Effect of Board Diversity on Sustainability Reporting in Nigeria: A Study of Beverage Manufacturing Firms

Segun Idowu Adeniyi1*, Adeniyi Olubunmi Fadipe2

1 Department of Accountancy, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria
2 Department of Accountancy, Yaba College of Technology, Yaba, Lagos State, Nigeria

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Abstract: The study examines the effect of board diversity on sustainability reporting in Nigeria. The specific objectives of the study is to ascertain the effect of board size, board gender diversity and board independence on sustainability reporting among brewery manufacturing firms. The research employs ex–post facto design. Regression analysis was used for the panel data analysis in order to establish relationship between sustainability reporting and board diversity. The study discovered that board gender diversity does not significantly affect sustainability reporting. It is amazing that the number of women on board of directors is as low as one (1) while the number of man counterpart is ten (10) especially in Champion Brewery Nigeria Plc. However, the maximum number of females on board of directors among the sample companies is three (3). The study recommends that number of women on the board of directors in brewery manufacturing industry should be increased.

Keywords: board size, gender diversity, sustainability reporting.


Introduction

World Business Council for Sustainable Development (2002) describes corporate sustainability as the commitment of business to contribute to sustainable economic development, and to work with employees, their families, the local community and society at large to improve their quality of life. The contribution of manufacturing firms to the development and growth of Nigeria economy is high; yet there are many companies that suffer criticism for having created social and environmental problems within their hosting community. Stakeholders want firms to account for and disclosure the effect of their activities on the environments in which they are operating. This now necessitate the importance sustainability reporting (Ghani et al., 2018; Anazonwu et al., 2018).

Global Reporting Initiative (2011) defines Sustainability Reporting as the practice of measuring, disclosing, and being accountable to internal and external stakeholders for organizational performance towards the goal of sustainable development. The financial analysts, investors and other stakeholders are increasingly demanding information on financial and non-
financial performance of companies to enable potential investors and other stakeholders to take more rational and informed investment decisions. However, corporate governance is a mechanism to protect the interests of the business owner and other stakeholders (Widyansih et al., 2017; Honggowati et al., 2017). The definition of corporate governance therefore varies depending on one’s view of the world (Shahin & Zairi, 2007). Corporate governance basically consists of proper mechanisms that allow stakeholders to exercise control over management and aims to create an optimum balance among different economic, individual and social goals and increase transparency (Sharif & Rashid, 2014; Khan, 2009).

Currently, boards are increasingly seen as responsible for matters relating to sustainability reporting (Ingle, 2008). The board of directors of companies has the task to ensure that managers of corporations use the assets to maximize shareholders’ value. While there have been many studies conducted on board of directors, few have examined a board’s impact towards sustainability reporting. Furthermore, they have tended to focus only on the environmental aspects of sustainability, without considering the economic and social aspects (Oba & Fodio, 2012; Uwuigbe et al., 2011). Hence, this study will examine the effect of board diversity on sustainability reporting in Nigeria.

Chen & Jaggi (2000) discover a positive association between a firm’s mandatory financial disclosures and the proportion of independent nonexecutive directors. Eng & Mak (2003) result on the other hand indicated that non-mandatory disclosure in Singapore is significantly and negatively associated with percentage of independent directors. Oba & Fodio (2012), examined how board characteristics interact with the quality of environmental reporting and concluded that all the investigated board dynamics (size, independence, gender, composition and foreign directors) except for gender mix were ascertained to have significant impact on environmental reporting; their study also identified an inverse relationship between board size and environmental reporting.

Ngwube (2013) examines corporate governance principles success in an organization. Some of the principles examined are; transparency in the organization, sound whistle blowing system, balance in power, formal and periodic evaluation of the CEO, formal and periodic evaluation of directors, strong market institution, external regulation and monitoring, disclosure of compensation policies and practices, open and well implemented conflict of interest policy and condor between executives of a firm and staff. Based on these, Ngwube (2013) in his work concluded that the adoption of corporate governance principles in an organization is a huge step toward creating safeguards against corruption and mismanagement.

Mgbame & Onoyase (2015) examine the effect of corporate governance on environmental reporting. The study makes use of board size, board independence, and audit committee independence to proxy for corporate governance. Their study show that board size, board independence, audit committee independence and managerial ownership concentration have positive and significant relationship with environmental reporting.

Uwuigbe et al. (2011) study the effect of board size and board composition on firms’ corporate environmental disclosure among selected firms in Nigeria. The study tests whether board size and board composition has any association with the level of firms’ corporate environmental disclosure in annual reports. Their study reveals that while board size has a significant negative relationship with the level of corporate environmental disclosure; board composition on the other hand has a significant positive relationship with the level of firms’ corporate environmental disclosure in the annual report.

Recent developments in economic theory suggest that the board of directors is an important part of a company’s corporate governance structure (Fama & Jensen, 1983). The board of directors has a major impact on a company’s reporting practices and procedures (Fama & Jensen, 1983; Keasey & Wright, 1993). Consequently, many recent studies have identified a
significant correlation between the composition of a company’s board of directors and the quality sustainability reporting of their organizations (Michelon & Parbonetti, 2012; Rao et al., 2012; Rupley et al., 2012).

While there have been many studies conducted on board of directors, few have examined a board’s impact towards sustainability reporting. Furthermore, they have tended to focus only on the environmental aspects of sustainability, without considering the economic and social aspects (Oba & Fodio, 2012; Uwuigbe et al., 2011). Hence, this research addresses this gap to explore the impact of the composition of a company’s board of directors that is an important corporate governance mechanism on company’s sustainability reporting practices.

Methods

The population of this study consists of all brewery manufacturing firms listed on Nigeria Stock Exchange that have complete annual and financial reports on their websites or Nigeria Stock Exchange for the period of 2015 and 2016. As at 31st December 2016, five (5) firms were listed, out of the number; only four (4) firms have their financial statements available either on their website or in the office of Nigerian Stock Exchange. Accordingly, the population of the study consists of the four (4) firms that satisfy the criterion. In view of the availability of data for all the firms, the study adopted all the firms as sample population. Secondary data was used for the study. The sources of data include annual reports and accounts of companies selected for this study.

Regression analysis was used for the panel data analysis in order to establish relationship between sustainability reporting and board diversity. The assumption is that, the dependent variable is a linear function of independent variables.

The model used to empirically test the hypotheses formulated is as follows:

\[ SUSR_{it} = \beta_0 + \beta_1 BZE_{it} + \beta_2 GDIV_{it} + \beta_3 BIN_{it} + \epsilon_{it} \]

Where:
- \( SUSR \) = sustainability reporting
- \( BZE \) = board size
- \( GDIV \) = gender diversity
- \( BIN \) = board independence
- \( \beta_0 \) = constant
- \( \beta_1, \beta_2, \beta_3 \) = coefficients of the explanatory variables
- \( \epsilon_{it} \) = error term over cross section and time

Independent variables are: board size, gender diversity and board independence. Board size is the total number of directors on the board of a company. Gender diversity is the percentage of female directors to the total number of directors on the board of a company. Board independence is the percentage of independent directors to the total number of directors on the board of a company. Dependent variable is sustainability reporting.

There are two widely used approaches to developing disclosure scoring scheme to determine the disclosure level of a corporate annual report i.e., weighted and unweighted approach. Unweighted approach has been used in the study to score items included in index by considering the equal important for all items of information. Under this approach, a dichotomous procedure is adopted in which an item scores one if it is disclosed and zero if it is not disclosed. In this way, we can add up all the items disclosed by the company. The following formula is used to measure the total sustainability reporting score for a company:
\[
\sum_{d=1}^{n} dt
\]

Where:
\[
d = 1 \text{ if a disclose-able item is disclosed, } 0 \text{ if that item is not disclosed}
\]
\[
n = \text{ number of disclose-able items.}
\]

**Results and Discussion**

The result of the descriptive statistics showing the mean, standard deviation and the minimum and maximum values of this study’s variables is summarized in Table 1.

**Table 1 Descriptive Statistics of Variables**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainability Reporting</td>
<td>4</td>
<td>25.00</td>
<td>86.00</td>
<td>52.750</td>
<td>25.74717</td>
</tr>
<tr>
<td>Board Size</td>
<td>4</td>
<td>11.00</td>
<td>17.00</td>
<td>14.250</td>
<td>2.50000</td>
</tr>
<tr>
<td>Gender Diversity</td>
<td>4</td>
<td>0.11</td>
<td>0.21</td>
<td>0.1625</td>
<td>0.04992</td>
</tr>
<tr>
<td>Board Independence</td>
<td>4</td>
<td>0.50</td>
<td>0.66</td>
<td>0.5825</td>
<td>0.07932</td>
</tr>
<tr>
<td>Valid N (Listwise)</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The result in the Table 1 gives an insight on the nature of the variables used in this study. Sustainability reporting of the Brewery industry for the period of 2013–2016 ranged from 25.00 to 86.00 and with the average value of the dependent variable of 52.75 and the standard deviation of 25.75. It shows that on average, 52.75 of the observations report their corporate social responsibility in their annual and financial reports. It shows that the minimum sustainability reporting is 25.00 and the maximum sustainability reporting is 86.00.

The board size of sampled companies varies as the minimum board size is 11 while maximum is 17 respectively. The women representative on the board of directors varies as the minimum is 11% while the maximum is 21%. The implication for gender diversity is that women representation on the board of sampled population is between 11% and 21%, while the standard deviation is 0.049. Concerning board independence, the minimum percentage of independent director on the board of sampled firms is 50% while the maximum is 66% and with the standard deviation of 0.079.

**Table 2 Board Size on Sustainability Reporting**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Sig. F Change</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.905</td>
<td>.819</td>
<td>.728</td>
<td>13.421</td>
<td>.095</td>
<td>2.493</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), board size
b. Dependent Variable: sustainability reporting

**Table 3 ANOVA Result: Board Size on Sustainability Reporting**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regression</td>
<td>1</td>
<td>1628.481</td>
<td>9.040</td>
<td>.095</td>
</tr>
<tr>
<td>1</td>
<td>Residual</td>
<td>2</td>
<td>180.135</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>3</td>
<td>1988.750</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: sustainability reporting
b. Predictors: (Constant), board size
Board size explains 72.8 percent (Table 2) of variation experienced in sustainability reporting level of the selected firms. This result shows that there is no significant relationship between board size and sustainability reporting. The F value is 9.040 (Table 3) shows that the independent variables (board size) are not the major determinants in explaining sustainability reporting.

The independent variables are statistically insignificant because its significance value is 0.95, that is \( p > 0.05 \) (Table 3). So, the null hypothesis is accepted while alternative hypothesis is rejected. Therefore, there is no significant relationship between board size and sustainability reporting. Based on the analysis, the alternate hypothesis \( (H_1) \) is rejected while the null hypothesis \( (H_0) \) is accepted; which state that there is no significant relationship between board size and sustainability reporting.

\[ \text{Table 4 Gender Diversity on Sustainability Reporting} \]

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Sig. F Change</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.887&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.786</td>
<td>.679</td>
<td>14.58685</td>
<td>.113&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.346</td>
</tr>
</tbody>
</table>

<sup>a</sup> Predictors: (Constant), gender diversity  
<sup>b</sup> Dependent Variable: sustainability reporting

\[ \text{Table 5 ANOVA Result: Gender Diversity on Sustainability Reporting} \]

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1563.197</td>
<td>1</td>
<td>1563.197</td>
<td>7.347</td>
<td>.113&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>1</td>
<td>Residual</td>
<td>425.553</td>
<td>2</td>
<td>212.776</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1988.750</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Dependent Variable: sustainability reporting  
<sup>b</sup> Predictors: (Constant), gender diversity

\[ \text{Table 6 Board Independence on Sustainability Reporting} \]

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Sig. F Change</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.976&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.952</td>
<td>.928</td>
<td>8.92085</td>
<td>.024&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.438</td>
</tr>
</tbody>
</table>

<sup>a</sup> Predictors: (Constant), board independence  
<sup>b</sup> Dependent Variable: sustainability reporting

\[ \text{Table 7 ANOVA Result: Board Independence on Sustainability Reporting} \]

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1892.954</td>
<td>1</td>
<td>1892.954</td>
<td>39.520</td>
<td>.024&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>1</td>
<td>Residual</td>
<td>95.796</td>
<td>2</td>
<td>47.898</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1988.750</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Dependent Variable: sustainability reporting  
<sup>b</sup> Predictors: (Constant), board independence

Gender diversity explains 67.9 percent (Table 4) of variation experienced in sustainability reporting level of the selected firms. This result shows that there is no significant relationship between gender diversity and sustainability reporting. The F value is 7.347 (Table 5) shows that the independent variables (gender diversity) are not the major determinants in explaining sustainability reporting.

The independent variables are statistically insignificant because its significance value is 0.113, that is \( p > 0.05 \) (Table 5). So, the null hypothesis is rejected while alternative hypothesis is
accepted. Therefore, there is no significant relationship between gender diversity and sustainability reporting. Based on the analysis above, the alternate hypothesis (H1) is rejected while the null hypothesis (H0) is accepted; which state that board gender diversity does not significantly affect sustainability reporting.

Board independence explains 92.8 percent (Table 6) of variation experienced in sustainability reporting level of the selected firms. This result shows that there is significant relationship between board independence and sustainability reporting. The F value is 39.520 (Table 7) shows that the independent variables (board independence) are the major determinants in explaining sustainability reporting.

The independent variables are statistically significant because its significance value is 0.024, that is p < 0.05 (Table 7). So, the null hypothesis is rejected while alternative hypothesis is accepted. Therefore, there is significant relationship between board independence and sustainability reporting. Based on the analysis above, the alternate hypothesis (H1) is accepted while the null hypothesis (H0) is rejected; which state that there is significant relationship between board independence and sustainable reporting.

Conclusions

Based on the find of the study, the study conclude that board size of sample firms varies from 11 members to 17 members; this may be attributed to firm size. However, the board size does not have significant effect on sustainability reporting because p > 0 among the sample firms. It shows that the numbers of board members does not influence management decision in practicing sustainability reporting.

It is amazing that the number of women on board of directors is as low as one (1) while the number of man counterpart is ten (10) especially in Champion Brewery Nigeria Plc. However, the maximum number of females on board of directors among the sample companies is three (3). It shows that there is no significant relationship between gender diversity and sustainability reporting among the sample population.

Board independence among sample firms does have significant effect on sustainability reporting. We thought, the numbers of non-executive directors do help them to have significant influence on sustainability reporting in their organization.

Based on the above conclusion, we recommend among other things that competent board members, based on company size, should be selected as board members by shareholders and stakeholders to pilot the affairs of the organization. It is important to note that large board size is more versatile than a smaller one because they have expertise from various fields of expert.

On gender diversity, women participation on the board of directors should be encouraged as much as practicable. Women opinion on the board of directors may be more beneficial to the organization than men opinion. Let us give women chance on the board of directors in brewery manufacturing industry. This study is limited to brewery industry listed on Nigeria Stock Exchange. Therefore, it is suggested that further research be conducted on the same topic with different sectors.

References


