Corporate Board Characteristics and Financial Reporting Time Lines of Distress Likelihood Zone Firms in Nigeria

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Abstract

Literature is replete with copious studies on the relationship between board characteristics and financial reporting timeliness of corporate firms in both developed and developing countries. However, studies that have explored this relationship using distress likelihood zone firms are sparse. Therefore, this study seeks to provide empirical evidence as to whether the time interval between when corporate financial reports are produced and when they are published is connected to distress likelihood zone firms while exploring the extent to which corporate board characteristics like board size, board independence, board gender diversity and board diligence influence the financial reporting timeliness of the firms. Based on data extracted from the audited annual reports of 20 distress likelihood zone non-financial firms listed on the Nigerian Exchange Group (NGX) for the period 2011 to 2020, determined using Altman Z-score Model, results of the random effect regression model revealed that both board independence and board diligence exert positive and significant influence on the financial reporting timeliness of the Nigerian firms investigated. However, the regression model did not produce similar results for board size and firm size as both variables exert a negative influence on the timeliness of financial reporting of the firms. Unexpectedly, the study did not provide evidence to support the general belief that board gender diversity can reduce time taken by firms to release financial reports given the conservative and risk-averse nature of the female gender regarding decision-making. Hence, we recommend optimal increase in the number of independent directors and female board representation to guarantee board effectiveness, improved firm performance and timely publication of financial reports amongst the Nigerian firms investigated.

Keywords: Distress Likelihood Zone Firms. Financial Reporting Timeliness, Financial Report, Board Characteristics

1. Introduction

The upsurge in the information needs of various stakeholders interested in corporate financial reporting has led to the demand for timely and reliable financial reports. The timeliness of financial reports is one of the features of a good financial reporting system. It is essential that financial reports are made available to decision makers as quickly as possible as they become less useful for decision making with the passage of time. In developing economies including Nigeria, the production and publication of timely corporate reports is very
Financial reporting timeliness is a concept that is very vital to numerous users of accounting information because it is connected to corporate transparency. It is the timely release of annual financial returns that have crucial as other sources of information like financial analysts' forecasts and press releases are not as developed and reliable as in the developed countries of Europe and America (Ahmed, 2003).

Leventis, Weetman and Caramanis (2005) affirmed that financial reporting timeliness assumes great importance in developing and newly developed capital markets in which the audited financial report is the only main source of reliable accounting information for investors and other relevant stakeholders. Ideally, interested stakeholders are expected to obtain and use the financial reports at the end of the year (Akrokerere & Ighoroje, 2022). However, this is hardly the case because of the time lag within which to prepare and have them audited by external auditors. Therefore, factors responsible for financial reporting timeliness can be seen as being firm-related, auditor-related and governance-related (Durand, 2019).

Financial reporting timeliness is described as the period from a firm’s year-end date to the audit report date. The shorter the time it takes corporate firms to release audited financial reports, the better the usefulness of the reports and benefits that users can get from relying on them (Abdullah, 1996; Akrokerere & Osuwwe-Okoroyibo, 2023). Besides, timely release of financial information enhances pricing of securities, eases the adverse effects of insider trading activities and helps drive transparency and trustworthy environment within the capital markets (Owusu-Ansah, 2000). Contrariwise, untimely release of financial report will cause the accounting information to lose its usefulness in the sense that as financial reporting delay increases, the decisions and actions of both existing and potential investors will be affected (Ahmad & Kamarudin, 2003). Moreover, financial reporting delay may encourage some dishonest investors to acquire expensive insider information and exploit it at the expense of the less informed investors (Bamber, Bamber, & Schoderbek, 1993).

Several prior studies have investigated the relationship between corporate board characteristics and financial reporting timeliness using firms domiciled in both developed and developing countries (Al Daoud, Ismail, & Lode, 2015; Asiriuwa, Adeyemi, Uwuigbe, Uwuigbe, Ozordi, Erin & Omoike, 2021; Basuony, Ehab, Mostaq, & Omar, 2016; Nguyen, Le, & Tran, 2021; Umar, Irfan, Muhammad & Ijaz, 2018; Singh & Sultana, 2011). However, to the best of our knowledge, studies that have explored this relationship using distress likelihood zone firms are sparse. In Nigeria, apart from one study that was carried out by Eguavoen, Ugbogbo, Kadiri (2022), no other study, till now, has followed the lead of these authors. This is somewhat inexplicable given the steady increase in the number of corporate firms struggling to survive in Nigeria. Additionally, research has shown that most firms in Nigeria, especially the non-financial ones hardly publish their financial reports within the required 90 days (Efobi, & Okougbo, 2014; Oraka, Okoye, & Ezejiofor, 2019). According to Altman, Sabato, and Wilson (2010), late filing of financial reports is a deliberate managerial decision of firms facing financial difficulties that want to avoid publishing unfavourable accounting information.

It is against the backdrop of the above that this study seeks to determine whether the time interval between when corporate financial reports are produced and when they are published is connected to distress likelihood zone listed non-financial firms in Nigeria while exploring the extent to which corporate board characteristics like board size, board independence, board gender diversity and board diligence influence the financial reporting timeliness of the firms. The remainder of the paper is organized as follows: Section 2 presents the review of literature and hypotheses development. Section 3 reviews the theoretical framework upon which the study is anchored, the research design, and modelspecification. Next, Section 4 focuses on data estimation techniques and discussion findings. While Section 5 concludes the study with some policy recommendations.

2. **Literature Review and Hypotheses Development**

2.1 **Concept of Financial Reporting Timeliness**

Financial reporting timeliness is a concept that is very vital to numerous users of accounting information because it is connected to corporate transparency. It is the timely release of annual financial returns that have
undergone an audit (Oladipupo & Ilaboya, 2013). Publishing financial reports as early as possible is a good sign for healthy financial markets (Okaiwele, 2018). Both the International Accounting Standards Board (IASB) and Financial Accounting Standards Board (FASB) recognise timeliness as one of the characteristics which determine the relevance of accounting information. Users need timely financial reports to review and decide whether to continue or stop investing in a firm. As opined by Ismail and Chandler (2003) and Ogoun, Edoumiekumo and Nkak (2020), delays in disclosing accounting information by corporate firms would result in greater market inefficiency.

Timeliness, according to Oranefo (2022) and Zaitul (2010), can be discussed from three perspectives. First, preliminary lag which is the time interval between the closing reporting (statement of financial position) date and the date the annual general meeting notice is given; second, audit report lag which is time interval between the end of the financial year and date the auditor’s report is signed; and third, total lag which is the days’ interval between the closing reporting date and date of the annual general meeting. For the purpose of this study, we define financial reporting timeliness as the number of days between the accounting year-end of the firm and the date in which auditors’ report is submitted.

The timing of publication of the financial reports varies across countries (Efobi, & Okougbo, 2014; Oraka, Okoye, & Ezejiofor, 2019). Different reasons could account for this timing difference, including country-wide legislations, and firms deliberate actions to delay releasing unfavourable information if they perceive that timely release could affect their chances of getting external financing. Givoly and Palmon (1982) declared that some firms may delay the reporting of losses so as not to jeopardise their chances of obtaining more external financing. Ajinkya, Bipin, Sanjeev Bhojraj, and Sengupta (2005) stressed that firms making losses are less likely to release information than other firms. Hence, we conjecture that financially distressed firms are more likely to distort their financial communication. As corporate financial distress is a significant cause of financial reporting delays (Limplink, Lubberink, Praag, & Veenman, 2012), it is important that firms in troubled financial situation are identified. In this study, we determined financial distress firms using the Altman’s Z-score Model.

2.2 Board Size and Financial Reporting Timeliness

The number of directors on a corporate board is indicated by the board’s size. In other words, the total number of directors that are seated on the corporate board is referred to as board size (Amah & Ekwe, 2021). In line with the stakeholder theory, the efficacy with which a corporate board carries out its obligation to everyone that is directly or indirectly connected to the firm is largely influenced by its size. However, there is no law that specifies the precise number of directors that should make up a board (Mishra & Kapil, 2018). The Nigerian Code of Corporate Governance (NCCG) of 2018 did not specify the number of directors that should constitute the board of corporate firms, nonetheless suggests that corporate board membership should be of adequate size to effectively carry out its responsibilities.

Till date, literature is awash with studies on the interplay between board size and financial reporting timeliness, but the results are mixed. For instance, Mohamed-Nor, Shafie and Wan-Hussin (2010) performed a study on the association between corporate governance and audit report, and found board size to have a positive and significant relation with the timeliness of financial reporting. Also, based on sample study of 107 listed firms in the stock exchange of Tehran, Mansour, Ahmad, and Sima (2016) discovered board size to be significantly and positively associated with financial reporting timelines. Appah and Emeh (2013) obtained similar result of positive and significant relationship when they investigated the connection between corporate board characteristics and timeliness of financial reporting.
In contrast, the study performed by Mailafia and Adamu (2021) revealed a negative connection between board size and timeliness of financial reporting amongst 10 listed Nigerian deposit money banks. Agyei-Mensah (2018) reviewed the effect of corporate governance and reporting lag on the performance of listed firms in Ghana using 90 firm-year observations. The regression result showed a significant and negative link between board size and audit report lag. Furthermore, the outcome of the study by Baatwah, Ahmad, and Selleh (2015) on the relation of corporate governance mechanisms with accounting information timeliness based on a sample of 260 companies listed on the Muscat Securities Market revealed that board size exerts a negative and significant effect on the timeliness of accounting information. Moreover, the study of Umar, Irfan, Muhammad and Ijaz (2018) revealed similar outcome. These conflicting results in extant literature indicate that the issues surrounding the relationship between board size and financial reporting performance are still opened for further empirical investigation. Hence, we propose our first hypothesis as follows:

**H01:** Board size is negative and significantly related to the financial reporting timeliness of distress likelihood zone non-financial firms in Nigeria

### 2.3 Board Independence and Financial Reporting Timeliness

Corporate board is considered to be independent when it comprises a sizable proportion of independent (outside) non-executive directors who are not connected to the company’s senior executives (Prabowo & Simpson, 2011). In order to exercise its legal authority and perform its corporate duties impartially, a corporate board must be independent. Both the agency and stakeholder theories support the idea that corporate boards should be denominated by external directors. This is because a board dominated by independent external directors is better placed to monitor managers and protect the interests of shareholders (Dunn, 1987; Fama & Jensen, 1983). The Nigerian Code of Corporate Governance 2018 recommends an appropriate mix of executive and non-executive directors, with the desirability that most of the non-executive directors on the board are truly independent.

Results on the financial reporting timeliness-effect of board independence are also contradictory. Abdullah (1996) examined the link between board composition, audit committee, and corporate financial reporting timeliness using data sourced from the stock exchange of Bursa Malaysia and found board independence to have a significant and positive influence on financial reporting timeliness. Garkaz, Abdollahi, Niknam, and Branch (2016) studied the effect of board characteristics on timeliness of financial reporting using Nairobi as a reference point. Based on 107 selected listed firms, results of the multiple regression analysis revealed a significant and positive relationship between board independence and timeliness of financial reports. In the same year of 2016, Basuony, Ehab, Mostaq, and Omar investigated the relationship between board characteristics, ownership structure, and audit report lag in eleven Middle East countries using 201 listed firms over a five-year period and discovered board independence to significantly influence audit report lag.

On the flip side, Asiriuwa, Adeyemi, Uwuigbe, Uwuigbe, Ozordi, Erin and Omoike (2021) conducted a study on the effect of board characteristics on financial reporting timeliness for 50 listed firms in the Nigerian stock exchange between 2012-2018. Their findings revealed that board independence had a negative and significant effect on the timeliness of financial reporting. Ilaboya and Christian (2014) investigated the relationship of corporate governance with audit report lag in Nigeria considering a five-year period. The results of the study showed negative and non-significant connection between board independence and timelines of financial reporting. However, the results of the study by Al Daoud, Ismail, and Lode (2015), which was based on a sample of 112 firms listed in Jordanian stock exchange, revealed a negative and significant relationship between board independence and timeliness of financial reporting. Mohamad-Nor, Shafie and Wan-Hussin, (2010) documented
similar result of a negative and significant connection between both variables. As a result, we propose our second hypothesis as follows:

**H₀₂**: Board independence is negative and significantly related to the financial reporting timeliness of distress likelihood zone non-financial firms in Nigeria

### 2.4 Board Gender Diversity and Financial Reporting Timeliness

Board gender diversity is regarded as the ratio of female directors to total board size. Traditionally, corporate boards are predominantly made up of male directors. The presence of the female gender on the board constitutes gender diversity (Onatuyeh & Ukolobi, 2020). Gender diversity is a part of the board diversity concept, which suggests that boards should reflect society’s structure, with appropriate representation of gender and professional backgrounds. For a number of reasons, including a moral obligation to shareholders, creative decision making process, corporate altruism, and financial considerations, board diversity is encouraged (Onourah & Imene, 2016). Since diversity in the boardroom encourages improved decision-making and inventiveness, board gender diversity is vital for enhancing corporate governance practices in a company (Wang, 2015).

Previous empirical studies that have measured the effect of corporate board characteristics on timeliness of financial reporting generated inconsistent results. Alsmady (2018) examined the relation of timeliness of financial reports with board of directors’ characteristics and ownership type. Based on a sample of 68 firms listed on the Amman Stock Exchange, the outcome of the study showed that board gender diversity exerts a positive and significant effect on the timeliness of financial reports. Mirza, Mehmood, Andleeb and Rizwan (2012) did not find sufficient evidence to support the claim that board gender diversity improves firm financial performance. Also, Ahern & Dittmar (2012) documented a negative relationship in their Danish study between female participation and the firm value. They attributed the negative result to the presence of underqualified women in the boardroom, alluding to the fact boards that comprise women directors without requisite qualification and experience may not be able exert any influence to reduce financial reporting lag of their firms.

On the other hand, Mathuva, Tauringana, and Owino (2019) investigated the association between corporate governance and timeliness of audited financial statements in Kenya. Using a 10-year dataset extracted from the annual reports of 55 firms listed on the Nairobi Stock Exchange, the results of the study revealed that women directors negatively and significantly influenced the timeliness of financial reports of the firms. The findings of the study by Soyemi, Sanyaolu and Salawu (2019) linked board gender diversity to the integrity of financial statements. Their result revealed that female board representation has the tendency of improving board performance, including the financial reporting process. This was as a result of the negative relationship found between board gender diversity and audit report timeliness. Further, using a sample of 500 firm-year observations extracted from the Australian Securities Exchange, Singh and Sultana (2011) did not find any statistical association between board gender diversity and audit report timeliness. Based on the above, we propose our third hypothesis as follows:

**H₀₃**: Board gender diversity is negative and significantly related to the financial reporting timeliness of distress likelihood zone non-financial firms in Nigeria

### 2.5 Board Diligence and Financial Reporting Timeliness

Diligence is proxied by the frequency of board meetings. Frequent board meetings enhance the performance of the directors and enable them to undertake their tasks properly (Odjarem & Jeroh, 2019). The responsibilities of the board of directors include monitoring management, promoting strong internal control systems, and working
closely with the external auditors to ensure accurate financial reporting (Chukwu&Nwabochi, 2019). Board of directors’ diligence is linked to the regularity of board meetings as such board meetings can help improve the control level of corporate boards over the financial reporting process (Carcello, Hermanson, Neal, & Riley, 2002; Greco, 2011).

Ishaq-Ahmed and Che-Ahmad (2016) empirically investigated the relationship between corporate governance characteristics and audit report lag based on selected 14 Nigerian listed banks. Results of the study indicated that board meetings positively and significantly influenced the timeliness of audit report on the financial statements. In a related study, Al Daoud, Ismail, and Lode (2015) revealed a significant relationship between board diligence and financial reporting timeliness, surrogated by management report lag. Based on a study sample of 112 firms quoted on the Amman Stock Exchange, the authors reported that highly diligent boards could influence the quality of financial disclosure and timeliness of financial reports positively. In other words, the greater the number of the board meetings, the longer it would take the management of corporate firms to release the financial report to the public.

However, the study carried out by Habib, Bhuiyan, Huang, and Miah (2018) showed a negative outcome. These researchers performed a meta-analysis of the determinants of audit report lag using a combined sample of 210,437 firm-year observations and discovered that boards holding more frequent meetings were more likely to monitor the financial reporting process effectively and more likely to be interested in achieving improved financial reporting timeliness, and reduced audit report lag. Hashim and Rahman (2010) revealed that regular board meetings would make auditors to place more reliance on firms’ strong internal controls and reduce their workload, leading to a decrease in audit reports lag. In similar line of argument, both Chan, Luo and Mo (2016) and Tauringana, Kyeyune, and Opio (2008) asserted that boards which meet more regularly are likely to approve the publication of their annual reports sooner than those meeting less regularly. In particular, Tauringana, Kyeyune, and Opio (2008)’s study revealed a negative and significant association between board diligence and timeliness of financial reporting of 36 listed Kenyan firms selected for the study.

Based on the foregoing arguments, we therefore propose our fourth hypothesis as follows:

**H₀₄:** Board diligence is negative and significantly related to the financial reporting timeliness of distress likelihood zone non-financial firms in Nigeria

### 2.6 Control Variable

To control for the influence of other factors on the dependent variable of timeliness of financial reporting, firm size was introduced as a control variable in addition to our explanatory variables of board size, board independence, board gender diversity and board diligence.

#### 2.6.1 Firm size and Financial Reporting Timeliness

Firm size represents total assets of a firm, and it shows how much wealth owned by the firm. Different surrogates exist for the size of the firm, and these include the total number of employees, log of total revenue, book value of equity and natural log of total assets (Kasznok & Menichols, 2002; Korad & Mangel, 2000; Kuncova, Hedija, & Fiala, 2016). In this study, we proxied firm size by the natural log of total assets of the distress likelihood zone firms investigated. Theoretically, the size of the firm is expected to positively influence the reporting lag of auditors as the huge transactions of larger corporate firms will cause the auditors to spend extra time performing audit work, thus extending the time the final audit report will be ready. This conclusion aligns with the findings of Arifuddin and Asri (2017) and but at variance with the findings of other authors like Owusu-Ansah (2005) Ilaboya and Iyafekhe (2014), and Rachmawati (2008). Specifically, Owusu-Ansah (2005) stated that large firms face a lot of pressures from the public to publish financial reports on a timelier basis. To this end, they will ensure that the final reports from auditors are timely. In the same manner, Rachmawati (2008)
reported that the larger the firm, the shorter the timeliness of audit reports compared to smaller firms because large corporate firms will pay higher audit fees for audit efficiency and quality.

3. Methodology

3.1 Theoretical Framework

Most past studies on the link between corporate board characteristics and financial reporting timeliness have been anchored more on the agency theory than the stakeholders’ theory. However, this study is rooted in the stakeholder theory. The stakeholder theory stretches the agency theory beyond the principal-agent conflicts of interest. Thus, while agency theory seeks to resolve the agency conflict between managers and shareholders, the stakeholder theory focuses on proffering solution to conflicts among several stakeholders such as the relevant tax authorities, suppliers and customers of the firm (Onatuyeh & Ukolobi, 2020). This is because activities of managers directly or indirectly affects wide spectrum stakeholders and not just shareholders. When managers begin to deviate from pursuing corporate goals and interests to chasing selfish goals, the interests of all relevant stakeholders and not only those of shareholders are affected. Accordingly, in line with the stakeholder theory, the interest of all relevant stakeholders must be taken into consideration (Onatuyeh & Ukolobi, 2020), including producing quality annual financial reports that these group of stakeholders can rely upon to make financial and investment decisions.

Most corporate governance regulatory requirements emphasises effective governance structure that protects the rights of stakeholders and recognise the importance of timely financial reporting. An effective corporate governance structure supports governance monitors such as board size, board independence, board gender diversity and board diligence. The stakeholder theory posits that these governance monitors are vital for improved financial reporting and auditing functions, and thus suggest that higher effective levels of the monitors will help constrain unscrupulous delay in corporate financial reporting.

Flowing from the extant literature and theoretical review above, a schema showing the connection between board size, board independence, board gender diversity, board diligence, firm size, and timeliness of financial reporting is presented as follows:

**Independent Variable**

- Board Size (BSIZ)
- Board Independence (BIND)
- Board Gender Diversity (BGDY)
- Board Diligence (BDIL)

**Financial Reporting Timeliness (FRT)**

**Control Variable**

- Firm Size (FSIZ)

*Figure 1. A schema showing the link between board size, board independence, board gender diversity, board diligence, firm size, and timeliness of financial reporting*
3.2 Research Design, Model Specification and Operationalisation of Variables

The study adopted the ex-post facto research design. The targeted population of the study consists of one hundred and six (106) non-financial firms listed on the floor of the Nigeria Exchange Group as at 31st December, 2020. However, a final sample of twenty (20) firms were chosen. The selection was based on the criteria that only firms with distress likelihood status as revealed by the Altman Z-score model (Altman, 1968) and with 2011-2020 published annual reports were included in the study sample. A firm was considered to have distress likelihood status when its z-score value fell below 1.81 in line with the argument of Udin, Khan, and Javid (2017). Since the study sought to examine how the selected corporate board variables of board size, board independence, board gender diversity, and board diligence influence the financial reporting timeliness of firms likely heading for bankruptcy, we therefore employed a sample which has only firms that lies within the financially distressed zone. The formula for computing the Z-score of the model is given below and the Altman guidelines represented in table 1:

\[ Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5 \]

Where:
- \( X_1 \) = working capital / total assets
- \( X_2 \) = retained earnings / total assets
- \( X_3 \) = earnings before earnings and taxes / total assets
- \( X_4 \) = market value of equity / book value of debt
- \( X_5 \) = sales / total assets

Table 1: Altman Guidelines

<table>
<thead>
<tr>
<th>Scenries</th>
<th>Z-Score</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Likely to experience bankruptcy and financial distress</td>
<td>&lt;1.81</td>
<td>Distress zone</td>
</tr>
<tr>
<td>• Distress may or may not impend</td>
<td>1.81 to 2.99</td>
<td>Gray zone</td>
</tr>
<tr>
<td>• Unlikely to experience financial distress</td>
<td>&gt; 2.99</td>
<td>Safe zone</td>
</tr>
</tbody>
</table>

Source: Udin, Khan, & Javid (2017)

Consistent with our research strategic, the data used in the study were extracted from the corporate annual reports of the twenty (20) listed firms, covering a period of ten years from 2011-2020, thus generating 200 firm-year observations. Both descriptive statistics and inferential statistics were used to analyse the data. To ascertain the appropriate regression model to employ for data analysis, the panel data regression selection test (Hausman test) was conducted. The outcome of the test showed preference for the random effect estimation technique. These results are presented in table 6.

The model is specified as follows:

\[ FRT_{it} = \beta_0 + \beta_1BDSIZ_{it} + \beta_2BIND_{it} + \beta_3BGDY_{it} + \beta_4BDIL_{it} + \beta_5FSIZ_{it} + \mu_t \]

Where: \( \beta_0 \) = intercept; \( FRT \) = financial reporting timeliness; \( BDSIZ \) = Board size; \( BIND \) = Board independence; \( BGDY \) = Board gender diversity; \( BDIL \) = Board diligence; \( FSIZ \) = Firm size; \( \mu \) = error term for firm \( i \) in year \( t \). \( i \) is subscript representing the firms (1 to 20) and \( t \) is subscript representing the period covered (2011 to 2020). Based on extant literature and the theory underpinning the study, the apriori
expectations of the regressors’ coefficients: $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5 > 0$. The implication is that increases in the selected independent variables will cause a decrease in financial reporting timeliness.

### Table 2: Definition and Description of Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Type</th>
<th>Label</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Reporting Timeliness</td>
<td>Dependent</td>
<td>FRT</td>
<td>Number of days between the accounting year-end of firm and the date in which auditors’ report is submitted</td>
</tr>
<tr>
<td>Board Size</td>
<td>Independent</td>
<td>BSIZ</td>
<td>measured by the number of directors in the corporate board of firm</td>
</tr>
<tr>
<td>Board Independence</td>
<td>Independent</td>
<td>BIND</td>
<td>Number of Non-executive directors in the board divided by total number of board members of firm (%)</td>
</tr>
<tr>
<td>Board Gender Diversity</td>
<td>Independent</td>
<td>BGDY</td>
<td>Number of females in the Board divided by the total number of Board members of firm (%)</td>
</tr>
<tr>
<td>Board Diligence</td>
<td>Independent</td>
<td>BDIL</td>
<td>Number of times meetings were held by the board of the sampled firms.</td>
</tr>
<tr>
<td>Firm Size</td>
<td>Control</td>
<td>FSIZ</td>
<td>Natural log of total assets of the firm</td>
</tr>
</tbody>
</table>

Source: Authors’ compilation, 2023

### 4. Estimation of Results and Discussion of Findings

#### 4.1 Descriptive Statistics

The results of the descriptive statistics generated for both the dependent and independent variables used in our regression models are presented in table 3.

### Table 3: Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>FRT</th>
<th>BDSIZ</th>
<th>BIND</th>
<th>BGDY</th>
<th>BDIL</th>
<th>FSIZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median</td>
<td>91.00000</td>
<td>9.000000</td>
<td>66.66670</td>
<td>10.00000</td>
<td>4.000000</td>
<td>17.04233</td>
</tr>
<tr>
<td>Maximum</td>
<td>487.0000</td>
<td>18.00000</td>
<td>93.33333</td>
<td>50.00000</td>
<td>8.000000</td>
<td>24.48910</td>
</tr>
<tr>
<td>Minimum</td>
<td>49.00000</td>
<td>4.000000</td>
<td>16.66670</td>
<td>0.000000</td>
<td>2.000000</td>
<td>13.47520</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>91.22271</td>
<td>2.566972</td>
<td>13.83986</td>
<td>11.35170</td>
<td>0.873608</td>
<td>1.098110</td>
</tr>
<tr>
<td>Observations</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
</tbody>
</table>

Source: STATA Output, 2023

Table 3 shows that the mean value of financial reporting timeliness (TFR) of the investigated distress likelihood zone firms is about 136 days, with a maximum value of 487 days and minimum value of 49 days. This means that on average, the firms took 136 days to prepare their financial reports, have them audited and make them available to the public. The standard deviation of 91.22 is indicative of situations in which the financial reports of the firms for specific years might not have been resolved around the average reporting period of 136 days. The variable of board size (BSIZ) has a mean value of 9 members, with a minimum value of 4 members, maximum value of 18 members, and a standard deviation value of 2.5670. The closeness of both the mean value (8.6) and median value (9) shows that board size demonstrates significant clustering around the average value of the dataset. Board independence variable has a mean value of 66.4%, minimum value of 16.7%, and maximum value of 93.3%. Again, the proximity of both the mean value (66.4%) and median value (66.7%) shows that board independence exhibits significant clustering around the average value of the dataset.
The variable of board gender diversity (BGDY) reported a mean value of about 10%, suggesting that only 10% of directors of the sampled firms represents female members. This figure is rather small compared to the legislative quotas of most European countries, especially Norway. The maximum value of 50% and minimum value of 0% indicate that while some of the firms investigated have up to 50% of women board representation, others do not have any female board member (0%). The board diligence variable has a mean value of 4.5, with a minimum value of 2, maximum value of 8, and standard deviation value of 0.8736. The mean value of about 5 means that the boards of the sampled firms held meetings at least 5 times a year over the period under review. The small value of the standard deviation of this variable is indicative of the slight dispersion between the number of times board meetings were held across the sampled firms. Finally, the mean size (FSIZ) of the sampled non-financial firms, measured by the natural logarithm of total assets is 16.3988, representing about N=16.4 billion. The small values of the standard deviations of this control variable signify small dispersion between the sizes of the distress likelihood zone firms.

4.2 Correlation Analysis

To present a better picture of the directions demonstrated by the relationship between the sets of variables applied in the regression model, the dataset was subjected to correlation analysis using Pearson Product-Moment Correlation and the results are presented in table 4.

Table 4: Correlation output of the Independent and Dependent Variables

<table>
<thead>
<tr>
<th></th>
<th>FRT</th>
<th>BDSIZ</th>
<th>BIND</th>
<th>BGDY</th>
<th>BDIL</th>
<th>FSIZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRT</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDSIZ</td>
<td>-0.0737</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIND</td>
<td>0.1361</td>
<td>0.0909</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BGDY</td>
<td>0.0121</td>
<td>0.0806</td>
<td>-0.1534</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDIL</td>
<td>0.1166</td>
<td>0.2200</td>
<td>-0.1060</td>
<td>0.1401</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>FSIZ</td>
<td>-0.1743</td>
<td>0.1908</td>
<td>-0.2108</td>
<td>0.0765</td>
<td>0.1430</td>
<td>1.0000</td>
</tr>
</tbody>
</table>


The results of the correlation analysis reflect mixed coefficients as some of the correlations displayed negative coefficients and others displayed positive coefficients. For example, the correlation coefficients between board size and financial reporting timeliness (-0.0737), board gender diversity and board independence (-0.1534), firm size and financial reporting timeliness (-0.1743), firm size and board independence (-0.2108) as well as board diligence and board independence (-0.1060) are all negative. On the flip side, the correlation coefficients between board independence and financial reporting timeliness (0.0136), board gender diversity and financial reporting timeliness (0.0121), board diligence and financial reporting timeliness (0.1166), board independence and board size (0.0909), board gender diversity and board size (0.0806), board diligence and board size (0.2200), firm size and board gender diversity (0.0765), firm size and board diligence (0.1430), as well as board diligence and board gender diversity (0.1401) are all positive. The coefficients of all the exogenous variables are significantly less than the threshold of 0.80, thus demonstrating the absence of multicollinearity problem (Kennedy, 2008). The results of the correlation analysis are further reinforced by the test result of the variance inflation factor (VIF) presented in table 5. The use of multivariate test is rooted in the assumption that no significant multicollinearity exists among the exogenous variables. The applicability of the multicollinearity test is that if it exists, it may cause phony regression results.
Table 5: Variance Inflation Factor

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDSIZ</td>
<td>1.07</td>
<td>0.933875</td>
</tr>
<tr>
<td>BIND</td>
<td>1.05</td>
<td>0.953700</td>
</tr>
<tr>
<td>BGDY</td>
<td>1.05</td>
<td>0.956347</td>
</tr>
<tr>
<td>BDIL</td>
<td>1.08</td>
<td>0.924829</td>
</tr>
<tr>
<td>FSIZ</td>
<td>1.07</td>
<td>0.935720</td>
</tr>
<tr>
<td>Mean VIF</td>
<td>1.06</td>
<td></td>
</tr>
</tbody>
</table>

Source: STATA Output, 2023

The results in table 5 revealed all the separate co-variates VIF, and a VIF mean value of 1.06, which is less than the benchmark of 10. These results showed no instance of multicollinearity among the predictors (Field, 2000). There can only be a problem of multicollinearity if the values of the centered VIF were in excess of 10.

4.3 Multivariate Analysis

In order to determine which of the model between the fixed effect and random effect models should be employed for data analysis, a regression selection test, called the Hausman test, was performed (Table 6). Outcome of the test revealed preference for the random effect model over the fixed effect model since the test reported probability value of 0.3339, which is more than 0.05. The results of the random effect model, alongside OLS regression and fixed effect models, are also presented in Table 6. However, emphasis was placed on the outcomes of the random effect regression model.

Table 6: Results of OLS Regression, Fixed Effect Model and Random Effect Model

<table>
<thead>
<tr>
<th></th>
<th>OLS Regression</th>
<th>Fixed Effect Model</th>
<th>Random Effect Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>t-stat</td>
<td>Coefficient</td>
</tr>
<tr>
<td>Cons</td>
<td>22.84251</td>
<td>0.46 (0.644)</td>
<td>-44.64728</td>
</tr>
<tr>
<td>BSI2</td>
<td>-4.478726</td>
<td>-1.75 (0.028)**</td>
<td>-2.546412</td>
</tr>
<tr>
<td>BIND</td>
<td>1.109592</td>
<td>2.36 (0.019)**</td>
<td>1.276398</td>
</tr>
<tr>
<td>BGDY</td>
<td>0.207789</td>
<td>0.36 (0.717)</td>
<td>1.285186</td>
</tr>
<tr>
<td>BDIL</td>
<td>16.55592</td>
<td>2.19 (0.030)**</td>
<td>22.94151</td>
</tr>
<tr>
<td>FSIZ</td>
<td>-6.78670</td>
<td>-1.24 (0.440)</td>
<td>-8.8945</td>
</tr>
<tr>
<td>F (4, 195)</td>
<td>2.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>p-value</td>
<td></td>
<td>(0.0362)**</td>
<td></td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.0510</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adj. R-Squared</td>
<td>0.0315</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
As shown in table 6, the result of the relationship between board size (BSIZ) and financial reporting timeliness (FRT) reported the following statistics: coefficient of -3.0714, a z-value of -1.28 and an associated probability value of 0.020 < P = 0.05. The result reveals a negative and significant connection between board size and financial reporting timeliness, indicating that an increase in board size will lead to a 3.07% decrease in time taken to publish financial reports by the sampled listed distress likelihood Nigerian firms. This signifies that large boards will use their wealth of experience, knowledge, diversity and expertise to push to resolve the financial difficulties and ensure an early publication of financial reports. The finding mirrors Baatwah, Salleh, and Ahmad (2015) who contended that large board size allows corporate firms to accommodate a significant number of directors with the industry experience and financial expertise that will enable them monitor managers objectively and reduce financial reporting lag. Therefore, the result of a negative and statistically significant association could sustain the null hypothesis of a negative and significant relationship between board size and financial reporting timeliness. Hence, we accept the null hypothesis and reject its alternate.

The result of the relationship between board independence (BIND) and financial reporting timeliness (FRT) is positive and significant at 1% level. The result reported a coefficient of 1.271, a z-value of 2.74 and an associated probability value of 0.006 < P = 0.05. The implication of these statistics is that an increase in board independence (BIND) will lead to a 1.27% increase in time taken to release financial reports by the listed Nigerian firms investigated. This result was unexpected considering the negative and significant outcome of the board size variable. Independent board members may spend ample time probing suggestions raised by auditors, bearing in mind the interests of various stakeholders, without reaching a consensus, especially regarding finance-related issues, thereby leading to late filing of financial reports. The result of this study is consistent with those of Garkaz, Abdollahi, Niknam, and Branch (2016) who documented that an increase in board independence was likely to extend the timeliness of financial reporting among listed firms in Nairobi but contrary to the expectation that having more independent directors in corporate boards would promote cooperation between the board and the auditors that could lead to reduced financial reporting timeliness. Therefore, the result of a positive and statistically significant association could not sustain the null hypothesis of a negative and significant relationship between board independence and financial reporting timeliness. Hence, we reject the null hypothesis and accept its alternate.

Also, the result of the association between board gender diversity (BGDY) and financial reporting timeliness (FRT) revealed is a positive and non-significant connection at 5%. The result displayed a coefficient of 0.955, a z-value of 1.62 and a related probability value of 0.106 > P = 0.05. These figures suggest that an increase in board gender diversity (BGDY) will lead to a 0.96% increase in the time taken to make the financial reports public by the listed Nigerian firms investigated but not at a significant level. This result was equally unexpected given the general assumption is that board gender diversity can reduce time taken by firms to release financial reports because of the conservative nature of the female gender regarding decision-making. Possibly, both the financial difficulties of the sampled firms and low level of board female representation could be plausible reasons for the positive and non-significant nature of the result. This outcome of the study does not corroborate the findings of
both Soyemi, Sanyaolu and Salawu (2019) and Mathuva, Tauringana, and Owino (2019) who documented a statistically significant and negative relationship between board gender diversity and financial reporting timeliness. However, the result of our study was partially consistent with the result of Alsmady (2018). Hence, we reject the null hypothesis of a negative and significant relationship.

Further, the result of the relationship between board diligence (BDIL) and financial reporting timeliness (FRT) is positive and significant at 5% level. The result reported a coefficient of 20.592, a z-value of 2.54 and an associated probability value of 0.011 < P= 0.05. The implication of these statistical figures is that an increase in board diligence (BDIL) will lead to a 20.60% increase in the time taken to release financial reports by the listed firms investigated. In other words, the more the board meets, the longer it takes decisions to be reached, leading to a longer period for producing and publishing financial reports. This result was expected because it takes time to reach decision when matters of financial difficulties are discussed. Moreover, as the regular board meetings are likely to address potentially bankruptcy problems, release of the final annual reports may not be timely, thus supporting the result of Al Daoud, Ismail, and Lode (2015). Since the result of our study revealed a positive and statistically significant relationship between both variables, we therefore reject the null hypothesis and accept its alternate.

Finally, regarding the control variable of firm size, the results of the random effect model showed a statistically insignificant and negative relationship between size and financial reporting timeliness of the sampled firms. The result revealed a coefficient of -7.669, a z-value of -1.58 and an associated probability value of 0.450 > P= 0.05, specifying that large firms, regardless of their financial state, are associated with improved financial reporting timeliness, although the result was insignificant at 5% level. This result is consistent with those of Owusu-Ansah (2005) and Rachmawati (2008) who found that large corporate firms were likely to publish financial reports faster due to public pressure and desire to maintain good public image.

5. Conclusion and Recommendations
Corporate board characteristics is vital to the performance and survival of any firm. It is imperative for the firm to decide on what board structure best suits it, especially during periods of financial difficulties. This study examined the effect of corporate board characteristics on the financial reporting timeliness of distress likelihood zone listed non-financial firms in Nigeria over a ten-year period (2011-2020). We proxy financial reporting timeliness by the number of days between the accounting year-end of firms and the date in which auditors’ report was submitted. The corporate board characteristics of board size, board independence, board gender diversity and board diligence selected for this study are among those attributes commonly investigated in literature.

The outcome of the random effect regression model showed that both board independence and board diligence exert positive and significant effect on the financial reporting timeliness of the sampled Nigerian firms. However, the regression model did not produce similar result for board size and firm size as both variables exert a negative effect on the timeliness of financial reporting of the firms. Also, the study did not provide evidence to support the general belief that board gender diversity can reduce time taken by firms to release financial reports given the conservative and risk-averse nature of the female gender regarding decision-making. We reckon that both the financial difficulties of the sampled firms and low level of board female representation of the firms sampled could be plausible reasons for the positive and non-significant result.

Based on the findings of the study, we therefore recommend that increase in the number of independent directors to enhance financial reporting timeliness of the distress likelihood zone Nigerian firms. We equally
recommend reasonable increase in female board representation as this will help improve board effectiveness, firm performance and timely publication of financial reports amongst the listed Nigerian firms.

References


