Effect of Firm Characteristics on Environmental Reporting Practices of Listed Manufacturing Firms In Nigeria

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Abstract

This study examines the effect of firm characteristics on environmental reporting practices of listed manufacturing firms in Nigeria. The population of the study comprises of sixty-one (61) manufacturing firms with a sample size of 29 firms drawn using judgmental sampling technique. Data were gathered using annual reports and accounts of the sampled firms through content analysis and analysed using multiple regression technique. The study found that the firm characteristics of firm size, leverage, return on assets and firm age have significant and positive effect on environmental reporting practices of listed manufacturing firms in Nigeria. Based on the findings, the study recommends that listed manufacturing firms should be raising fresh funds by retaining a good portion of their profits for the acquisition of assets to enhance environmental reporting practices in Nigerian listed manufacturing firms.

Keywords: firm characteristics, environmental reporting, listed manufacturing firms

1 Introduction

Economic development efforts have resulted into environmental activities such as growing pollution, global warming, deforestation and desertification. There is also a growing social awareness that increases the pressure on firms regarding their responsibility to the environments in the conduct of businesses. Consequently, many firms take as much responsibility for environmental protection as they do for economic issues and a major reason for this is that firms are reflecting growing environmental protection expectations from various stakeholders. Responsibility is reflected in reports made by these firms through their annual reports on a regular basis concerning environmental issues. Gray (2005) opines that environmental accounting has become necessary, because the traditional accounting system which handles most environmental costs as overhead costs, is insufficient in providing managers with proper information for strategic decision making. This is because under the traditional accounting approach, a business success is judged by the volume of profit it makes and the market value of its shares while significant environmental issues are neglected.

Despite the clear benefits of environmental accounting, the decision whether a firm engages in environmental reporting or not can be influenced by a lot of factors as documented in the literature. Firm characteristics such as firm size, leverage, profitability of the firm, age of firm amongst others influence firms' environmental reporting practices. It is also widely believed that firm characteristics influence the quality and quantity of environmental information reported by firms (Gray, 1995; Hackstone& Milne 1996 and Patten 2005). Presently in Nigeria there is no reporting standard regulating environmental information to be reported in annual reports in line with global best practices which encourages voluntary reporting. The analysis of International Accounting Standard (IAS) and international financial reporting standard (IFRS) shows that no international standard is exclusively dedicated to the provisions of such information but there are numerous direct and indirect remarks on the topic of environmental accounting in the different accounting standards (Goyal, 2013).However, the application of environmental reporting based on standard disclosures is expected to improve corporate environmental performance and also enhance the image of the firms as having good corporate governance practices of moral obligation to render environmental information to its numerous stakeholders (Alena, 2011). Uwigbe (2011) opines that one of the most widely known international standards for assessing environmental activity of firms is the International Organization for Standardization (ISO 14031) disclosure requirements which provides voluntary standards of reporting. This is because, it provides sustainability standards capable of monitoring environmental issues in relation to long-term corporate growth, efficiency, performance, competiveness by incorporating economic and environmental issues into corporate management. Therefore, environmental activities of firms are translated into useful and robust reports to various stakeholders through the use of environmental reporting by applying ISO 14031 checklists as a standard benchmark.

Studies on the effect of firm characteristics and environmental reporting practices have been conducted by many researchers but very limited in the context of Nigeria. In Nigeria, the study conducted by Bassey, Effiok and Etom (2013) examine the relationship between firm characteristics and environmental reporting practices using only profit as a firm characteristic in relation to the level of corporate environmental reporting practices in the petroleum industry. This was a limitation on the findings and it is one of the gaps the study intends to fill. Similarly, Uwigbe (2011) uses profit, financial leverage and firm size as firm characteristics in relation to the level of environmental reporting practices using data covering the period of 5 years (2005-2009). There is a limitation in scope of the study and this presents a gap in period that this study also intends to fill. The main objective of this study therefore is to examine the effect of firm characteristics and environmental reporting practices of listed manufacturing firms in Nigeria using data covering the period 2000-2015.

In order to achieve the objective of the study the hypotheses below are formulated in null forms

Ho_1: There is no significant effect of firm size on environmental reporting practices of listed manufacturing firms in Nigeria.

Ho_2: There is no significant effect of leverage on environmental reporting practices of listed manufacturing firms in Nigeria.

Ho_3: There is no significant effect of return on assets on environmental reporting practices of listed manufacturing firms in Nigeria.

Ho_4: There is no significant effect of firm age on environmental reporting practices of listed manufacturing firms in Nigeria.

The scope of the study covers the period 2000-2015and the period was chosen because it saw the increasing awareness on issues of sustainability requiring firms to engage in environmental reporting even though on a voluntary basis. The choice of manufacturing firms is that by their mode of operation they are more prone to environmental pollution.

2.0 Literature Review

Hibbitt, (2003) notes that firm characteristics in the context of corporate environmental reporting refer to aspects of an organization which identifies measures and relates to that organization. There is evidence that firm characteristics influence the firm's choice of internal governance mechanism especially with respect to performance measures including environmental reporting (Engel, Gordon & Hayes, 2002). Karuna(2009) in examining company attributes, divides them into three categories: uncontrollable, partially controllable and controllable. Uncontrollable attributes are those which fall outside the direct control of the firms and include organizational size and structure. Partially controllable attributes are those that cannot be changed at will by the firm but susceptible to change in the long run and include organizational resources and organizational maturity while the controllable attributes are those under the control of the firm such as leverage.

Henderson and Peirson (2004) suggest that environmental reports by firms cover sustainability efforts made by firms in a manner that reflect concerns about environmental protection, intergenerational equality, the protection of the earth and its resources. Furthermore, Gray, Kouhy and Lavers (1995) define corporate environmental reporting as the process of communicating the environmental effects of organizations' economic action to particular interest groups within society and to society at large, thereby influencing the public's perception towards their operations. Similarly, Gray *et al*. (1995) opine that companies use their environmental reports to construct themselves and their relationships with others as they strive to create and maintain the conditions for their continued profitability and growth. Environmental report helps them to rationalize and justify the corporate entity not merely describing effective management, but legitimizing corporate power and maintaining confidence of the public. Based on these concepts of environmental reporting, it is clear that the advocates of environmental reporting are convinced that reporting is a crucial lever for change in the direction of improved environmental performance and in the longer term bring about eco-efficiency and sustainability.

There are firm characteristics which usually influence firms to respond to environmental sustainability concern (Karuna, 2009). For example, previous studies document evidence that firm size influences the reporting of environmental information (Gray 1995, Hackstone& Milne, 1996 and Patten, 2005). Furthermore, studies have been conducted relating environmental reporting to profitability and leverage (Patten, 2005).

Under legitimacy theory, firms' continued existence depends on the acceptance of the society where they operate. Since the firms can be influenced by the society, legitimacy is assumed to be an important resource determining their survival (Deegan, 2002). The theory suggests that larger firms are more likely to come under public scrutiny and are expected to have more influence on general business environment. A number of studies over the past decades have tested the influence of firm size on the level of environmental disclosure. Most studies report a positive relationship between company size and the extent of environmental disclosure in both developing and developed countries (Ahmed & Nicholls 1994 and Hossain, Islan& Andrew, 2006).**For example,** Spicer (1978) surveys 125 listed manufacturing firms and analyzed the annual reports of these companies for the period. Findings from the study show that firms' size as a factor influencing pollution control had a better record in environmental disclosure than smaller firms. In line with this result, Ferreri and Parker (1987) find that larger firms tend to report more environmental information because larger firms are highly visible, make greater impact on the society, and have more shareholders who might be concerned about environmental activities undertaken by firms. In addition, findings by Mohammed and Tamoi (2006) show that company's size as measured by log of total assets provides an explanation on the variability of environmental report among Malaysian companies.

In Greece, Galvani, Graves and Stavropoulos (2011)

examine the extent to which Greek companies implement a set of environmental accounting practices and the data is analysed using estimated multiple linear regression model, the relationship between various firm characteristics and environmental disclosures are examined. 100 listed firms are selected for the study and a disclosure index is constructed which consists of 15 items of information in order to identify the factors that may have a significant influence on the disclosure level of environmental information by the firms. The results of the study show that there is a positive relationship between corporate size and the disclosure of environmental information in annual reports of 2009. Thus, from the foregoing literature reviews, firm size has a great impact on environmental reporting practices because the larger the firm the more the tendency it impacts on the environment in the pursuit of economic activities. Also, based on the legitimacy theory, it's expected that large firms will disclose more social and environmental information than smaller firms because the society expects more environmental concern from them.

Legitimacy theory proposes a relationship between corporate environmental disclosure and community concerns, so that management must react to community expectations and changes. Roberts (1992) in Omar (2014) observes that a high degree of dependence on debt would encourage a company to increase social activities and disclose more environmental information in order to meet its creditors' expectations on environmental issues.

In Malaysia, Trotman and Bradley (1981) using the content analysis technique examine the association between environmental sustainability reporting and firm characteristics. Data are collected from a sample of 120 manufacturing firms covering 5 years (1976-1980) and is analysed using regression technique. It finds that a positive relationship exists between firms' financial leverage and the extent of voluntary environmental disclosure. However, Chow and Wong-Boren (1987) also evaluate environmental disclosure by Mexican listed firms with leverage as the independent variable while environmental disclosure is the dependent variable. A sample of 52 manufacturing firms is drawn for the year and analysed using ordinary least square regression model. The study finds no statistical relationship between leverage and environmental disclosure.

Also, Uwigbe (2011) examines corporate environmental reporting practices by a comparative study of Nigeria and South Africa. A total of 900 copies of questionnaire were distributed among members of the selected states/provinces using Yamane (1967) sample selection formula in determining the sample size of the study. In addition, content analysis technique is used to elicit data relating to corporate attributes from the annual reports and corporate websites of selected 60 listed companies over the period 2005-2009. Multiple regression analysis is used to investigate the effect of leverage on the level of corporate environmental disclosure among the sampled listed firms in Nigeria and South Africa. It finds a significant negative effect of financial leverage on the extent of corporate environmental disclosure in the two countries.

Similarly, in Bangladesh, Hossain, Islam and Andrew (2006) evaluate corporate social and environmental information from annual reports and accounts of 107 sampled companies listed on the Dhaka Stock Exchange over the period 2002-2003 using multiple linear regression technique. The results show that corporate environmental disclosure levels are associated with some company attributes in Bangladesh, among which are the nature of the industry and leverage which are found to be positively significant in determining disclosure levels. Thus, from the foregoing, the influence of leverage on environmental reporting practices is mixed and this may be as a result of differences in sample sizes, countries of operation, period of study and the number of environmental disclosure index used.

Deegan, (2002) stated that, legitimacy theory hypothesize that companies are bound to an unwritten social contract within the society where they operate. Failure to comply with their legitimacy will threaten the companies' performances and survival. Therefore, more profitable companies can be expected to disclose more voluntary social and environmental information than non-profitable companies. Profitability as well as corporate financial performance are used by a number of studies as an explanatory variable for differences in environmental disclosure level. However, the relationship between corporate financial performance and corporate environmental disclosure is arguably one of the most controversial issues yet to be resolved because of mixed results that have been found (Choi, 1998).

Freedman and Jaggi (1988) investigate the association between environmental disclosures and the financial performance of firms in four highly polluting industries. The results indicate that there is

no association between environmental disclosures and financial performance. Wiseman (1982) examines the relationship between the annual reports of 26 firms covering the period 1980-1981 in three industries with their financial and environmental performances using the ISO 14031 environmental reporting guideline. Content analysis was used to measure the extent of disclosures using 60 disclosure items to evaluate the quality and accuracy of environmental disclosures. The performance indicators it uses in the analysis of the level of financial performance of the selected firms included; earnings per share, price-earnings ratio and dividend yield. Regression analysis is used to estimate the model and the findings indicate that the voluntary environmental reports are incomplete, providing inadequate disclosure for most of the environmental performance items included in the disclosure items. The findings also disclose that no relationship exists between the contents of the firms' environmental disclosures and the firms' financial performance.

Furthermore, the impact of environmental accounting and reporting on organization performance of selected oil and gas companies in Niger-Delta region of Nigeria is examined by Bassey, Effiok and Eton (2013). Data is analysed using Pearson's Product Moment Correlation Coefficient after a sample of 30 non-listed firms is arrived at using random and stratified sampling techniques. Data are gathered from primary and secondary sources covering the period 2008-2010. It finds that the level of environmental disclosure had positive association with firm's profitability.

In addition, Hannifa and Cooke (2002) investigate the impact of profit and corporate governance on environmental disclosure in listed Malaysian firms. Using a sample of 226 listed firms over the period 1999-2000, the data is analysed using ordinary least square regression and It finds that there is a significant positive association between the level of environmental disclosure and profitability of the firm. They observe that the economic performance of a firm is considered as an important factor in determining whether environmental issues will be a priority or not. This is because in periods of low economic performance, the firm's economic objectives may be given more attention than environmental concerns.

In China, Fan (2006) examines the determinants of environmental disclosure among Chinese firms, over the period 2000-2004. Data is obtained from a sample of 226 firms listed in Malaysia and analysed using multiple linear regression. It reports that profitability has a significant impact on voluntary environmental disclosure. On the contrary in a study of accounting guidelines for environmental issues by Smith (2007), the study applies data of 6 years (2001-2005) using a sample of 148 firms. The data is analysed using ordinary least square regression analysis and finds a significant inverse relationship between environmental disclosure and the return on assets of firms in the Malaysian context. Thus, from the literatures reviewed on various scholars in different countries, it is clear that more profitable firms are likely to disclose more environmental information while less profitable firms tend to be more secretive and conservative in terms of environmental disclosure.

Firm age under the legitimacy theory posits that companies' societal existence depends on the acceptance of the society where they operate. Since the companies can be influenced by the society, legitimacy is assumed an important resource determining their survival (Deegan, 2002). Therefore, older companies with longer societal existence may have taken relatively more legitimacy and may have a higher reputation and involvement of social responsibility than younger companies. As a company operates longer in terms of age, there will be more communication needed with the outside community. This provides companies with wide social networks, affecting their public images (Yang, 2009). Previous studies support the positive and significant association between age of firm and environmental information disclosure (Yang, 2009). Omar (2014) examines the determinants of corporate social and environmental disclosure in Bahrain using data of 2012 which is obtained from a sample of 33 listed firms and is analysed using multiple linear regression. It reports that age had no significant impact on voluntary environmental disclosure. Based on the above discussion, it might be expected that the longer a company has been listed on the Stock Exchange, the more likely the company would disclose social and environmental information

A number of different theories have been used to explain why corporations might voluntarily disclose social and environmental information to outside parties. According to Gray et al. (1995) the theories that seem to have been most successful in explaining the content and the level of social and environmental information disclosures are the legitimacy theory and the stakeholder theory. Hooghiemstra (2000) states

that, according to legitimacy and stakeholder theories, social and environmental disclosure is used in order to guard corporations' reputation and identity. However, Guthrie and Parker (1990) states that, legitimacy theory is one of the most adopted theories for explaining corporate social and environmental disclosures. Perrow (1970) in Omar (2012) defines legitimacy as a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, value, beliefs, and definitions. In contrast to agency theory, the legitimacy theory provides a more comprehensive viewpoint on corporate social disclosure as it clearly recognizes that organizations are bound by the social contract in which they agree to perform various socially desired actions in return for approval of their objectives, which guarantees their continued existence and their successful operations (Guthrie & Parker, 1989; Brown and Deegan, 1998; Deegan, 2002;). From the foregoing theoretical review, Legitimacy theory suggests a relationship between corporate environmental disclosure and community concerns so that management must react to community expectations and changes. Therefore, this study is anchored on the legitimacy theory because management must react to environmental issues concerning the environment they operate to gain acceptance of the society and survival of their firm.

3.0 Methodology

This is a longitudinal panel data study and the target population is all the sixty-one (61) listed manufacturing firms operating in Nigeria as at 31st December 2015 from which a sample of 29 firms is drawn from the Nigerian Stock Exchange using purposive/judgmental sampling method after applying a criterion where all the manufacturing firms that met it had a chance of being selected. The criterion is that the listed manufacturing firm must not have made a loss more than five times over the period of the study (2000-2015) because, profit making firms are likely to make more environmental reports (Hannifa & Cooke, (2002), Bassey, Effiok & Eton, 2013).

A dichotomous procedure of content analysis technique of gathering data is used in codifying qualitative information into categories in order to derive quantitative values. Any of the sampled firm selected could score a maximum of sixty (60) points and a minimum of 0. The formula for calculating the reporting score using the sixty (60) disclosure index items in ISO 14031benchmark as adopted from previous studies by (Wiseman 1982 and Uwigbe 2011) is shown below.

$$RS = \sum_{1=1}^{60} ri$$

Where:

RS = Reporting score ri = a score of (1) if the item is reported and (0) if not reported.

i = 1, 2, 3, ….60. All the reported items are then summed up and divided by 60 to arrive at a value for the dependent variable.

For the purpose of finding the strength of the effect of corporate environmental disclosure as the dependent variable on firm characteristics of firm size, leverage and profitability as independent variables, multiple regression analysis is adopted. The functional relationship is given as follows.

Evd = f (Fsz, Lev, Roa)……...(1)

With the aid of this equation the study arrived at a model which is presented as follows

$Evdi_t = \beta 0 + \beta 1fszi_t + \beta 2levi_t + \beta 3roai_t + \beta 4agei_t + Ui_t$,.....(2)

Where, Evd=Environmental Reporting measured by unweighted disclosure approach and a firm is scored "1" for an item reported in the annual report and "0" if it is not reported. Fsz=firm size and is measured by Log of Total Assets of the firm at the date of statement of financial position for each year (as measured by Mohammed &Tamoi, 2006). Lev=leverage is measured by the ratio of total debts to total equity of the firm at the end of each year (as used by Uwigbe, 2011). ROA= Return on assets is measured by ratio of Net profit divided by total assets of the firm for each year (as measured by Hannifa & Cook, 2002). Age is measured as the number of years after the firm was listed on the Nigerian Stock Exchange (as used by Omar, 2014). βo is the intercept. β 1-4 are the coefficients of the independent variables.

The following robustness tests are conducted to enrich the analysis of data

i. Multicolinearity test, Variance Inflation Factor (VIF) and Tolerance values are conducted to ensure that some or all of the explanatory variables in a multiple regression analysis are not highly inter-correlated to cause multicolinearity problems in the data
ii. Heteroscedasticity test is conducted to check whether the variability of error terms is constant or not.
iii. Hausman specification test is conducted to

enable the study choose between fixed and random effects

4.0: Results and Discussion

Table 1 shows the summary statistics of the dependent and independent variables in terms of the mean, standard deviation, minimum and maximum values. Evd, has a mean of 13.09 with a standard deviation of 6.53, a minimum of 0 and a maximum of 36 suggesting that there is no wide dispersion in environmental disclosure of listed manufacturing firms in Nigeria.

Table 1 Descriptive statistics

Variables	Obs	Mean	Std Deviation	Minimum	Maximum
Evd	464	13.09	6.53	0	36
Fsz	464	9.36	2.32	0	13.92
Lev	464	0.57	0.93	0	9.45
Roa	464	0.11	0.26	-0.59	4.27
Age	464	24.20	10.68	0	50

Source STATA 14 Output 2016

Firm size (Fsz) has a mean of 9.36 with a standard deviation of 2.32, minimum and maximum values of 0 and 13.95 respectively. This suggests a wide dispersion in firm sizes of manufacturing firm because some of the firms are small compared to others. Leverage had a mean and standard deviation values of 0.57 and 0.93 respectively, implying that on the average the firm capital structure had 57% debt financing. The return on assets on the average is 11%, oscillating between a loss of 59% and return on assets of 427%. The average age of the manufacturing firms is 24 years the youngest is 0 because some firms had no data as a result of the panel nature of the study while the oldest is 50 years. The standard deviation of the firm ages is 10.68 suggesting a wide dispersion of the firm age of manufacturing firms in Nigeria because some are very young relative to others that are much older.

The correlation between the dependent and independent variables are presented in table 2 and it shows that there is a positive correlation between the dependent variable (Evd) and all the independent variables of the study.

Table 2 Correlation Matrix

Variables	Evd	Fsz	Lev	Roa	Age	Vif
Evd	1.000					
Fsz	0.593	1.000				1.19
Lev	0.005	0.117	1.000			1.17
Roa	0.092	-0.000	-0.098	1.000		1.03
Age	0.399	0.380	-0.002	0.003	1.000	1.01

Source: STATA 14 Output 2016

This implies that as the firm size, leverage, return on assets and firm age increase, the level of environmental reporting practices of listed manufacturing firms in Nigeria also increases. Kaplain (1982) as cited in Hussain, Islam and Andrew (2006) suggest that that multicolinearity may be a problem when the correlation between independent variables is 0.9 and above where as Emory (1982) considers more than 0.80 to be problematic. Therefore, it is evident from the above table that the magnitude of the correlation amongst the explanatory variables generally indicates no severe multicolinearity problems in the study because the highest correlation coefficient is 0.593 between evd and fsz. To determine the presence of collinearity problem, a Variance Inflation Factor (VIF) test is carried out and the results provide evidence of the absence of collinearity because the results of the VIF test range from a minimum of 1.01 to a maximum of 1.19 and a mean of 1.10. VIF of 5.00 can still be a proof of absence of collinearity (Neter, Kutner, Nachtsheim & Wasserman 1996)

Furthermore, the data collected for the explanatory variable- firm size is transformed using natural logarithm to do away with any outlier that might obstruct normality. Pauline and Mathews (2002) suggest that data transformation should be applied for skewed data set to eliminate outliers that exist within the huge data range from the larger to smaller firm. By doing so, it blends the data set to the extent, which can be guaranteed that the details of each data were taken into the statistical measure. Moreover, the test of heteroscedasticity is conducted to check whether the variability of error terms is constant or not. The presence of heteroscedasticity signifies that the variation of the residuals or term error is not constant which would affect inferences in respect of beta coefficient, coefficient of determination (R^2) and F-

statistic of the study. The result of the test reveals that there is presence of heteroscedasticity because the probability of the chi square is statistically significant at 1%. This further necessitates the study to run for fixed effect regression model and random effect regression

The use of regression model to estimate the coefficient of any panel data requires the determination of whether the fixed effect or the random effect model suits the data more efficiently using Hausman statistical test (Gujerati, Porter &Gunasekar 2012) the results of the Hausman statistics test shows that the fixed effect is more appropriate for the study because the result is significant at 1% with a p value of 0.000. The regression results of Ordinary Least Square (OLS) and the Fixed Effects (FE) results are presented in table 3

Table 3 Regression Result

Ind. Variables	Coefficients OLS	T- Values OLS	P-Values OLS	Coefficients Fixed effects	T Values Fixed effects	P-Values Fixed effects
Constants	-3.643	-3.63	0.000	-4.62	-5.17	0.000
Fsz	1.466	13.24	0.000	0.574	5.45	0.000
Lev	-0.330	-1.28	0.201	0.543	2.58	0.010
Roa	2.182	2.39	0.017	1.459	2.44	0.015
Age	0.122	5.10	0.000	0.490	12.42	0.000
No of Obs	464	464	464	464	464	464
R-Squared	0.398			0.494		
F- Value	75.9			105.22		
P-Value	0.000	0.000	0.000	0.000		0.000
R-squared..						
Adjusted R-Squared	0.3929					
Within				0.494		
Between				0.163		
Overall				0.243		
Rho				0.767		
F value u i				28.92		
p-value				0.000		0.000
Hausman				26.47		
P-value				0.000		

Source, Field work 2016 (STATA version 14 output)

From the p-values which are statistically significant, the validity of the model under each of the estimations is evident. The R-squared of 39.8% of the OLS and 49.4% for the fixed effect show that the changes in environmental reporting practices are substantially accounted for by the explanatory variables. This implies that the independent variables can explain 39.8% of the changes in the dependent variable under OLS, while that of FE is 49.4%. Furthermore, for the fixed effect estimation, the F-statistics of 105.22 and p-value of 0.000 confirm the fitness of the model.

In the OLS and fixed effect (FE) firm size has positive coefficient of 1.466 and 0.574 respectively. Each of the estimations also had a p-value of 0.000 at 1% level of significance. The implication of this is that as firm size increases the level of environmental reporting practices also increases. This finding supports the studies conducted by Mohammed and Tamoi (1999); Galvani, Graves and Stavropoulos (2011) who documented that there is a significant effectbetween environmental reporting practices and firm size and contradicts those by Hussain, Islam and Andrew (2006) that find no significant effect between environmental reporting practices and firm size. This finding also lays credence to legitimacy theory which posits that the firm tries to meet the needs of stakeholders to gain acceptance as its size increases because legitimacy is assumed an important resource determining their survival. The implication of this to investors that are environmentally friendly is to encourage growth in asset base of the firms they are interested in to enhance the ability of the firms to carry out sustainability activities.

Considering leverage, the OLS estimates an insignificant effect between leverage and environmental reporting practices of Nigerian listed manufacturing firms while the fixed effects estimate a positive significant effect between leverage and environmental reporting practices at 1% confidence level. Hall (2005) argues that OLS is biased because it fails to address the problem of endogeneity and as a result the study leans towards the fixed effect result,

besides it is more consistent with the correlation result of the study. The implication of this is that as the leverage increases, the level of environmental reporting practices also increases. This finding is consistent with those of Hussain Islam and Andrew (2006) who fined that there is a positive and significant effect between leverage and the level of environmental reporting practices. This finding is also in line with legitimacy theory which posits that a firm with a high degree of dependence on debt would encourage a company to increase social and environmental activities by disclosing more environmental information in order to meet its creditors' expectations on environmental issues. The study opposes those of Ahmed and Nicholls (1994) and Uwigbe (2011) that found an insignificant effect of leverage on environmental reporting practices.

The two estimations of both OLS and fixed effects agree that return on assets is significant and positively related to environmental reporting practice of Nigeria listed manufacturing firms at 5% confidence level with p-values of 0.017 and 0.015 respectively. This implies that there is a significant positive effect between return on assets and environmental reporting practices of Nigerian listed manufacturing firms. This finding confirms those of Bassey, Effiok and Eton (2013) who assert that there is a significant positive effect between return on assets and environmental reporting practices of non-listed petroleum firms in Nigeria and also in line with legitimacy theory which posits that as a firms' profit increases its social contract with the environment it operates also increases because the society expects more from them to enjoy more acceptance. This finding is not consistent with that of Smith (2007) who finds an insignificant effect of return on assets on environmental reporting practices. This finding implies that as the profit of listed manufacturing firms in Nigeria improves environmental reporting practices also increases.

Considering firm age, the two estimations of both OLS and fixed effects agree that firm age is significant and positively related to environmental reporting practice of Nigeria listed manufacturing firms at 1% confidence level with p-values of 0.000 each. This implies that as the age of a firm increases, its level of environmental reporting practices also increases. This finding is in line with legitimacy theory which posits that as a company operates longer, there will be more communication needed with the outside community. This provides companies with wide social networks, affecting their public image. This finding opposes that of Omar (2014) who documents that there is no association between firm age and the level of environmental reporting practices

5.0 Conclusion and Recommendations.

This study examines the effect of firm characteristics on environmental reporting practices of listed manufacturing firms in Nigeria as at financial year end 2015. The study covers twenty-nine firms out of the sixty-one firms operating in the manufacturing industry in Nigeria. The findings have a clear policy implication on environmental reporting practices in Nigeria based on the results of the descriptive statistics, correlation matrix, the OLS and the fixed effect of the study. The results of the study show that the level of environmental disclosure in Nigeria based on the ISO 14031 is low. The results of the study also show that all the firm characteristics examined in the study are statistically significant at 1% confidence level. The study recommends, based on the findings, that listed manufacturing firms should be raising fresh funds by retaining a good portion of their profits for the acquisition of more assets to enhance environmental reporting practices in Nigerian listed manufacturing firms. Also, manufacturing firms should imbibe cost-saving consciousness so that firms can be making enough profits to enhance environmental reporting practices. Furthermore, government should no longer allow environmental reporting to be voluntary but make it compulsory using ISO 14031 guideline among manufacturing firms in Nigeria for the purpose of obtaining detailed reports and easy comparison among firms by using it as a common standard.

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