“Corporate social environmental reporting and stock prices: an analysis of listed firms in Nigeria”

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The study investigated Corporate Social Environmental Reporting and its association with stock prices (using market price per share as at the financial year end) among listed firms in Nigeria. The study used a cross-sectional research design comprising 50 publicly listed companies across various sectors for the period of five years (2011–2015). For the selected firms, the annual report was used to collect the data. This research utilizes the panel data regression in analyzing the influence of the independent variable (measured by corporate social and environmental expenditure) on the dependent variable measured using the market price per share for the respective years. Also, in an attempt to examine the relatively market price per share across the sampled industries, the study made use of the one-way analysis of variance; while the Granger causality test was also conducted to ascertain whether bi-directional relationships exist between explanatory variable and the dependent variable (i.e. corporate social and environmental expenditure and market price per share). Findings from the study revealed that the association between corporate social and environmental expenditure and the market price of the firm (when considered in aggregate) is not significant. The result from the Analysis of Variance (ANOVA) showed that the market price per share is significantly different across the industries.

Keywords  
- environmental disclosure, social environmental expenditure, stock prices, market price per share

JEL Classification  
- M14, M41, M42

INTRODUCTION

Climate change and its impact on the activities of mankind on the environment has increased over the years with amplified public interest and scrutiny on the operations of corporations. These have necessitated the cries from stakeholders for firms to disclose corporate environmental information in their statement of financial position annually. Corporate environmental disclosure as the term implies can be described as the various ways in which companies disclose by announcing information on actions and the effects on the environmental or operations on the environment to the users of financial statement (Alok, Nikhil, & Bhagaban, 2008). Thus, environmental disclosure is paramount not only to report on the economic and monetary activities of companies, but also to reflect the environmental impact of the firm’s activities on the environment and the amount being spent to clean up the environment. Over the years, firms involved in the disclosure of their environmental information based on their sustainability policies have increased, specifically since the first independent corporate environmental and sustainable reports were published in 1989 (Uwuigbe et al., 2017). Thus, corporate social, environmental sustain-
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ability reporting has not only become more important, but also serves as a competitive advantage for firms involved in sustainability reporting. The concept is likewise understood as the obligatory contribution of organizations and businesses towards sustaining increased productivity, and growth of the economy, work with employees, their families, local stakeholders in general to increase the tone of alive-ness (the World Business Council for Sustainable Development, 2002).

It is important to note that the capital markets across the globe basically respond to information about organizations financial and environmental performance. It may respond negatively to news of adverse environmental impact (such as oil spills, or violations of permits) and it may also respond positively to information relating to organizations environmental clean-up (Dasgupta & Mamingi, 1998). The scrutiny of the relationship between financial performance and corporate environmental performance have been carried out by many studies. However, the outcome from such these studies has been inconsistent based on the choice of proxies and control variables used and the existing environmental policies that exist in such countries (Priyanka, 2013; Balabanis, Phillips, & Lyall, 1998; Tsoutsoura, 2004; Uwuigbe et al., 2017). More so, there has been series of documented studies relating to Corporate Social Responsibility (CSR) and corporate financial performance both in developed and developing economies (Balabanis, Phillips, & Lyall, 1998; Tsoutsoura, 2004; Uwuigbe & Olusanmi, 2012; Olayinka & Temitope, 2011; Uwuigbe et al., 2016; Ajide & Aderemi, 2014; Okegb & Egbonik, 2016; Olubukola et al., 2016), as well as emerging economies (Aras, Aybars, & Kutlu, 2009; Crisostomo, Freire, & De Vascincellos, 2011). Despite these avalanche of prior studies that exist in the literature, none of these studies especially in Nigeria has attempted to examine the impact corporate social and environmental disclosure on stock market prices in Nigeria. Hence, the study examined the relationship between corporate social and environmental expenditure and market price of firms. In addition, it also attempted to find out whether a bi-directional relationship exists between corporate social and environmental expenditure and stock market price.

As a follow up to the introductory section, this paper can be previewed as follows: the first section is focused on the review of previous and existing studies that have a relationship with this study, as well as the development of the hypotheses. The second section of this paper covers the adopted research method to be used for this study. Finally, the third and final section gives insight into the results, conclusion and what this study recommends as related to the results found.

1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Over many years, there have been a lot of environmental incidents that have affected the environment negatively and this has led to the loss of means of livelihood of occupants in such region or nations. Some of the environmental catastrophes that have negatively affected the ecosystem comprise the Dust Bowl in Canada and the United States between 1934 and 1939, the Niger Delta oil spill, where over 2.4 million barrels of crude where spilled in 4,835 incidents between 1976 and 1996. These extensive environmental phenomenon in the 70's and 80's led to the establishment of a lot of organizations including the Brundtland Commission's report in 1987 (titled Our Common Future) that narrate sustainable development as the expansion, which attends to the necessity of present generation without undermining the power of succeeding generations to meet their own needs.

In Africa, the introduction and application of corporate social and environmental reporting is at the elementary stage, as companies especially in Nigeria and South Africa are taking more proactive steps towards the promotion of a sustainable environment. However, the production sector in Nigeria to some extent have been involved in optional declaration of social and environmental information (Owolabi, 2010; Uwuigbe et al., 2016; Uwuigbe, 2012; Ozordi et al., 2018). This concept according to Dahlsrud (2008) has remained uncertain in corporate and academic world, as most
of the definitions provided have been influenced towards principal interest, which hinders the development and actualization of the concept.

1.1. Related theories

A three-dimensional conceptual model of social responsibility, as developed by Caroll (1978), is inclusive of the categories in legal, discretionary, and economic responsibilities. The second deals with the social issues as consumerism, environmental, as well as occupational safety, as well as similar issues of social environmental reporting. The third deals with social responsiveness strategies (Caroll, 1978). It basically involves the obligation by the engagement of stakeholder to improve the social, economic, as well as the environmental situation in the communities. Several factors are usually responsible for the changes in the price of shares, especially in a competitive stock market.

1.2. Stakeholder theory

The theory believes that managers of organizations have a responsibility to contemplate and balance the interests of all interest groups (Freeman, 1984). Under this theory, firms are assumed to be accountable towards a broad range of stakeholders (future generations, suppliers, government, customers, community, employees, environment, etc.) (Freeman, 1984). The theory basically dissuades attention from constructing business success to focusing on who share its successes. Thus, the relationship between firms and society can be improved through corporate social and environmental reporting. Furthermore, the theory believes that stakeholders should not be undermined, since they can invoke actions that can threaten or bring about firms’ failure as a result of their inability to perform the duty of care (Freeman, 2004). Therefore, organizations must strive to ensure that stakeholders are treated right.

1.3. Legitimacy theory

This theory basically debates about the consensus between companies and society. The theory talks about the situation whereby organizations embraces a socially-oriented behavior in order to gain access to a social endorsement or acceptance of the environment in which they are domiciled (Guthrie & Parker, 1989). The theory is of the opinion that corporate bodies to carry out actions not only targeted at maximizing profit, but also intensifying the shareholders wealth and carrying out activities in such a way as not to garble the host communities (Anbumozhi, Chotichanathawewong, & Muruges, 2011). Under this theory, the survival of the social engagement between host communities and firms is important for the effective legitimation development (Mathews, 1993). Here, while the host community’s offers firms with the required materials for production, organizations manufacture goods and services and produce waste that alters the activities of the host communities where they operate. However, the association under this theory could be endangered by the disruption of unequivocal and inherent terms of the engagements. The existence of corporations can be jeopardized if a loss of the legitimacy process arises. This theory has been widely used in providing explanations to the existence of Corporate Social & Environmental Reporting (O’Donovan, 2002). Presently, shareholders are no longer pleased with organizations just providing goods and services and making profits, but currently demands businesses to incur cost if they must in order to reduce or prevent environmental degradation, to ensure that the consumers’ interest, safety of employees and safeguard the interest of host communities where the products are manufactured (Deegan & Rankin, 1997; Uwuigbe, 2012).

One of the main discrepancies between the two schools of thought is that legitimacy theory centers on society as a whole, while the stakeholder theory debates on the specific groups in society (Deegan, 2009). In addition, it fails to give an answer to the question of worth rather that it emphasizes the outcome with the assumption that an enterprise produces value and the claim of stakeholders on this value is as a result of the notion that society creates enterprise. More so, it does not provide an auxiliary solution to the question of who, or what, generates pecuniary worth, but stresses on the flow of the outcome assuming value is produced by the enterprise itself and that stakeholders have a claim on the value, because the enterprise is a creature of society. More so, the stakeholder theory generates a space for enquiries on what sort of theory would determine whose interest is stronger, and to which interests manag-
ers should respond where stakes conflict. Nothing this pitfall, this study adopts the legitimacy theory as the lens that explains and predicts the relation between corporate social and environmental reporting and stock market behavior. In summary, the theory suggests that corporations should not only be profit minded when doing business, but also they must ensure that all activities carried out by them should not affect the community negatively (Anbumozhi, Chotichanathawewong, & Muruges, 2011). In this scenario, the survival of the social agreement between the concerned parties (companies and the societies) is salient to the successful legitimation process (Mathews, 1993). This theory has been widely used in providing explanations for the existence of Corporate Social & Environmental Reporting (O’Donovan, 2002).

1.4. Review of prior literature

The level of awareness of corporate social environmental responsibilities in developing countries appears to be growing (Che Zuriana, Kasumalinda, & Rapiah, 2002; Abdul-Hamid, 2004). The manufacturing sector in Nigeria comprises firms mostly involved in environmental reporting System (Uwuigbe, 2011; Uwuigbe, 2012). However over the years the Nigerian banking sector has been on the spotlight or received attention from stock exchange regulators and CBN with regard to sustainability issues. Hence, the transition to sustainability has led to or influenced profitability and shareholders fund (Uwuigbe et al., 2016). According to Pamela and Robin (1998), there have been numerous research works in the last 25 years on the effect of corporate social environmental actions.

Over the years, evidence from prior studies shows that the impact of corporate social environmental activities on firm’s financial performance has been examined in recent times. The extent of concern shown by organizations to corporate social environmental activities and the pressure from stakeholders differs depending on the sector (Zhang, 2016). The unending debate on corporate social environmental disclosures has been ongoing for decades with the increasing demand for corporate accountability (Waddock, 2004).

Jaggi and Freedman (1992), in a related study on the impact of pollution performance on economic and market performance in pulp and paper firms, observed that firms were interested in the environmentally centered performance of the organization due to the long-run positive financial implication, which is beneficial. Dowell et al. (2000) found a positive relationship between market value and environmental standard. Kumar et al. (2002) in their study established a positive relationship between social behavior and the stock market.

In summary, evidence from prior studies show that while some literature discovers a positively significant relationship between corporate social environmental reporting and corporate financial performance (King & Lenox, 2001; Nakao et al., 2007; Guenster, Bauer, Derwall, & Koedijk, 2011; Yungchich, 2011; Oba, Fodio, & Soje, 2012; Griffin & Sun, 2012; Akinlo & Iredele, 2014; Nnamani, Onyekwelu, & Ugwu, 2017), others observed that no statistically significant relationship exist between the variables (Mcwilliams & Siegel, 2001; Fauzi, 2009; Fiori, Di Donato, & Izzo, 2009). The lack of consensus on the nature of the relationship between the variables has been attributed by the studies to methodological problems, omission of control variables, measurement problems and lack of causality. Furthermore, Allouche and Laroche (2005) highlighted data differences as a reason for the varied empirical results. Other studies are of the opinion that there is no statistical significance between environmental and financial performance (Kenneth et al., 1985; Alan, Donald, David, & Rob, 2005; Mahoney & Robert, 2007; Moneva & Ortas, 2008; Jacobs, Singhal, & Subramanian, 2010; Buys, Oberholzer, & Andrikopoulos, 2011; Venanzi, 2012; Solabomi & Uwuigbe, 2013; Solomon, Oyerogba, & Olaleye, 2014; Sukanya, Rebekah, & Yudhvir, 2015). These studies as described above observed that there is no consensus as to the nature of the relationship between corporate social environmental reporting and financial performance. Hence, this study examined the relationship between corporate social and environmental expenditure and the market price of firms in Nigeria.

1.5. Development of hypotheses

From the literature reviewed, the hypotheses have been postulated in their null form.
**H₀₁**: Corporate social and environmental expenditure has no effect on the market price per share of firms.

**H₀₂**: There is no significant difference using the market price per share in the stock price of firms across the industries.

**H₀₃**: There is no bi-directional relationship between corporate social and environmental expenditure and market price per share in the various industries.

### 2. METHODOLOGY

The engagement of financial and non-financial firms in corporate social environmental expenditure in the country constituted the basis from which the sample size was selected. The selection was based on the availability of the data, as several annual reports were not available at the Nigerian Stock Exchange library or the company’s websites. A total of 50 publicly listed companies were selected and the study focused on the period from 2011 to 2015. The study used the panel regression analysis and the Granger causality test to analyze the association between corporate social and environmental expenditure and the stock prices. Jacobs, Leamer, and Ward (1979) opined that they are sensitive to misspecification, however, this study used both tests in its analysis. Stock prices were used as a proxy for the performance of the stocks as against stock return considering the fact that the payment of dividend is a matter of company policy. A number of highly profitable firms might decide to retain profits for expansion rather than paying out to shareholders. Stock prices would provide better insight into the performance of the stocks, irrespective of whether dividend is paid or not (Summers, 1986).

#### 2.1. Model specification

The model is structured based on panel regression analysis in the following functional form:

\[ SP_u = f(CSEE_u, FSIZE_u, PROF_u) \]

The equation is explicitly stated for the hypotheses as:

\[ SP_i = \beta_0 + \beta_1 CSEE_{it} + \beta_2 FSIZE_{it} + \beta_3 PROF_{it} + \epsilon_{it}, \]

where \( SP \) – stock price, \( CSEE \) – corporate social and environmental expenditure, \( FSIZE \) – firm size, \( PROF \) – profitability.

### 2.2. Variables measurements

The measurements of the independent variables are shown in Table 1.

**Table 1. Construct of the control variables**

<table>
<thead>
<tr>
<th>Explanatory variables</th>
<th>Measurement</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock prices</td>
<td>Market price per share</td>
<td>Ohlson (1995)</td>
</tr>
<tr>
<td>Corporate Social Environmental Expenditure (CSEE)</td>
<td>Total donations on corporate social environmental activities</td>
<td>Abdulrahman (2013), Solomon, Oyegbola, and Olaleye (2014)</td>
</tr>
<tr>
<td>Profitability (PROF)</td>
<td>Earnings per share</td>
<td>Barako, Hancock, and Iyan (2006)</td>
</tr>
<tr>
<td>Firm size (FSIZE)</td>
<td>natural log of total assets</td>
<td>Wan Hussin, Che-Adam, Lode, and Kamardin (2005)</td>
</tr>
</tbody>
</table>

**Table 2. Variable definition for this study**

<table>
<thead>
<tr>
<th>MPS</th>
<th>Market price per share</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSEE</td>
<td>Corporate social and environmental expenditure</td>
</tr>
<tr>
<td>FSIZE</td>
<td>Firm size</td>
</tr>
<tr>
<td>PROF</td>
<td>Profitability</td>
</tr>
</tbody>
</table>

#### 2.3. Data analysis and discussion of findings

**2.3.1. Results (descriptive analysis)**

Table 3 depicts the descriptive statistics result for the dependent variable (market price per share) and the independent variables (corporate social and environmental expenditure, firm size and earnings per share). It can be seen from the table that amongst the sampled companies, the mean MPS is N0.45 out of a minimum of N0.50 and a maximum of N120, which shows a relatively poor market price for a greater number of the companies. The minimum CSEE is 0 and the maximum is N1,500,000,000, with an average of N73,700,000. This shows the extent to which the sampled firms are committed to their corporate social and environmental responsibilities. For the control variables, the sampled firms have an av-
verage total asset of N19,300,000,000, which shows that the firms are relatively large and the average EPS of N2.09 shows that the firms are profitable.

**Table 3. Descriptive statistics**

<table>
<thead>
<tr>
<th>Variable</th>
<th>OBS</th>
<th>MIN</th>
<th>MAX</th>
<th>MEAN</th>
<th>STD. DEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>247</td>
<td>0.50</td>
<td>1200</td>
<td>45.20</td>
<td>132.24</td>
</tr>
<tr>
<td>CSEE</td>
<td>247</td>
<td>0.00</td>
<td>1.5E9</td>
<td>7.37E7</td>
<td>2.04E8</td>
</tr>
<tr>
<td>FSIZE</td>
<td>247</td>
<td>5.30E8</td>
<td>3.75E12</td>
<td>1.93E11</td>
<td>5.72E11</td>
</tr>
<tr>
<td>PROF</td>
<td>247</td>
<td>–2002</td>
<td>2955</td>
<td>209</td>
<td>473.13</td>
</tr>
</tbody>
</table>

Note: For variable description E represents the number of zeros.

### 2.3.2. Correlation analysis

It is important to check for multicollinearity before proceeding with the regression analysis. Table 4 presents the correlation results for the dependent and independent variables. There is no presence of multicollinearity apart from the pairs board size and firm size ($r = 0.63$), and board shareholding and CEO incentive ($r = 0.52$) no other relationship exceeds the 50% mark.

**Table 4. Correlation matrix**

<table>
<thead>
<tr>
<th>Variables</th>
<th>SP</th>
<th>CSEE</th>
<th>FSIZE</th>
<th>PROF</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>1.00</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>CSEE</td>
<td>0.05</td>
<td>1.00</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>FSIZE</td>
<td>0.30</td>
<td>0.29***</td>
<td>1.00</td>
<td>–</td>
</tr>
<tr>
<td>PROF</td>
<td>0.12*</td>
<td>0.17***</td>
<td>0.28***</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Notes: SP – stock price, CSEE – corporate social and environmental expenditure, FSIZE – firm size, PROF – profitability. *, **, *** indicate significance at 10%, 5%, and 1%, respectively.

### 2.3.3. Panel data regressions

To estimate the model, the dependent variable fluctuation in stock prices is measured using the market price per share (kobo) for the respective years. The result of the Ramsey RESET test with and $F$-statistic value of ($F = 1.12, P = 0.34$). The test shows that there are no omitted variables in the model and as such the model is correctly specified. Based on the outcome as provided by the Breuch Pagan Langrangian Multiplier test, the null hypothesis is rejected, as it is revealed in the result. This is evident in the Chi-square values of $\chi^2 = 147.51$ and $p$-value = 0.00, respectively. Thus, the variance result from the random effect reveals that it is not equal to zero, hence, according to the rule of thumb, the random effect model is the most suitable for this research. However, comparing the result from the random effects model and the fixed effect model, the results implies that the coefficients of the fixed effect model and the random effect model have no significant difference. This is apparent in the Hausman test with Chi-square value $\chi^2 = 1.67$ and a $p$-value = 0.64, respectively. Thus, the random effect is preferred. The heteroscedasticity test further shows that shows that the model is both heteroskedastic and autocorrelated (see appendices). This is also evident in the probability values of $P < 0.00$. Findings from the random effects model as depicted in Table 5 presents a $R^2 = 0.09$. This implies that the explanatory variables account for only 9% of the changes in the dependent variable. This means that there are other factors outside the variables considered for this study are responsible for the changes in the dependent variable. Findings relating to the robust random effects regression model show that an insignificant relationship exists between corporate social environmental disclosure (CSEE) and stock price in Nigeria. This is evident in the probability value of ($p > 0.10; \beta = 0.43$). Conversely, findings as it relates to the second postulation for this study indicate that there is a significant positive difference between stock price of firms and firms across the industries. This is also evident in the values provided in Table 5 where market price per share is ($\beta = 3.32, p < .01$). In addition, the study observed that there was no significant difference between profitability and corporate social environmental disclosure (see Table 5 $\beta = 0.57, p > .10$). Furthermore, the Granger causality tests were conducted to test if a bi-directional relationship exists between CSEE and MPS. The results from Table 7 show that CSEE does not Granger cause MPS and likewise, MPS does not Granger cause CSEE, which also is in tandem with the results obtained from the panel regression analysis.

### 2.3.4. Analysis of variance

Furthermore, in another test of the second hypothesis of the study that states that all industries in Nigeria have equal market prices, the market price per share is compared across industries using the one-way analysis of variance (see Table 5). From Table 5, the $F$-statistic with a value of 3.151 and probability value of 0.001 show that the stock prices as captured by the market price per share of firms in Nigeria are significantly different.
CONCLUSION AND RECOMMENDATIONS

The study examined the relationship between corporate social and environmental expenditure and stock prices of firms in Nigeria. The study analyzed fifty (50) selected publicly quoted companies for the period 2011–2015 (based on the availability of annual reports). The study observed that corporate social environmental expenditure have no significant effect on the market prices of firms. The study also observed that the market price of firms (financial performance) does not affect corporate social and environmental expenditure. Hence, the investment decisions of shareholders in publicly quoted firms in Nigeria are not significantly influenced by the environmental and social activities of these companies. Interestingly, this outcome is consistent with the works of Venanzi (2012), Solomon, Oyerogba, and Olaleye (2014), Sukanya, Rebekah, and Yudhvir (2015). The insignificant results could be attributed to the low level of awareness of the importance of corporate social responsibility by most investors in the Nigerian market. They do not place high value on companies taking out of their resources to give back to the society, rather they would be more attracted to companies making high profit and probably paying a relatively high dividend. Consistent with the propositions of the stakeholder theory, there is a need for more awareness and education on the subject of corporate social and environmental performance of the firms as this could change the perspectives of investors to place high value on firms that consider the needs of all stakeholders most especially the society and environment where they operate rather than focusing on the shareholder group that are more inclined towards the profit motive of the firm. There is also the need for tougher regulations and sanctions by the government through regulatory bodies for organizations with poor environmental management practices.

LIMITATIONS/FUTURE RESEARCH

This study encountered limitations of which could serve as launching pads for future research works. Future studies could examine the relationship between disaggregated environmental practices and environmentally related competitiveness. This is against the backdrop of conflicting and contradicting findings (Priyanka, 2013). In addition, future research in this area could consider more years.

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