmental influences on environmental disclosures. Three regularly studied determinants are firm size, industry and firm profitability. There exist few empirical understanding about the impact of these variables on environmental disclosure in Nigeria. Therefore,
this study seeks to take a look at the relationship between these determinants (Firm size, Profitability, Board composition & Audit firm size) and environmental disclosure of listed manufacturing companies in Nigeria.

**REVIEW OF RELATED LITERATURE**

**The Concept of Environmental Disclosure**

For better appreciation of environmental disclosure there is a necessity to furnish definitions of environmental accounting from distinctive points of view. A number of scholars have described environmental accounting from specific perspectives. James and Gbalam (2013), highlighted some of the principles of environmental accounting following on from prior researchers and studies. One of these definitions is that environmental accounting is used to categorise a group of activities. An example of these activities, as James and Gbalam (2013) mentioned, is an income statement. Environmental accounting in accordance to this thought means accounting for the value of natural resources gained or lost relative to firms’ economic activities (Hossain, Islam & Andrew, 2006). Uwalomwa (2011), detailed that environmental accounting is an inclusive area of accounting. It gives reports for both internal use, generating environmental cost information to help make management decisions on pricing, controlling overhead and capital budgeting and external use, disclosing environmental information of interest to the public and to the financial community.

Dibia and Onwuchekwa (2015) mentioned that environmental accounting is the identification, allocation and evaluation of material streams and their associated cash flows via the use of environmental accounting structures to provide insight in environmental impacts and associated financial effects. More generally, De Villiers (1999), noted that environmental accounting idea emphasizes on the proposition that company has obligations to society which is beyond making profit. This idea outline the responsibility of the firm’s decision makers to make choices and act in approaches that recognize the relationship between the firm and the society, consequently it is vital for firms to continue its commitment to behave ethically and make contributions to environmental sustainability whilst making its profit.

Environmental information disclosures can be describes as the procedure of communicating externally the environmental consequences of organization’s economic actions through the firm’s annual report or via a separate stand-alone published accessible environmental report (Belal, 1999). It embody reporting concerning to environmental policies, impacts, process and audits, environmental issues associated expenditures, the environment advantages of products, and important points concerning the firm’s activities which leads to profit (Ajibolade & Uwalomwa, 2013). Ajibolade and Uwalomwa (2013), went further to mention that environmental information disclosures renders firm’s environmental information obvious to both the public and the government. These disclosures plays an essential role to the society by means of leading organizations to put effort in ensuring that sustainable development is given to the environment and this result in giving the organization a fantastic picture in the eyes of the stakeholders.

Hossain, Islam and Andrew (2006) noted that, to enhance the environmental compliance, firms are also required to reveal information publishing their activities on the environment and how they tackle these impacts and what is the outcomes of their effort. James and Gbalam (2013) additionally said that in a ideal world all firms are required to have a high first-rate of environmental disclosures, on the other hand not all firms wishes to spend efforts on reporting, training and the cost of reporting. Khelif, Guidara and Soussi (2015), established that firms environmental disclosures are both a communication tool and a management tool. It can provide company’s exterior and interior attitude towards of environmental activities to the society who is in need of such information. Dibia and Onwuchekwa (2015), noted that environmental information normally refers to records held by public authorities that is generated by means of environmental regulation and measures at all stages of government. An instance is data on the state natural sites, and data on activities that are probable to affect these resources adversely or on measures designed to protect theory such as administrative measures and environmental management program.
Theoretical Review

Freeman and Reed (1983) have recognized stakeholders as the groups who have an interest in the actions of the corporation. In a follow up study, Freeman (1984) revisited stakeholder theory and redefined stakeholders as any person or group who has an interest in the company due to the fact he (or she) can affect or is affected by the firms activities. Mpofu and Karedza (2013), has described stakeholders as any person or group who can have an effect on or is affected by means of the actions, decisions, policies, practices, or goal of the organization. Kassinis and Vafeas (2006), argued that stakeholders can be recognized through the legitimacy of their claims which is substantiated with the aid of a relationship of alternate between themselves and the organization. These stakeholders encompass stockholders, creditors, managers, employees, customers, suppliers, local communities and the conventional public. According to Freeman and Reed (1983), the stakeholders’ theory offers prosperous insights into the elements that inspire managerial behavior in relation to the social and environmental disclosure practices of companies as the activity of the companies affect the a number of stakeholders of the firm vis a vis environmental impacts and cost disclosures of the firm. Previous social and environmental accounting research like Fokeye, Odianonsen and Aanu (2015); Ebiringa (2013) which utilized these theories indicate that companies respond to the expectations of stakeholders groups particularly and generally to these of the broader community in which they operate, through the provision of social and environmental information inside the annual reports. Firms legitimize their activities and the number of stakeholders also legitimize their demands on the a number environmental issues and disclosures vis a vis their interest and demands. The legitimacy theory, according to Dowling and Pfeiffer (1975), is typically described as the congruence between an organization’s value system and that of the large social system, of which the company is a part. They similarly stated that companies are seeking to establish congruence between the social values associated with or implied by means of their activities and the norms of suitable conduct in the larger social system of which they are part of. Hence, companies voluntarily disclose environmental information to show that they are conforming to the expectations and values of the society within which they operate.

Dowling and Pfeiffer (1975) counseled that legitimacy theory is beneficial in examining corporate behavior. This is due to the fact legitimacy is essential to organizations, constraints imposed through social norms and values and reactions to such constraints provide a focus for analyzing organizational behaviors taken with respect to the environment. Uwalomwa (2011) made claims that the legitimacy theory is applicable due to the fact it emphasizes that through definition, firm environmental disclosure should conform to at least one of the techniques as the implementation of any legitimization approach have to contain both communication (disclosure) through the organization, as well as addressing norms, values or beliefs of relevant publis.

Empirical Review

Khlif, Guidaraand Souissi (2015) carried out a study on corporate social and environmental disclosure and corporate performance: evidence from South Africa and Morocco. The purpose of the study was to inspect the relationship between corporate overall performance and social and environmental disclosure for two African leading countries namely, South Africa (common law country) and Morocco (civil regulation country). The sample consisted of 168 annual reports spanning from 2004 to 2009. A content evaluation of companies’ annual reports was used to measure the extent of voluntary social and environmental disclosure. Results showed that social and environmental disclosure has a huge tremendous impact on corporate performance only in the South African setting. The findings emphasized the need to explicitly reflect on consideration on the legal and institutional setting prevailing in each context.

Dibia and Onwuchekwa (2015) carried out a research on the Determinants of Environmental Disclosures in Nigeria: A Case of Oil and Gas Companies, they made use of the cross-sectional research design. A sample of 15 companies drawn from the oil and gas sectors of the Nigerian Stock Exchange for 2008-2013 financial years was used for the study. Secondary data was sourced from the annual reports of the sampled companies whilst the binary regression approach was used for data analyses. The findings of the study were that there is a significant relationship between firm size and corporate environmental disclosures; there is no significant relationship between profit and corporate environmental disclosures; there is no significant relationship between leverage and corporate environmental disclosures and there is no significant relationship between audit firm type and corporate environmental disclosures.
As Ebiringa, et al (2013) observed, there is considerable consensus in the literature with regards to the effect of company size on corporate environmental disclosure practices. The effect has been identified as positive as a firm size is expected to increase its information reporting level. There are at least three reasons for this link. First of all, large firms are more willing to disclose information to reduce their political costs, since their higher visibility can easily lead to more litigation and governmental intervention. Secondly, owing to more developed internal reporting system, the costs associated with a higher disclosure level are lower for large firms. Thirdly, smaller firms are more likely to hide crucial information because of their competitive disadvantage within their industry. The authors further posited that corporate size would be related to social responsibility activities because larger companies are more likely to be scrutinized by both general public and socially sensitive special interest groups.

Galani et al (2011) conducted a study on the Relationship between Firm Size and Environmental Disclosures. The study investigated the level of environmental reporting in corporate annual reports. Specifically, it investigated the extent to which Greek companies have implemented a set of environmental accounting practices and analyzed the relationship between various firm characteristics and environmental disclosures. The results obtained showed that the degree of development of environmental accounting practices is low and there is a positive relationship between corporate size and the disclosure of environmental information in annual reports. However, neither profitability nor listing status seemed to explain differences in environmental disclosure practices between Greek companies.

METHODOLOGY

This study adopted ex-post facto research design. The design for the study is appropriate because it assists in determining the determinants of environmental disclosure of manufacturing firms in Nigeria. The population of this study covers selected manufacturing companies (consumer and industrial goods producers) that are quoted on the Nigeria Stock Exchange (NSE) as at 2016. Numerically they are forty three (43). The sample size for this study will be determined through the application of judgmental sampling technique. The companies will be randomly selected based on the availability of annual reports for the period 2011 to 2016. The companies used for the analysis were only 18 namely. Cadbury Nigeria Plc, Champion Breweries Plc, Dangote flourmills,Flour mills Nigeria Plc,Guinness Nigeria Plc, Honeywell Plc, International Breweries Plc, NasconPlc,Nestle Plc,Nigeria Breweries Plc, PZ Cussons Plc,Unilever, Cap Plc, Berger paint, Lafarge Plc, Austin Laz, Beta Glass,Union Dicon Salt.

Model specification

The models that will be used to test the entire hypothesis are:

\[ ED = \beta_0 + \beta_1 FS_{it} + \beta_2 PR_{it} + \beta_3 BC_{it} + \beta_4 AT_{it} + \epsilon \]  

Where;

- \( ED \) = Environmental Disclosure (1= for disclosure of an environmental information on the checklist.0 = Non-Disclosure)
- \( \beta_0 \) = the intercept/constant;
- \( \beta_1, \beta_2, \beta_3, \beta_4 \) = are the parameters;
- \( FS \) = Firm Size (Natural log of total assets)
- \( PR \) = Profitability( Net income divide by total assets)
- \( BC \) = Board Composition (Total Number of board members)
- \( \epsilon \) = the residual/error term (1 – Big four Audit firms 0 – Non-big four Audit firms)
- \( it \) = The different independent variables of firm i at time t.

Environmental Disclosure Checklist

The following information are the minimum required environmental information:

<table>
<thead>
<tr>
<th>S/N</th>
<th>ELEMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Actual statement of policy</td>
</tr>
<tr>
<td>2</td>
<td>Establishment of environmental management systems</td>
</tr>
</tbody>
</table>
Waste(s) management
Research on new methods of production to reduce environmental pollution
Pollution-prevention technologies

**C. Environmental Energy:**
Energy saving and conservation
Use/development/exploration of new sources, efficiency, insulation etc.
Utilization of waste materials for energy conservation

**D. Environmental audit:**
Reference to environmental review, scoping, audit, assessment, including independent attestation
Obtaining certification for Environmental Management Systems/ISO 14001
Execution of environmental policies

**E. Environmental financial:**
Reference to financial/economic impact
Past and current expenditure for pollution control
A record of the allocation of specific fund

**RESULTS AND DISCUSSION**

Analysis of Manufacturing Firms Performance

Data Analysis

Model Summary Table

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.551a</td>
<td>.304</td>
<td>.275</td>
<td>1.591</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), FIRM SIZE, PROFITABILITY, AUDITOR TYPE, BOARD COMPOSITION

**Source: Researchers Computation with SPSS 20.**

The Table 4.3 gives the model summary. R value of 0.551 shows the relationship between the dependent and independent variables (all the determinants combined). Adjusted R-Square is the proportion of variance in the dependent variable (environmental disclosure) which can be explained by the independent variables (determinant). The Adjusted R-Square of 0.275 means that 27.5% of the environmental disclosure of manufacturing firms in Nigeria is influenced by profitability, board composition, auditor type and profitability.

ANOVA Table

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>109.253</td>
<td>4</td>
<td>27.313</td>
<td>10.787</td>
<td>.000b</td>
</tr>
<tr>
<td>Residual</td>
<td>250.661</td>
<td>99</td>
<td>2.532</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>359.913</td>
<td>103</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: ENVIRONMENTAL DISCLOSURE
b. Predictors: (Constant), FIRM SIZE, PROFITABILITY, AUDITOR TYPE, BOARD COMPOSITION

**Source: Researchers Computation with SPSS 20.**

Result in Table 4.4 reveals that the F calculated value of 10.87 is greater than its corresponding critical F of 2.463 at 0.05 level of significance and p-value of 0.000 which is also less than 0.05 (p<0.05). Hence, there is a significant influence of the determinants on environmental disclosure of manufacturing firms in Nigeria.
Estimates of the parameters of the regression model

### Coefficients Table

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.474</td>
<td>1.455</td>
<td>.013</td>
<td>.313</td>
</tr>
<tr>
<td>PROFITABILITY</td>
<td>.002</td>
<td>.010</td>
<td>.018</td>
<td>.202</td>
</tr>
<tr>
<td>BOARD COMPOSITION</td>
<td>.108</td>
<td>.086</td>
<td>.130</td>
<td>1.257</td>
</tr>
<tr>
<td>AUDITOR TYPE</td>
<td>.230</td>
<td>.364</td>
<td>.056</td>
<td>.632</td>
</tr>
<tr>
<td>FIRM SIZE</td>
<td>.996</td>
<td>.232</td>
<td>.453</td>
<td>4.293</td>
</tr>
</tbody>
</table>

a. Dependent Variable: ENVIRONMENTAL DISCLOSURE

Source: Researchers Computation with SPSS 20.

Result in Table 4.5 shows that only firm size (Beta = -0.959, p=0.000, p<0.05) has significant influence on the environmental disclosure of Manufacturing firms. Thus hypothesis one is rejected, meaning that firm size significantly influences environmental disclosure of manufacturing firms.

The influence of other determinant were found to be statistically insignificant (p>0.05). This indicates that hypothesis two to four is accepted.

### Discussion of the Findings

Based on the main objectives of the study which was to assess the determinants of environmental disclosures in the manufacturing firms in Nigeria. It was discovered that the determinants have significant joint influence on the environmental disclosure of manufacturing firms in Nigeria. Thus, the main objective of the study was achieved. The result showed a beta value 0.018 for cost of sales. This mean an increase in the profitability of manufacturing firms will lead to a 1.8% increase in the environmental disclosure of the company. The result also revealed that board composition influences about 13% of the variation in the environmental disclosure of manufacturing firms in Nigeria. While on the other hand auditor type contributes only 5.6% of the changes in the environmental disclosure of the manufacturing firms in Nigeria. The significant impact of firm size on the environmental disclosure of manufacturing firms in Nigeria means that the larger the firm the more it discloses its environmental information.

### CONCLUSION

It is therefore concluded that profitability, auditor type, board composition and firm size jointly influences the environmental disclosure of manufacturing firms in Nigeria. This predicated on the findings of the study and it is shown that firm size exerts the most significant impact on the environmental disclosure of manufacturing firms in Nigeria.

### RECOMMENDATION

The following recommendations were made:

The regulatory bodies should initiate policies that will make the disclosure of environmental information compulsory in Nigeria and the board of directors should step up their oversight functions to include environmental disclosures by setting up an environmental monitoring and disclosure committee. Also, the companies should invest their resources into developing and protecting the environment as this has a positive impact on their profitability. The external auditors should also persuade their clients to disclose information relating to the environment as this has an impact on their reputation. Finally, the small manufacturing firms
should take steps to improve on their disclosure of environmental information in Nigeria.

REFERENCES


