

# Firm Attributes and Sustainability Reporting In Nigeria

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**Abstract:** The study examines the impact of firm attributes (firms size, leverage and profitability) on sustainability reporting in Nigeria. This study employs the ex-post causal research design. The sample consist of 35 manufacturing companies selected listed on the Nigerian Stock Exchange. These companies are selected because they could be regarded as environmentally sensitive companies. The study employed secondary data retrieved from corporate annual reports of the environmentally sensitive companies quoted from 2011-2017. For the estimation of the data, the Generalized Least Squares was first utilized for the estimation and moving forward fractional regression is also employed and this is because econometric modelling of bounded dependent variables presents limitations for linear estimation methods. In this study, we combine both approaches. The white adjusted standard error was employed to control for potential heteroskedasticity in the estimation and hence the estimation results are free from heteroskedasticity. Both panel period and cross-sectional heteroskedasticity was examined and the estimations were found to be free from such. The Pesaran cross-dependence test was employed to confirm the threat of the serial correlation in the errors and the statistic reveals the absence of cross-section dependence in the residuals. The analysis of coefficients reveals that on the overall, only firm size is seen as the only variable to having a positive and significant impact on sustainability reporting. The study recommends the need for improved sustainability disclosures for companies in Nigeria

**Keywords:** Sustainability Reporting, Firm size, Leverage, Profitability

## 1. INTRODUCTION

Since the United Nations charter on the environment came into existence, efforts to ensuring sustainability has received recognition globally as one that simultaneously addresses the concerns of this generation's and also ensures that future generations can also meet their own needs. Firms are now expected to show their concerns for contributing to efforts at ensuring sustainability by taking up corporate sustainability reporting or "the triple bottom line" that incorporates environmental, social, and economic parts. The practice of corporate sustainability reporting has grown significantly through the last ten years especially in developed countries (KPMG International, 2013). However same cannot be said for most developing countries that are just barely able to disclose comprehensive corporate social responsibility information let alone developing a wider framework of sustainability reporting. The triple bottom line (TBL) concept, initiated by Elkington (1998) is perhaps the best-known structure for accounting for corporate sustainability, establishing that the dimensions by which it is measured must include analyzing the social, economic and environmental issues that are relevant to stakeholders. From Elkington's Triple Bottom Line concept sprang the contemporary practice of sustainability reporting. Nearly all proposed definitions for sustainability reporting do, however, pay tribute to Elkington's TBL concept by underscoring the imperative of reporting on the social, economic and environmental dimensions (Daub, 2007; Davis & Searcy, 2010; Fifka & Drabble, 2012).

In a global context, the diffusion of sustainability reporting has not been the same across sectors. Among those

who first adopted the practice, unsurprisingly there seemed to be a disproportionate representation of industries that are widely viewed to impose the greatest impacts to society and the environment. As the practice gained in popularity, industries that had not formerly participated in the practice began to publish their sustainability report (KPMG International, 2011). However, the voluntary and unregulated nature of sustainability reporting affords corporations considerable latitude in determining if and how they choose to account for the social, economic and environmental costs and benefits associated involved with their business practices. Sustainability reporting serves as an instrument for reporting and communicating to stakeholders from an accounting perspective embedded in annual reports and at times in other separate reports.

With regards to the sustainability reporting level, not much is known for corporate entities in Nigeria though some attempts have be made to examine the issue. For example, Asaolu, Agboola, Ayoola and Salawu (2011) in a paper assessed the Nigerian Oil and Gas sector sustainability reporting, Oyewo and Badejo (2014) on sustainable development reporting practice by banks in Nigeria employing a 30-item checklist, Nwobu (2015) using content analysis and Onyali, Okafor and Onodi (2015) using primary data, studies devoted to examining sustainability reporting for Nigerian entities are largely insufficient. Again, prior studies such as Asaolu, Agboola, Ayoola and Salawu (2011) Oyewo and Badejo (2014) and Nwobu (2015) have been limited in their research focus on sustainability reporting. They primarily restricted their works to evaluating the level of sustainability reporting for the entities examined, but did not extend further to show what factors control sustainability reporting level. Thus, this study addresses this gap by

identifying what factors and firm attributes account for sustainability reporting level in Nigeria and in so doing presents a robust evaluation of the strength of the theoretically identified determinants in promoting sustainability reporting. Consequently, the study examines the impact of firm attributes (firms size, leverage and profitability) on sustainability reporting level in Nigeria.

## 2. LITERATURE REVIEW AND HYPOTHESES

### 2.1 Concept of Sustainability Reporting

Unlike financial reporting, Sustainability reporting (SR) is a more recent concept. Sustainability reporting is a systematic tool for putting together and presenting sustainability information needed for the process of management, and is also useful to stakeholders. (Saji, 2014). Elkington (1997) explains “sustainability reporting” or “triple bottom-line reporting” in a layman’s perspective as a mechanism of evaluating and disclosing the performance of a firm to meet “social, economic and environmental” parameter, however, in a broader perspective, it covers completely the values, issues and procedures which organizations are required to attend to so as to cut down on the negative impacts associated with their activities and thereby giving better social, economic and environmental values, where the three lines symbolize society, economy and the environment. According to Dyllick and Hockerts (2002) corporate sustainability involves an organisation aiming at the interests of both direct and indirect stakeholders and achieving them, while ensuring that it will be well able to meet the needs of stakeholders in the future. SR is generally described as a framework for reporting which focuses on three significant aspects being “the economic, social and environmental performance” of a firm, besides its financial well-being (Choudhuri and Chakraborty, 2009). Global Reporting Initiative (GRI), a well-known organization in the area of sustainability defines SR as an involvement in evaluating, disclosing and being answerable to the stakeholders, both the internal and the external, for the total well-being and general performance of the organisation. Sustainability reporting has to do with measuring, accounting, and disclosing an organization’s economic, environmental and social performance result in an increase in the performance of the firm and improve sustainability development (Association of Chartered Certified Accountants, ACCA 2005). There are other terms that SR can be interchanged with, such as Corporate Social Responsibility (CSR), (Christensen, Peirce, Hartman, Hoffman & Carrier, 2007); or Triple Bottom Line (TBL), a concept whose ideology states that the value created by business firms or other organizations is in several forms, which are in the social, economic and environmental value added (Elkington, 2006).

### 2.2. Level of Sustainability Reporting in Nigeria

The level of sustainability reporting in Nigeria has been examined by several studies. Asaolu, Agboola, Ayoola & Salawu (2011) assessed sustainability reporting in the

Nigerian oil and gas sector. The study which aimed at the 6 major oil and gas multi-nationals that operate in Nigeria, with data gotten through content analysis of their annual reports, stand-alone sustainability reports and other publications of triple line reports that was used to explain the rate of compliance of their reports with world best practices. The result show markers of sustainability reporting that are discretionary and irreconcilable across the firms examined in the study and therefore suggest the introduction of an SR guideline that is in tune with standard best practices in Oil and Gas industries globally.

Oyewo & Badejo (2014) carried out a study on sustainable development reporting practice by banks in Nigeria. A 30-item checklist was constructed to use for content analysis of the 2012 published annual reports of 12 publicly quoted banks selected for sustainability practice disclosures. The items were grouped into four main classes of sustainability as follows; social, economic, environmental and then general. It employed correlation analysis to analyze the association among variables. The results reveal that Nigerian banks engaged more in the social aspect of sustainability; and there was no significant difference in the sustainable solution practices among them. Firm attributes like the firm size and profitability had no influence on sustainability practice.

Nwobu (2015) studied the annual reports of 8 banks in Nigeria to examine whether sustainability reporting is present or not using content analysis in form of disclosure index. In the results, sustainability was seen to have been given much attention in the past four years in the banking sector of Nigeria. Onyali, Okafor & Onodi (2015) evaluates the rate at which the practice of triple by corporations in Nigeria is effective by observing the point of view of corporate stakeholders. The research design which was used to obtain the necessary data was the descriptive method, having the target population as three different groups: accountants, investors and customers/consumers. Being that the form of data was primary, it was summarized with tables while analysis of the hypotheses was done with SPSS version 22 using a one-sample z test method. Their results show discontent of the investors and consumers with the TBL disclosure practices of companies in Nigeria.

### 2.3. Firm Attributes and Sustainability Reporting

#### 2.3.1. Company size and Sustainability Reporting

It is generally agreed that large companies have greater tendency and greater social obligation. Large companies are assumed to face more public exposure and often they would face more legitimate issues than smaller companies (Watts & Zimmerman, 1978). As large companies do more, they thus tend to exert more effect on the society, thereby attracting increased public attention which puts them under more pressure in relation to what steps they are taking to address sustainability issues (Patten, 1991). This shows the possibility of public scrutiny for large firms to be high and they are expected to have more influence on the environmental practices of the general

business environment. Andreas, Desmiyawati and Warda ((2016) conducts a study that investigated how the size of the firm impacts on their SR behavior making use of listed firms in Indonesian stock exchange using 53 firms. The findings reveal that firm size, have significant impact on CSR disclosure. Obeitoh, Ridzwana and Zaidi (2017) examine the determining factors and level of corporate sustainability disclosure on employees in Malaysia. The study covers a six year period of 2010 to 2015 of 253 companies in Malaysia. The study employed two-step system generalized method of moment (GMM) for analysis. The results show company size is a determinants of corporate sustainability. Ong, Tho, Goh, Thai & The (2016) carries out a study in Malaysia on the connection between environmental disclosures and financial performance of public listed companies. The result showed that large companies gave more environmental information as well as provides better quality disclosures. Li, Toppinen, Tuppura, Puumalainen and Hujala (2011) examine current models and determining factors of sustainability disclosure in the forest industry globally. The regression analysis results present firm size to be significantly associated with disclosure, in developing sustainability reporting strategies in the forest industry. Kuzey & Uyar (2016) carried out a study geared towards investigating the factors responsible for the practice of sustainability reporting by listed Turkish firms. The results reveal that firm size is identified as a major sustainability reporting determinant. Consequently the study raises the null hypothesis as follows;

*H<sub>01</sub>: Firm size has no significant impact on corporate sustainability reporting in Nigeria*

### 2.3.2. Leverage and Sustainability Reporting

In order to assure investors and lenders, a high leverage company tends to disclose more information to demonstrate its ability to pay its obligations (Ho & Taylor, 2013). Where there is high indebtedness, leverage, or gearing, it has a way of reducing the firm's ability to bear cost associated with SR and the negative outcomes from reporting what maybe potentially harmful information (Stanny and Ely, 2008). Empirical research on this determinant provides contradictory results. Trotman & Bradley (1981) employed the content analysis technique to examine what exists between social sustainability reporting and characteristics of companies. The findings show a positive relationship between firms' financial leverage and voluntary disclosure level.

Kilic and Kuzey (2017) investigate the sustainability reporting practices of Turkish non-financial companies listed on Borsa Istanbul (BIST) from 2004 to 2015. It revealed that listing on the Corporate Governance Index (CGI), having a sustainability committee, leverage is not a significant factor affecting sustainability disclosures. Akbas (2014) examines the relationship that exists between company characteristics and environmental disclosure level of Turkish companies using 62 non-financial firms listed on the BIST-100 index at the end of 2011. leverage have no

statistically significant relationship with the extent of disclosure. Agyei-Mensah (2012) investigate the effect of firm-specific characteristics such as debt equity ratio on voluntary disclosure level of rural banks in the Ashanti region of Ghana. The result shows debt equity ratio is significantly related to the disclosure level. Egbunike and Tarilaye (2017) examine the relationship existing between firm's specific attributes amongst which was leverage and voluntary environmental disclosure with evidence from some listed manufacturing firms in Nigeria. Data of these attributes were collected out of annual reports and accounts of some selected manufacturing companies from 2011-2015. Results showed that firms under study had high leverage profile and some with low leverage profile. Consequently the study raises the null hypothesis as follows;

*H<sub>01</sub>: Leverage has no significant impact on corporate sustainability reporting in Nigeria*

### 2.3.3. Profitability and Sustainability Disclosures

Firm performance can be used to determine sustainability reporting, as profitable companies could involve disclosing sustainability information to legitimize their operations (Legendre & Coderre, 2013). Studies often assumes profitability (measured using return on assets or return on equity) to increase the firm's capability and flexibility to bearing sustainability reporting costs and to cope with the end result of disclosing possibly harmful information (Kent & Monem, 2008). Reiner (2008) evaluated the quality of German sustainability reports using GRI guidelines as a benchmark for constructing and applying a scoring model. Analysis was done Twenty-six reports from companies listed on the DAX30 and the MDAX. The result stated a weak positive correlation between the financial performance of a company and the quality of sustainability reporting. Dilling (2010) investigates significant variations pertaining to size, financial performance, capital structure, and corporate governance amongst firms that issue a G3 SR and those that do not. Quantitative and qualitative variables of 124 randomly selected G3 reporting and non-G3 reporting corporations within 25 countries were analyzed. In the results it is discovered that firms with a higher profit margin tend to produce high quality sustainability reports. Ganewatta and Priyadarshanie (2016) sought to analyze the potential effect firm characteristics has on the level of corporate social disclosures in annual reports of listed banking companies in Colombo Stock Exchange. Data was gathered for four years from 2011 to 2014 from 11 commercial banks listed in Colombo Stock Exchange (CSE). The profitability is an insignificant factors for determining the level of social disclosures. Consequently the study raises the null hypothesis as follows;

*H<sub>01</sub>: Profitability has no significant impact on corporate sustainability reporting in Nigeria*

## 2.4. THEORETICAL FRAMEWORK

### The Resource-Based View (RBV)

In the 1990s, with the increasing use of the resource-based approach, strategy researchers' focus regarding the sources of "sustainable competitive advantage" drifted from industry into firm specific characteristics. Introduced in the mid-1980s by Wernerfelt (1984), Rumelt (1984) and Barney (1986), the resource-based view (RBV) has since turned into a major contemporary approach to analyzing "sustained competitive advantage". The concept of the RBV in the strategic management research emerged in the early 1990s. Hence the study argues that firm's resources such as leverage, size, financial performance, liquidity and other resources and assets can influence whether a firm adopts sustainability reporting as part of its stewardship strategy and even its competitive strategy and this is even more relevant given the recent emphasis and growth in the number of investors interested in sustainability investing. Branco and Rodrigues (2006) give details basing on the RBV the reasons why firms carry out sustainability reporting initiatives by identifying the internal and external benefits they receive. Using the RBV theory, this study argues that the degree of sustainability disclosures depends on several internal and external factors which includes the firm's characteristics and structure of the firm.

### 3. METHODOLOGY

This study employs the ex-post causal research design. The sample will consist of 35 manufacturing companies selected listed on the Nigerian Stock Exchange. These companies are selected because they could be regarded as environmentally sensitive companies. The study employ secondary data retrieved from corporate annual reports of the environmentally sensitive companies quoted from 2011-2017. For the estimation of the data, the Generalized Least Squares was first utilized for the estimation and moving forward fractional regression is also

employed and this is because econometric modelling of bounded dependent variables presents limitations for linear estimation methods. Bounded response variables (variables assuming values between 0 and 1) present peculiar distributional properties; as a result, in most cases such variables are not amenable to linear regression models. The fractional response model (FRM) developed by Papke and Wooldridge (2008) is used as a robustness approach to address potential challenges posed by bounded dependent variables. In this study, we combine both approaches. Prior to the panel regression, the following diagnostics will be conducted such as the normality test, multicollinearity test, serial correlation test, heteroskedasticity test and the Ramsey reset test.

### Model Specification

The model for the study examines the impact of firm attributes on corporate sustainability reporting in Nigeria. The model adapts those of Obeitoh, Ridzwana and Zaidi (2017) and Ong, Tho, Goh, Thai & The (2016) modifying the choice of firm attributes to be used. The model for the study is thus presented below;

$$SR_{it} = f(\text{Firm Attributes}) \quad \dots \quad (i)$$

$$SR_{it} = f(FSIZE, LEV \text{ and } ROA) \quad \dots \quad (ii)$$

Expressing in econometric form, we have;

$$SR_{it} = \beta_0 + \beta_1(FSIZE_{it}) + \beta_2(LEV_{it}) + \beta_3(ROA_{it}) + \varepsilon_{it} \quad (iii)$$

Where SR= Sustainability reporting

FSIZE= Firm size

IND=Industry

LEV= Leverage

FIN-PERF= Financial Performance

$\varepsilon_{it}$  = error term

$i$ = firm  $i$

$t$ = time  $t$

### 4. PRESENTATION OF RESULT

**Table 4.1. Descriptive Analysis**

	LEV	ROA	SR	FSIZE
Mean	0.2552	0.14729	0.597307	7.038834
Maximum	0.8200	0.8444	2.010000	9.020000
Minimum	0.000	-0.1900	0.000000	5.090000
Std. Dev.	0.1616	0.206527	0.218310	0.747488
Skewness	-0.6899	1.39409	1.006656	0.156511
Kurtosis	4.0306	3.8373	7.010271	2.699335
J.B	72.185	206.225	489.1298	4.576114
Prob	0.000	0.000	0.000	0.101

Source: Researcher's compilation (2019).

Table 4.1 shows the descriptive statistics for the variables and as observed, the mean for the mean for LEV is 0.2555 with maximum and minimum values of 0.82 and 0% respectively. The standard deviation stood at 0.1616 is an indication of the level of dispersion from the mean and the Jacque bera statistics p-value (0.000) confirms the normality of the series and the unlikely presence of outlier values in the series. The mean for ROA is 0.147 with maximum and minimum values of 0.844 and -0.1900 respectively. The standard deviation stood at 0.206 showing the dispersion from the mean and the Jacque bera statistics p-value (0.000) confirms the normality of the series and the unlikely

presence of outlier values in the series. The mean for SR-index is 0.597 which is around average and suggest that on the average companies in the sample are performing quite moderately in relation to their SR. However, there is room for significant movements up the trajectory especially in relation to quality of disclosures importantly in the environmental dimension. The standard deviation at 0.218 and Jacque bera statistics p-value (0.000) confirms the normality of the series and the unlikely presence of outlier values in the series. FSIZE shows mean value of 7.03 respectively and the Jacque bera statistics p-value (0.000) confirms the unlikely presence of outlier values in the series.

Table 4.2: Pearson Correlation Matrix

	LEV	ROA	FSIZE	SR
LEV	1			
ROA	0.18206	1		
FSIZE	-0.1453	-0.101	1	
SR	-0.0118	-0.1348	0.0301	1

Source: Researcher's compilation (2019)

Table 2 shows the Pearson product moment correlation for the variables and particularly, we are interested in the correlations between SR and all other variables. From the results, we observe that SR is positively

correlated with FSIZE ( $r=0.030$ ) and is negatively correlated with ROA ( $r=-0.135$ ) and LEV ( $r=-0.0118$ ). However correlations are not adequately sufficient to suggest functional causality between variables.

Table 4.3 Variance Inflation Factor Test

Variable	VIF
LEV	1.708008
ROA	3.133199
FSIZE	2.207941

Source: Researcher's compilation (2019)

The variance inflation factor (VIF) explains how much of the variance of a coefficient estimate of a regressor has been inflated, as a result of collinearity with the other regressors. Essentially, VIFs above 10 are seen as a cause of Table 4.4. Regression Result

concern as observed, none of the variables have VIF's values more than 10 and hence none gave serious indication of multicollinearity

Variable	Aprori Sign	FE Model	RE Model	Fractional Regression Model
<i>C</i>		0.4727* (0.077) {0.000}	0.4981* (0.1151) {0.000}	1.0028* (0.1202) {0.000}
<i>LEV</i>	+	-0.0039 (0.0023) {0.0998}	-0.0032 (0.004) {0.4461}	-0.0007 (0.005) {0.1979}
<i>ROA</i>	+	-0.0594* (0.0309) {0.0454}	-0.1573* (0.0550) {0.0045}	-0.2750* (0.064) {0.000}
<i>FSIZE</i>		-0.0136* (0.0287)	-0.0415 (0.0550)	-0.0865 (0.0639)

		{0.6352}	{0.4107}	{0.1762}
<i>Model Parameters</i>				
R <sup>2</sup>		0.7602	0.0433	
Adjusted R <sup>2</sup>		0.7219	0.0288	
Pseudo R <sup>2</sup>				0.310
F-statistic		19.860	3.156	0.7483
Prob(F-stat)		0.000	0.00	0.0031
<i>Model Diagnostics</i>				
Hausman			0.0392	
Ramsey Reset test		0.410		
Period Hetero.Test		0.81		
Cross-section Hetero.Test		0.431		
Pesaran CD for serial correlation		0.787		
Hosmer-Lemeshow				0.840
Likelihood ratio				36.40
Prob				0.000

Source: Researcher's compilation (2019)

Table 4.4 show the regression results examining the impact of firm attributes on SR. The Hausman test FE is the preferred model to the random effects indicating presence of correlations between the errors and the explanatory variables which is the key assumption of the fixed effects (Hausman, 1998). Hence the FE estimation results are reported for the analysis of the results for the study. The white adjusted standard errors was employed to control for potential heteroskedasticity in the estimation and hence the estimation results are free from heteroskedasticity. Both panel period and cross-sectional heteroskedasticity was examined and the estimations were found to be free from such. The Pesaran cross-dependence test was employed to confirm the threat of the serial correlation in the errors and the statistic reveals the absence of cross-section dependence in the residuals. The R<sup>2</sup> is 0.7602 which implies that the model explains about 76.02% of the systematic variations in the dependent variable with a degree of freedom adjusted the R<sup>2</sup> of 72.19%. The F-stat is 19.860 (p-value = 0.00) is significant at 5% and suggest that the hypothesis of a significant linear relationship between the dependent and independent variables cannot be rejected. It is also indicative of the joint statistical significance of the model. The analysis of coefficients reveals LEV has a negative (-0.0039) effect on SR though not statistically significant at 5% (p=0.0998). The impact of FS is positive (0.0594) but statistically significant at 5% (p=0.0455). The effect of ROA is positive (0.0136) though not statistically significant (p=0.6352) at 5%. The fractional regression estimates shows the pseudo R<sup>2</sup> is 0.310, the Pseudo R<sup>2</sup> values are typically smaller than what is seen for linear regression models (Norusis 2005). The F-stat is 0.7483 (p-value = 0.00) is significant at 5% and suggest that the hypothesis of a significant linear relationship between the dependent and independent variables cannot be rejected. The

analysis of coefficients reveals LEV has a negative (-0.0007) effect on sustainability reporting (SR) though not statistically significant at 5% (p=0.1979). The impact of FSIZE on Sustainability reporting is positive (0.2750) and statistically significant at 5% (p=0.000) supporting the FE results. The effect of ROA is negative (-0.0865) though not statistically significant (p=0.1762) at 5%. The Hosmer-Lemeshow test has p-value of 0.679 which indicates a good fit to the data and likelihood ratio is also significant as p-value <0.05 and thus confirms that the given model with independent variables was more effective than the null model. On the overall, only firm size is seen to have a positive and significant impact on sustainability reporting. It is generally agreed that large companies have greater tendency and greater social obligation. Large companies are assumed to face more public exposure and often they would face more legitimate issues than smaller companies. The finding is in tandem with Andreas, Desmiyawati and Warda ((2016) for Indonesian firms, Obeitoh, Ridzwana and Zaidi (2017) for Malaysia, Ong, Tho, Goh, Thai & The (2016) for Malaysia, Li, Toppinen, Tuppura, Puimalainen and Hujala (2011) and Kuzy & Uyar (2016) for listed Turkish firms.

## 5. CONCLUSION AND RECOMMENDATION

Corporations cite a litany of motivations for having catalyzed their sustainability reporting, including: public relations strategy, stakeholder demand, risk reduction, ethical considerations, and business opportunity. Nevertheless, academic research of this phenomenon has led to diffuse theories to explain the practice's uptake. However, this gradual reporting metamorphosis towards sustainability comes with further diversity in the content and quality of corporate sustainability reports. The voluntary and unregulated nature of sustainability reporting affords corporations considerable latitude in determining if and how

they prefer to account for the economic, social, and environmental costs and benefits associated with their business practices. The study makes the following recommendations; firstly, there is the need for Nigerian banks to widen their reporting coverage to other areas of economic sustainability aside from core financial aspects. The study recommends that regulatory authorities can use these corporate attributes as incentives to encourage sustainability reporting. For example, there can be thresholds that states that banks beyond a certain size must improve on their sustainability disclosures and borrowing capacity exceeding a certain threshold must be followed by improvement in sustainability reporting.

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