Do age and size of companies affect female directors on boardrooms?

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ABSTRACT

Gender diversity on boards is one of the attributes of good corporate governance practices. Male directors over the years have continued to dominate boards of corporate bodies. Our study is aimed at exploring the impact of older and matured companies on female directors on the boards. The study employs data of companies listed on the main floor of the Nigerian Stock Market from 2012-2016. The study segregated the sampling period into pre and post mandatory periods of the SEC code. Findings from the study revealed that throughout the periods, age of company is positive and significant. In the pre-mandatory period, size of company is negatively significant. During the post-mandatory and the entire sample period, size of company was found to be positively associated with female directors. This implies that fear of greater liabilities from the oversight body and public outrage have encouraged larger companies to have divergent boards in terms of gender.

Keywords: Female director, age of company, size of company, and boardrooms

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INTRODUCTION

Male directors have ever since been the dominant individuals on corporate boards globally. In its initiatives, the Securities and Exchange Commission (hereafter SEC Nigeria) requires companies, through the code of corporate governance in 2011, to have mixed boards comprising male and female directors. However, Idris and Usman (2021) have noted that there are several corporations with no female director(s) on their boards. Prior statistics has attested to this claim that out of 138 companies, only 24 hire at least a woman in their boards (Deloitte, 2019) which is approximately 17.4%. This can affect the Nigerian market and negate both potential and existing investors, particularly those that are gender sensitive, from making investments.

To strengthening this code issued in 2011, the SEC reviewed the status of the code from voluntary to mandatory compliance in 2014. This was because evidence from corporate governance review has shown that women directors provide important resources to companies (Issa et al., 2021). Women on boards, offer variety of resources such as perspectives, ideas, and skills; thereby resulting to improved board decisions (Reddy & Jadhav, 2019) and safeguarding the interests of shareholders through more effective monitoring of management (Adams & Ferreira, 2009; Choy et al., 2011; Groening, 2019). Moreover, Khaw and Liao (2018) documented strong evidence on the role of women on boards in weakening corporate risk taking.

This is why some countries around the world have specific proportions of women expected to be on the boardrooms of corporations. According to Khaw and Liao (2018), one of the first countries to record this achievement is Norway where it is stipulated that every listed company should have not less than 40% of women representation on their boards. Other markets, for instance Austria, allocated 30% of the board membership to women while France set aside 20-40% (Mordi & Obanya, 2014). In Nigeria, although such a quota is not obtainable, the SEC emphasised that every company should have a gender diverse board. However, the absence of a specific quota as done elsewhere in the world may be inadequate in Nigeria where 49% of its population are women (Sotola, 2019). Moreover, the study pointed out that the number of women on Nigerian board rooms between 2016 and 2019 was 16.8% compared to 17.8% in Ghana, 19.8% in Kenya, 20% in South Africa, and 30% in Rwanda. From this statistics, Nigeria has the lowest engagement of women in corporate activities (Idris & Usman, 2021). It is not clear as to what determines lower or higher engagement of women on corporate boards. Hence, this study focuses on the determinants of women directors in companies listed on the main floor of the Nigerian Stock Exchange (hereafter, NSE) market.

The current study differs from previous studies because it is one of the initial sets of studies that explored the determinants of women on boardrooms after the status of the SEC code was revised in 2014 from voluntary to mandatory compliance.
between periods. This provides more light on whether revision of the status code matters with respect to gender diversity on the boards of listed companies.

The remainder of the paper is organised as follows. Section two provides literature review and hypotheses development. Section three depicts the methodology used in the paper, while section four provides the results and discussion of findings and section five concludes.

2. THEORETICAL FRAMEWORK AND REVIEW OF LITERATURE

Institutional theory is increasingly being used as a theory to explain findings in gender related studies (Grosvold et al., 2016; Saeed et al., 2016; Thams et al., 2018). Hence, the findings of this study are underpinned by the institutional theory. The theory, according to Thams et al. (2018), elucidates how practices that fit the environment are enforced. Scott (1995) indicates that institutional environment encompasses economic, political, and social systems. Companies are surrounded by these systems which in turn grant them legitimacy in their operations; thus, reshaping the behaviour of the corporate body in terms of hiring directors, particularly women, on board. Therefore, it is not surprising that many countries around the world set aside quotas for women on the board of corporations like the 40% in Norway, and between 25-40% in Finland, Spain, Sweden and the UK (Khaw & Liao, 2018).

There are factors that affect companies’ decisions in hiring female directors and generally constituting their board membership. For instance, socio-economic laws and the institutional constituents’ attitudes may influence firms’ decisions in hiring female directors. In most developing markets, these factors are weak (Saeed et al., 2016). Kanter (1978) notes that uncertainty in business operations tends to be the main course of male dominated boards. Thus, existing environmental settings may greatly influence the tendencies of having either a male dominated or a mixed board (Saeed et al., 2016) particularly in large and older companies as they may not have waivers from the regulatory bodies. La Porta et al. (2000), in their study, opine that companies’ decisions are motivated by the institutional environment; for instance, the dividends paid in markets with very good investor protection rights are higher than in markets with poor investor protection rights.

**Age of the company**

The age of a company is regarded as one of the features that could trigger the appointment of women on the boardroom. Pusic (2020) has identified firm’s age as the key that improves the glass ceiling of entities. Older firms, according to theory, are more likely to introduce women directors or change management styles and directors’ hiring (Pfeffer & Salancik, 1978). However, having a diverse board is considered as a good corporate governance practice. Hence, firms may hire female directors, particularly older companies, to protect their image and secure more advantages in society. Bianco et al. (2015) argue that a diverse board is stronger in management behaviour monitoring. This is because a diverse board may result to different perspectives and standpoints regarding the board’s oversight role.

Although records on the relationship between females on boardrooms and companies’ age is scarce, evidence from US companies as documented by Hillman et al. (2007) and Gul et al. (2011) indicate that the tendency of recruiting female directors is more prevalent in older companies than younger ones. From the same US market, Thams et al. (2018) also report a positive relationship between female directors and firms’ age. More recently, evidence from the Chinese market has suggested that the age of companies and women directors are positively associated and significant. This confirms prior studies that older companies have greater tendencies of hiring female directors; thus, resulting to heterogeneous board membership. In this regard, we state that:

H1: The age of a company is positively associated with women directors.

**Size of the company**

Empirically, the size of a company affects presence of women directors on its board (Abdullah, 2014; Du, 2014). Recent studies (Pusic, 2020; Saeed et al., 2018) have found a positive and significant association between the size of companies and women directors. The finding is also in line with prior international evidence (Saeed et al., 2016). The results imply that larger companies may have a greater number of women on their boards. In the same vein, Ahmed et al. (2018) and Wawryszuk-misztal (2021) from Australian and Polish markets respectively also report a positive relationship between companies’ size and women directors on their boards. Thus, this is consistent with the institutional theory that societal pressure influences the appointment of women as directors on corporate boards. This is because the visibility of larger companies in the operational society becomes greater compared to smaller companies. Furthermore, various stakeholders may be monitoring the activities of these larger corporations and thus, may influence their operations towards having women on their boards. In congruence with previous studies therefore, we state that:

H2: The size of a company is positively associated with women directors.
3. METHODOLOGY

The study employed data from secondary sources. In line with previous literature (Abdullah, 2014; Saeed et al., 2016), the study used the non-financial companies listed on the NSE’s main floor for five (5) years from 2012-2016. This period was chosen because the SEC code was issued in 2011 and later upgraded in 2014. Hence, this will allow the study to examine the pre and post mandatory effects of the code. Table 1 presents the sampling selection procedures. From the total of 170 listed companies on the NSE market, 55 financial companies were excluded. Furthermore, 9 firms from other floors of the market and 14 delisted companies were also not included. Lastly, 9 firms with incomplete data were also deleted; bringing the final sample of the study to 83 companies or 415 firm-year observations. The financial data used in the study were collected from Data-stream database while corporate governance data was manually extracted from the annual reports and websites of the sampled companies.

Table 1: Distribution of sample

| Firms listed on Nigerian Stock Exchange market | 170 |
| Financial Services firms | 55 |
| Firms from other 9 floors of the market | |
| Delisted firms | 14 |
| Firms with incomplete records | 9 |
| Final sample | 83 |
| Number of years | 5 |
| Firm-year observations | 415 |

Variables measurement

Following (Abdullah, 2014; Idris et al., 2019a, 2019b; Saeed et al., 2016), we measured our dependent variable, board gender diversity, as the number of female directors on the board divided by the total number of directors sitting on the board. With respect to the independent variables of interest – age of company – It was calculated as the number of years since listing and this is consistent with prior evidence (Idris et al., 2019b). The logarithm of the companies’ total assets was used to calculate the size of companies (Du, 2014; Saeed et al., 2016). We followed previous studies to control the performances of the firms which are ‘proxied’ by profit before taxes, divided by total assets (Abdullah, 2014; Saeed et al., 2016). Following (Ahmed et al., 2018; Saeed et al., 2016), debt level was calculated as the total debt to total assets. Lastly, the natural logarithm of the number of directors was used for board size measurement (Khaw & Liao, 2018). We tested our hypotheses using the following model:

\[ \text{Gender diversity} = f(\text{age of company}; \text{size of company}; \text{controls}; \text{Error}) \]

This study used panel data. The panel has a large number of firms with number of time periods (that is N>T). Therefore, this type of data may pose some issues that include heteroskedasticity, autocorrelation and cross sectional dependence while estimating a suitable model for the analysis. To overcome these issues, we employed Panel Corrected Standard Error (PCSE) as suggested by Beck (2001) and Beck & Katz (1995) to estimate our regression model. Prior studies have established the robustness of PCSE estimation (Beck, 2001; Coffie et al., 2018; Mohammed et al., 2020; Montalvan et al., 2017).
4. RESULTS AND DISCUSSION

Descriptive statistics
Table 2 depicts the results of mean statistic and correlation matrix. The mean value of female directors on boards is 11.9% of the sample which is higher than 8.8% (Idris et al., 2019b) from Nigeria and 8.4% (Saeed et al., 2016) from some emerging markets. The average age of the data set of this study is 22 years; slightly younger than 26 years (Saeed et al., 2016) and 38 years (Pusic, 2020). The mean value of size of company is 7.1 which is slightly higher than those reported from other emerging markets (Saeed et al., 2016). For the current study, the average ROA is 6.2% while study from Malaysia (Abdullah, 2014) is 11%. Hence, Malaysian companies are more profitable than Nigerian companies. The average board size is 8 directors sitting on a board. This value is almost similar to those reported by Idris et al. (2019a).

Table 2: Descriptive statistics and correlation matrix

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Kurtosis</th>
<th>Skewness</th>
<th>BDS</th>
<th>BGD</th>
<th>GE</th>
<th>CLE</th>
<th>CLE</th>
<th>BDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BGD</td>
<td>0.119</td>
<td>2.154</td>
<td>0.443</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGE</td>
<td>22.053</td>
<td>1.412</td>
<td>-0.031</td>
<td>0.115*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSZ</td>
<td>7.181</td>
<td>2.689</td>
<td>0.337</td>
<td>0.073</td>
<td>0.083</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>0.062</td>
<td>3.348</td>
<td>-0.070</td>
<td>0.215***</td>
<td>0.000</td>
<td>0.267***</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLE</td>
<td>0.547</td>
<td>1.000</td>
<td>-0.004</td>
<td>-0.001</td>
<td>0.232***</td>
<td>0.082</td>
<td>-0.201***</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>BDS</td>
<td>8.592</td>
<td>2.402</td>
<td>0.112</td>
<td>0.030</td>
<td>0.131**</td>
<td>0.400***</td>
<td>0.071</td>
<td>-0.064</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note: BGD= board gender; CGE = age of company; CSZ = size of company; ROA = return on assets; CLE = Company leverage; BDS = Board size. *, **, *** are significant at 10%, 5% and 1%, respectively.

The study used Kurtosis and Skewness to examine the normality of the data and the result is presented in Table 2. First, the Kurtosis results show value ranges between ±1.000 and ±3.348. Although the Kurtosis result of return on assets (ROA) is a bit higher than the threshold, this may not harm the final result (Muniandy & Hillier, 2015) particularly when the sample size is moderately large. This suggests that the data is normally distributed. It has been established in the literature (Gujarati, 2004; Hair et al., 2012) that values of Skewness above ±1.96 could result in abnormal distribution of the data. Moreover, from Table 2, there is Skewness within the range of -0.070 to 0.443.

On the other hand, with abnormally distributed data, Zikmund (2003) argues that based on Central Limit Theorem, when the size of the sample used in a study rises, it is expected that the data tends to be normally distributed.

The correlation matrix is also depicted in Table 2. From these results, there are no values that are extremely high among the independent variables that may lead to multicollinearity issue. Hence, we have less concern about multicollinearity in the regression model.

Multivariate analysis
We estimated three models to test our hypotheses using Corrected Standard Error (PCSE) regression and the results are depicted in Table 3 in columns 1 to 3. Column 1 provides the results for the pre mandatory period (2012-2014). Column 2 shows the results of the post mandatory period (2015-2016); while in column 3, the results of all the periods (2012-2016) are provided.

In all the estimates in Table 3, column 1 to 3, age of company is positive and statistically significant and therefore, consistent with our hypothesis. This indicates that irrespective of the corporate governance regime, older firms may constitute a gender diverse board. Thus, this finding concurs with the previous studies (Gul et al., 2011; Hillman et al., 2007; Khidmat et al., 2022; Thams et al., 2018) that older companies are more likely to have female directors on their boards. The result is also in agreement with the argument that older companies have more diverse boards than younger ones. More so, firms may benefit from having diverse boards in terms of monitoring the management, securing required resources, and establishing sustainable links with the society.

Table 3: Regression results

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CGE</td>
<td>0.000612***</td>
<td>0.00225***</td>
<td>0.00126***</td>
</tr>
<tr>
<td></td>
<td>(0.000219)</td>
<td>(6.09e-05)</td>
<td>(0.000322)</td>
</tr>
<tr>
<td>CSZ</td>
<td>-0.0229***</td>
<td>0.00541***</td>
<td>0.00996*</td>
</tr>
<tr>
<td></td>
<td>(0.00369)</td>
<td>(0.00177)</td>
<td>(0.00551)</td>
</tr>
<tr>
<td>ROA</td>
<td>0.244***</td>
<td>0.213***</td>
<td>0.224***</td>
</tr>
<tr>
<td></td>
<td>(0.0622)</td>
<td>(0.0328)</td>
<td>(0.0558)</td>
</tr>
<tr>
<td>CLE</td>
<td>-0.0342*</td>
<td>0.0234***</td>
<td>-0.00940</td>
</tr>
<tr>
<td></td>
<td>(0.0198)</td>
<td>(0.00644)</td>
<td>(0.0167)</td>
</tr>
<tr>
<td>BDS</td>
<td>-0.0177</td>
<td>-0.0604***</td>
<td>-0.0340*</td>
</tr>
<tr>
<td></td>
<td>(0.0173)</td>
<td>(0.00732)</td>
<td>(0.0189)</td>
</tr>
<tr>
<td>Year control</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry control</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Constant</td>
<td>0.288***</td>
<td>0.155***</td>
<td>0.215***</td>
</tr>
<tr>
<td></td>
<td>(0.0446)</td>
<td>(0.0134)</td>
<td>(0.0436)</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.167</td>
<td>0.245</td>
<td>0.181</td>
</tr>
<tr>
<td>Observation</td>
<td>249</td>
<td>166</td>
<td>415</td>
</tr>
</tbody>
</table>

Note: BGD= board gender; CGE = age of company; CSZ = size of company; ROA = return on assets; CLE= Company leverage; BDS = Board size. Standard errors are in parentheses *, ** and *** are significant at 10%, 5% and 1%, respectively.
Our second variable of interest is size of company. It is interesting that from the regression result in Table 3, size of company, is inconsistent across the periods. Firstly, in the pre mandatory period (2012-2014) as shown in Table 3 column 1, the association of size of company and female directors is negative and significant. The result indicates that larger companies have only tended to have diverse boards since the status of the Nigerian corporate governance was revised from voluntary to mandatory compliance. This could be as a result of the fact that these companies paid little or no prices when they failed to comply with the Nigerian corporate status’ provisions in relation to gender diversity.

Second, the results in columns 2 and 3, consistently show that size of the company is positive and significant in the post mandatory period (2015-2016) and the entire period (2012-2016). This means that the more companies continue to grow and become larger, the more the companies are likely to have female directors on their boards. The result is in line with our second hypothesis and with prior findings (Abdullah, 2014; Ahmed et al., 2018; Pusic, 2020; Saeed et al., 2016, 2018; Wawryszuk-misztal, 2021) that the larger the companies, the more the tendency of having a divergent board represented by female directors. Additionally, having a divergent board in terms of gender is a good practice. This may reduce the tendencies of public outrage and the imposition of liabilities by the regulatory and the corporate governance oversight bodies. Thus, evidence supports the institutional theory that corporate boards are likely to succumb to societal pressure by hiring female directors.

Regarding our control variables, return on assets is positive and statistically significant in the three estimations. This agrees with prior evidence (Pusic, 2020; Saeed et al., 2016). Company leverage is, however, inconsistent between the periods. In the pre and post mandatory periods, negative and positive results are observed respectively. Lastly, contrary to our expectation, board size is negative across all the periods and statistically significant in the post mandatory period and for the entire periods. Hence, the finding contradicts the findings of the previous studies (Hillman et al., 2007; Saeed et al., 2016).

Additional analysis
We conducted additional analysis, to evaluate the robustness of the results. In agreement with the previous studies, we replicated the model by using logit regression. We dichotomised the dependent variable using the sample median. 1 if the ratio of the female director is higher than the sample median and 0 otherwise. The results are presented in Table 4. A significant and positive relationship between age of company and female directors is also observed as documented in the earlier estimation reported in Table 3.

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre mandatory period</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post mandatory period</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All periods (2012-2014)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All periods (2015-2016)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: BGD = board gender and measured as 1 if the ratio is higher than the sample median otherwise 0; CGE = age of company; CSZ = size of company; ROA = return on assets; CLE = Company leverage; BDS = Board size. Standard errors are in parentheses *, ** and *** are significant at 10%, 5% and 1%, respectively.

Results from the second variable of interest – size of company – remains intact as revealed in Table 3; except in the whole period (2012-2016). The association became insignificant, but the sign remains as found previously in Table 3. Summarily, the results of the two variables of interest are qualitatively the same.

5. CONCLUSION
Gender diversity on corporate boards has been a topical issue among researchers and policy makers globally. Many corporate governance codes, particularly in development markets, have introduced a requirement for a minimum quota of females on boards of corporate bodies while in other markets like Nigeria, listed companies are required to have heterogeneous boards in terms of gender. This study investigated how the age and size of companies influence gender diversity in the Nigerian market. The results from the analysis have revealed that older firms and larger firms have greater chances of having female directors on their boards with reference to the post mandatory and whole periods. The results subsisted when logit regression was employed to test their robustness. The implication of this finding is that SEC code is important for older and matured companies after the status of the code was revised from voluntary to mandatory compliance and that stipulating a quota will improve board diversity in relation to women directors. The study also adds to the institutional theory that institutional pressures have greater effects on hiring women on corporate boards.

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