Corporate Governance Attributes and Firm-specific Features as Determinants of Sustainability Initiatives of Listed Financial and Non-Financial Companies in Nigeria

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Abstract

The study’s population covers all listed corporations on the Nigerian Stock Exchange (NSE), both financial and non-financial. As of December 2021, there are 168 financial and non-financial entities on the NSE (NSE Daily official listing, March 1, 2022). However, this study considers the quoted companies rated and ranked by the CSRHUB consensus economic, social, and governance (ESG) rating amongst all sectors in Nigeria because of their enormous contribution to the field of CSR globally. The time frame for the research is six (6) years, from 2016 to 2021. An assessment of companies’ roles in promoting environmentally friendly practices has been conducted, as we deem it necessary to study the effect of sustainability initiatives between the financial and non-financial sectors. This study adopted a purposive sampling technique in drawing its samples. The purposive sampling procedure necessitates focusing on entities with precise structures that could offer information on a study issue (Etikan et al., 2016). Thus, twenty-six (26) corporations in Nigeria have taken a stance on corporate social responsibility, which forms the sample of this study.

The unweighted disclosure index is used to measure SI, which is the dependent variable for this study. as in Bashiru et al. (2022); Waheed et al. (2021); Jamil et al. (2021); and Saleh et al. (2010), utilized to measure the degree of the SI dichotomous variable. If a company disclosed SI items in its annual report, it would be counted as “1,” while companies that did not reveal an item would be recorded as “0” (Gujarati, 2009). Total score values for SI disclosure are aggregated from all sub-scores of SI, including 14 economic dimensions, 12 social dimensions, 15 environmental dimensions, and 15 governance dimensions. The disclosure model scoring is additive, and unweighted indexes are calculated. The disclosure indexes comprising 56 sustainability performance indicators were utilized. The total amount of scores is computed by dividing the firm’s scores by the total number of potential points.

Six independent variables are used, composed of governance attributes and firm-specific operating features. The operating features consist of company size (CSZE), company age (AGE), and leverage (LEV), while the governing features comprise board size (BSZE), board independence (BOIND), and board gender diversity (BGD). Issa et al. (2022), Abu Qa’dan and Suwaidan (2019), and Hussain et al. (2018) all agree that BSZE can be quantified by counting the number of board members. The Board of Directors’ Independence (BOIND) is defined as the number of independent, non-executive directors as a percentage of all board members (Al Amosh & Khatib, 2021; Jizi & Nehme, 2018; Rashid, 2018). BGD, or board gender diversity, is the percentage of women on a board of directors relative to the total number of board members (Chams & García-Blándón, 2019; Orazalin & Baydauletov, 2020).

When calculating CSZE, natural logarithms of the firm’s total assets are used (Hussain et al., 2018; Crisóstomo et al., 2020). The number of years that a company has been in operation is used to calculate AGE (Issa et al., 2022). Total debt is divided by total assets to get the LEV (Crisóstomo et al., 2020; Li et al., 2018).

1. Introduction

Institutionalized corporations have been tasked by the United Nations with fulfilling the Sustainable Development Goals by 2030. In response, numerous sustainability concepts encouraging firms to contribute to environmental and social well-being have been incorporated into the revised Nigerian Code of Corporate Governance (2018). In addition, the Central Bank of Nigeria, which regulates the industry, issued sustainability principles to guide the reporting of financial institutions and other enterprises’ sustainability efforts.
Nigeria has just undergone its most severe recession in two decades; however, with the easing of pandemic restrictions and the implementation of anti-shock policies, economic recovery is expected to gradually begin in 2021. As a result of the fall in oil prices, Nigeria was extremely susceptible to global economic upheaval. The World Bank estimates that by the year 2021, oil will have accounted for more than 80% of exports, 30% of banking sector lending, and 50% of government revenues. In 2018, it was estimated that 40% (83 million) of Nigerians were poor and 25% (53 million) were at risk of poverty due to unforeseen circumstances. This means that by 2023, an additional 12 million Nigerians are projected to live in poverty. (The World Bank, 2021).

Consistent with the foregoing, Nigeria’s economic prognosis remains highly unclear, given the mode of recovery being threatened by volatility in the oil industry, including an unanticipated shock in oil prices, and difficulties in the financial sector. Without the backing of business organizations in the financial and non-financial sectors of the economy, a strong recovery will require the policy reaction of Nigeria’s authorities. Human capital development in Nigeria ranks 150 out of 157 countries in the World Bank’s 2020 Human Capital Index, in spite of the country’s current socioeconomic improvements (The World Bank, 2021). Regrettably, there is a dearth of hard data on what drives Nigerian corporations to implement SI. Previous empirical investigations on the effects of SI have mostly ignored developing countries, particularly those in sub-Saharan Africa (Bernard et al., 2018; Walker et al., 2020).

Consequently, Aksoy et al., (2020), Crisóstomo et al. (2020), and Bashiru et al. (2022) were among the few conducted investigations in developing economies. A deficiency of empirical research on the potential effects of SI in Sub-Saharan Africa persists, however. In Nigeria, for instance, the function of CG features like board size (BSZE), board gender diversity (BGD), and board independence (BOIND) is not studied sufficiently. The board of directors is responsible for making executive rules and ensuring that they are actively implemented, as they oversee the day-to-day management process and internal components such as the firm’s size, age, and leverage. The board of directors determines organizational strategy and oversees its execution by providing direction to upper management. Accordingly, as proven by Bashiru et al. (2022) and Aksoy et al. (2020), internal factors of the organization like size, age, and leverage may also play a crucial part in SI in Nigeria.

In addition, companies have begun to see CG as a comprehensive instrument for increasing their company’s worth by monitoring performance regarding sustainability (Adedeji et al., 2020; Montiel & Delgado-Ceballos, 2014; Warren-Myers, 2013). As one of the fastest-rising economies, Nigeria’s listed enterprises make it all the more important to understand how CG and SI connect. Companies in a variety of countries, such as South Africa, Australia, the United States, and the United Kingdom, are also actively engaged in sustainability programs (Cingolani, 2013). Even though businesses operate in a wide variety of economic, ecological, social, and governmental contexts, it is crucial to explain the specific factors that influence each company’s sustainability approach. The importance of understanding the role of corporate boards in constructing responsiveness for corporate sustainability cannot be overstated. Therefore, sustainability activities include learning about business policies, organizational structures, and economic, environmental, social, and governance practices that advance corporate social responsibility (CSR). That’s why CSR serves as a yardstick by which to evaluate it (Hamid & Othman, 2019).

It is also widely held that corporate governance (CG) represents the pinnacle of openness and honesty in business. For companies to succeed and be held accountable, disclosure regulations are crucial (Gutterman, 2020; Nwobu et al., 2017). In light of the foregoing, several institutions (including government agencies, stock market regulators, the media, and academia) have advocated for greater openness and sustainability in business as a means of evaluating how well firms manage risks. Achieving organizational success is still guided by CG, which consists of a collection of frameworks and procedures for goal-setting, progress monitoring, and evaluation.

In light of the foregoing, the drive of this study is to empirically examine the significance of firm-specific variables such as firm size, age, and leverage in the decision to engage in SI among publicly traded Nigerian financial and non-financial firms. Because of its emphasis on internal governance and firm-specific features in
SI, this study builds its assumptions on legitimacy and stakeholder theories. Stakeholder theory is bolstered by the findings that show a favorable correlation between board independence and SI. Surprisingly, neither the number of board members nor the representation of women on the board had a major effect on SI. As buttressed by the research findings, internal firm-specific features such as firm size and company age are positively and significantly connected to SI. Unlike leverage, which was found to have no connection with SI.

2. Sustainability Initiatives

Sustainability initiatives require integrating sustainable development objectives into the business’s daily operations. These objectives include encouraging social justice, raising economic effectiveness, and enhancing environmental performance. Initiatives to encourage business sustainability have been created, as confirmed by the Sustainability Reporting Guidelines, the Global Reporting Initiatives (GRI), ISO 14001, and the United Nations Global Compact (UNGC), which regulates environmental management (Abdul Latif et al., 2023). Yet achieving a sustainable balance between social, environmental, and economic performance at the business level is extremely challenging (Aksoy et al., 2020).

Several studies, such as Friedland and Jain (2022), Clark and Brown (2015), Goranova and Ryan (2015), Walls et al. (2012), and Ryan et al. (2010), have discussed the concepts of CG and CSR relationships and edges with one another. As revealed by Olayinka (2022), CG had an optimistic and substantial connection with the SI of selected quoted corporations in Nigeria. However, various empirical studies have examined the impact of CG features as predictors of SI on the financial and non-financial sectors. Despite the many obstacles to sustainable development in Africa, little empirical research has focused on the variables that motivate businesses to adopt such practices.

In Turkey, Aksoy et al. (2020) investigate the factors that affect the SI of Turkish manufacturing firms that are included in the Borsa Istanbul Sustainability Index. Stakeholder theory served as the foundation for assumptions about SI with firm-specific traits and board features. According to their research, the SI of Turkish firms is positively influenced by the size of the business board and the percentage of independent directors. These findings relate the varied skill sets of the independent directors to the management of the company’s relationship with the environment by considering sustainability efforts as part of the corporate strategy. On the other hand, financial performance correlates with SI, and female directors have no impact on SI.

What motivates businesses to invest in SI was investigated by Artiach et al. (2010) in the United States. To assess the internal firm features that are linked to high-level SI, they compared industry leaders in SI with more conventional organizations. Value-driven businesses have greater size, more promising futures, and greater returns on equity. They are wrong in asserting that a company’s liquidity or leverage has any appreciable bearing on SI.

Additionally, Atoyebi and Okpe (2021) conduct an empirical analysis of the impact of sustainability reporting on the bottom lines of Nigerian manufacturing firms. These findings demonstrate that economic and environmental performance positively and significantly affect the economic performance of listed industrial organizations, based on data from the yearly reports of the sampled companies. However, Asuquo et al. (2018) found little evidence that sustainability performance disclosure affects the financial performance of Nigerian breweries. Their research shows that the selected brewery companies’ ROA is unaffected by economic, social, and environmental disclosures.

Accordingly, the sustainability of publicly traded oil and gas firms in Nigeria is investigated by Bashiru et al. (2022). The studies reveal that the size of the board, the proportion of women on the board, and the number of independent board members all have significant effects on SI. There was an optimistic correlation between company size and SI, but a negative correlation between leverage and profitability. The previous study focused mostly on the short-term financial impact of SI, which may be negatively impacted by the expense of implementing sustainable practices. Rebuilding production facilities from the ground up can be expensive, but it is sometimes important to adopt sustainable operations and reduce environmental pollution and hazards. Since SI helps companies maintain good relations with their constituents, it pays off in the long
run (Aksoy et al., 2020). Therefore, SI may not immediately increase profits for the company.

Previous studies have looked into the root origins and implications of SI by employing a wide range of theoretical lenses. Frequently used theories include resource dependency theory, stakeholder theory, institutional theory, and legitimacy theory (Crisóstomo et al., 2020; Bashiru et al., 2022; Johnson-Rokosu & Olarewaju, 2016). Although many different types of previously evaluated publications exist in the fields of CG and SI, literature reviews have revealed the necessity for further research on CG and SI (Jain & Jamali, 2016; Aguilera et al., 2015; Brown et al., 2011). This evaluation focuses on peer-reviewed studies published between 2000 and 2018 that address CG procedures and their effect on CSR initiatives.

In light of the aforementioned, Jain and Jamali (2016) examined the various firm owner types and zeroed in on formal and informal institutional mechanisms operating within the organization. Directors' demographic diversity, board structures, and directors' social capital and resource networks can each be researched at the group level. However, they also look at CEOs on an individual level to learn about their demographic and sociopsychological characteristics. To better understand the impact of CG systems on SI, they advise that future research use a multi-theoretical lens, incorporating qualitative and quantitative methodologies. Like this, Aguilera et al. (2015) gave internal governance measures a lot of weight (i.e., the board of directors, controlling owners, and managerial incentives).

This literature generally discounts the significance of external CG practices in preventing managers from engaging in harmful actions that harm shareholders and the organization as a whole. Finally, they propose a roadmap for future research into CG that will, they hope, result in a more complete blending of internal and external forms of governance. Also, it argues that different combinations of external and internal governance qualities are needed to determine what constitutes effective CG toward SI (Aguilera et al., 2015). The principles around which CG is built include accountability, openness, justice, and corporate responsibility (Chen, 2021). Therefore, it is highly persuasive that board composition (board size, board independence, and board gender diversity) be investigated for its potential role in explaining the correlation between CG and SI, as proposed by Zaman et al. (2020).

3. Inferences for Theories

This research employed legitimacy and stakeholder theories to investigate the effect of governance attributes and firm-specific features in SI. Stakeholder theory emphasizes that a corporation is accountable to not just the providers of funds but numerous stakeholders as well as the society and location where it exists. As a result, SI can be used by corporations for environmental preservation and societal benefit. Examining the factors that influence SI in both financial and non-financial businesses listed by CSRHUB in Nigeria, this research helps to fill out the existing theoretical framework. Findings from this study may be relevant to these organizations and regulatory bodies, such as the central bank of Nigeria and the Nigerian stock exchange, as standard-setters since they highlight the need for satisfying disclosure guidelines to intensify public awareness of the value of sustainability practices in Nigeria.

4. Hypothesis Development

The hypothesis development of this research covers BSZE, BOIND, and BGD as well as CSZE, AGE, and LEV with the SI, and it starts with BSZE and SI below.

4.1 Board Size and Sustainability Initiatives

An active board of directors might lead to a better concert and public perception, as well as the proactive application of SI. The size and complexity of a company’s operations dictate the number of people who should serve on its board of directors (Aksoy et al., 2020). According to stakeholder theory (ST), a larger board gives stakeholders a greater voice in business decisions and helps ensure bureaucratic justice (Freeman & Evan, 1990; Friedman & Miles, 2002). Previous research has shown that the size of the board affects SI. For example, Majeed et al. (2015) and Tjahjadi et al. (2021) found a favorable correlation between board size and environmentally responsible policies. Board size has also been shown to raise environmental SI by Alabdullah et al. (2019), Trireksani and Djajadikerta (2016), and Raimo et al. (2021). Board size is inversely
connected to SI, according to research by Htay et al. (2012) and Hussain et al. (2018). However, Simon et al. (2020) discovered that, for listed manufacturing firms in Nigeria, board size had no significant effect on environmental SI. In line with ST and prior studies that show board size helps in promoting fairness by ensuring stakeholders are more directly represented in corporate decisions and SI. Accordingly, this study proposes that:

**H1: There is a positive relationship between board size and SI**

### 4.2 Board Independence and Sustainability Initiatives

According to the stakeholder theory, independent directors should have a favorable effect on SI since they are less likely to be influenced by shareholders’ and supervisors’ interests than executive boards (Hussain et al., 2018). In addition, as outsiders to the board, they feel a greater obligation to the interests of many different groups. The stakeholder theory (ST) asserts, as confirmed by Freeman and McVea (2005), that firms are open systems that impact and are affected by other actors both inside and outside the system. It coincides with Lone et al.’s (2016) argument that ST helps independent directors decrease conflicts of curiosity between the company’s management and stakeholders. Independent directors have been linked to greater SI in prior research by Ahmad et al. (2017), Asri et al. (2013), and Mousa et al. (2018). In addition, according to Hörisch et al. (2020), a board’s ability to maximize the value of its stakeholders depends on its ability to maintain its independence. Many Malaysian companies have CSR initiatives, but some studies have found no evidence that independent directors have a significant impact on these efforts (Ahmed Haji, 2013; Said et al., 2009). A similar lack of correlation between board independence and environmental sustainability policies was discovered by Akbas (2016). Haniffa and Cooke’s (2005) research, for example, finds that executive directors report higher CSR in Malaysian businesses than was found in the preceding evaluation. This is disputed by Pucheta-Martinez et al. (2019), who argue that the independence of the board has no bearing on SI. Because of this, it is assumed that boards with a higher percentage of independent directors attempt harder to incorporate SI into corporate policy. Therefore, the following hypothesis is formulated:

**H2: There is a positive relationship between board independence and SI.**

### 4.3 Board Gender Diversity and Sustainability Initiatives

Since women are more likely to be affected by environmental and societal concerns and to have a more optimistic outlook on ethical issues, their representation on corporate boards may have a favorable effect on SI (Cancela et al., 2020; Chams & García-Blandón, 2019; Zaid et al., 2020). Due to economic and social differences and male dominance, the role of women in the boardroom is an important part of CG. Accordingly, their participation on the board affects its long-term viability (Martinez et al., 2019). Legitimacy theory (LT) is the most extensively used theory to explain the differences in gender and the degrees of CSR activities, as claimed by Rashid (2018). Gender diversity on boards has been shown to increase board control, improve monitoring of company decision-making, and strengthen stakeholder interactions concerning corporate social responsibility (CSR) efforts (Ain et al., 2021; Al Fadli et al., 2019; Issa et al., 2022; Simionescu et al., 2021). It has been shown in numerous studies, including those by Bann et al. (2021), Naveed et al. (2021), and Ben-Amar et al. (2017), that the presence of women has a salutary effect on social and environmental performance, hence raising SI.

Additionally, Glass et al. (2016) examine how firms’ corporate environmental strategies change when led by women in positions of authority. Their findings show that the gender balance of top management has an effect on business strategy and that the proportion of female CEOs is inversely associated with green efforts. To evaluate the effects of having board members from both sexes, Suciu et al. (2021) provide a comparative analysis. Their findings don’t seem to back the idea that more females on boards lead to better financial performance, but they also don’t seem to show any negative correlation between the lack of women on boards and a company’s financial woes either. In line with the foregoing, the following hypothesis is formulated:

**H3: There is a positive relationship between board gender diversity and SI.**
4.4 Company Size and Sustainability Initiatives

Many analysts predict that SI will be significantly impacted by a company’s size (Aksoy et al., 2020; Amran et al., 2015). In general, authorities and other interested parties pay more attention to large companies because of their greater visibility (Artiach et al., 2010). Additionally, bigger firms have more financial resources to cover the cost of CSR initiatives (Rodriguez-Fernandez, 2016). An optimistic association between the firm’s size and SI has been documented by several empirical studies, including Sroufe and Gopalakrishna-Remani (2019) and Ghazali (2007). Similarly, Pham et al. (2021), Ja’afar et al. (2021), Eljido-Ten & Tjan (2014), De Villiers et al. (2014), and Uwuigbe (2011) found that the size of a company has a significant impact on sustainability practices vis-à-vis social and environmental issues. However, Thomas and Indriaty (2020) found that company size was insignificant with SI. As buttressed further by De Villiers et al. (2014), they also found no substantial correlation between the dimensions of a corporation and its environmental sustainability.

Concerning the above, DiMaggio and Powell (2000) confirm that larger organizations are more susceptible to sustainability procedures than smaller companies. Numerous scholars, like Aguilar-Fernández and Otegi-Olaso (2018) and Schnackenberg and Tomlinson (2016), have underpinned the above assertion that larger corporations have more stakeholders, meaning they are held to a higher standard of transparency and accountability. Firms are compelled to participate in sustainability practices because their business model is developed toward sustainable innovation and prioritizes the interests of debt holders over those of less influential stakeholders. In line with the above argument, the following hypothesis is formulated:

H4: There is a positive relationship between company size and SI

4.5 Company Age and Sustainability Initiatives

There is a correlation between the age of the organization, the rate at which it adopts sustainability rating indices, and the length of time it takes to put those indices into practice (Trencansky et al., 2014). According to their findings, older companies have longer implementation times than younger ones. ST considers the expectations of various stakeholder groups and their influence on corporate policies (Darkuvien & Bendoraitien, 2014).

Studies such as Basuony et al. (2014) and Godos-Dez et al. (2011) revealed a significant positive relationship between firm age and SI practices. They claim that more prominent and older firms positively affect productivity, which leads to improved SI practices. Although Younis and Sundarakani’s (2020) study confirmed that firm age has no relationship with SI. Trencansky et al. (2014) concluded that the effect of company age on sustainability score, covered by the majority of sustainability perspectives, is statistically insignificant. Also, in Nigeria’s context, a survey conducted by Benjamin et al. (2017) agrees that age is significant and certainly connected to the environmental sustainability practices of listed manufacturing firms at a 1% confidence level with p-values of 0.000 each. It implies that if a firm’s age increases, its environmental sustainability practices will also increase. The LT posits that more sustainability practices will be needed with the outside community if a company operates longer. Based on the above argument, the following hypothesis is formulated:

H5: There is a positive relationship between company age and SI

4.6 Leverage and Sustainability Initiatives

A company’s debt levels can be used as a proxy for the influence of the company’s various financial interest groups. From the perspective of the various stakeholders, it is obvious that there are a wide variety of monetary and other interested parties. The ST-based connections between leverage and SI actions have also been developed. Companies with a high level of debt spread voluntary information and rules of behavior to save costs and, by extension, capital expenditures (Chang et al., 2019). Leverage’s association with SI has been demonstrated by numerous studies (Nazari et al., 2015). Leveraged companies face increased financial risk and, as a result, report more sustainability data (Hussan, 2016).

Yang and Lai (2021) state firmly that there is a correlation between financial leverage and SI. However,
Uwuigbe et al. (2018) found that firms’ financial leverage (as measured by their debt-to-equity ratio) significantly correlates negatively with the level of environmental disclosure made by corporations. Larger debt loads necessitate more thorough sustainability processes to meet the necessities of moneylenders and other investors (Orazalin & Baydauletov, 2020). Therefore, as the firm’s leverage rises, we expect it to prioritize the needs of its debt holders over those of its other, less influential stakeholders. In line with the above, the following hypothesis is formulated:

**H6: There is a positive relationship between company leverage and SI**

5. Data and Methodology

The study’s population covers all listed corporations on the Nigerian Stock Exchange (NSE), both financial and non-financial. As of December 2021, there are 168 financial and non-financial entities on the NSE (NSE Daily official listing, March 1, 2022). However, this study considers the quoted companies rated and ranked by the CSRHUB consensus economic, social, and governance (ESG) rating amongst all sectors in Nigeria because of their enormous contribution to the field of CSR globally. The time frame for the research is six (6) years, from 2016 to 2021. An assessment of companies’ roles in promoting environmentally friendly practices has been conducted, as we deem it necessary to study the effect of sustainability initiatives between the financial and non-financial sectors. This study adopted a purposive sampling technique in drawing its samples. The purposive sampling procedure necessitates focusing on entities with precise structures that could offer information on a study issue (Etikan et al., 2016). Thus, twenty-six (26) corporations in Nigeria have taken a stance on corporate social responsibility, which forms the sample of this study. As shown in Figure I below, Access Bank has the highest percentage contribution to CSR at 99%, followed by Ecobank and Starling Bank with 98%. In contrast, Guarantee Trust and Fidelity have a lower rate of 62% and 54%, respectively.

On the other hand, in the non-financial sector, Seplat Petroleum has the highest percentage of 89 contributions to CSR in the oil and gas industries, followed by Nestle’s plc with 84% in the consumer goods industries. In addition, despite the long years in operation and societal patronage, Guinness Nigeria plc, Lafarge Africa plc, and UAC Nigeria plc have the lowest contributions to CSR with 11%, 11%, and 1%, respectively. Therefore, there is a need to investigate the effect of sustainability practices in Nigeria’s financial and non-financial sectors.

Prior studies focused on either the selected deposit money banks, manufacturing enterprises, insurance companies, oil and gas, the financial or non-financial sectors of the listed firms in Nigeria, or other service providers such as Hamid & Ibrahim, 2020; Mohammed et al., 2016; Nwobu et al., 2017; Uwuigbe et al., 2018. Thus, this study focuses on the quoted companies rated and ranked by the World CSR Consensus Rating in Nigeria, including both the financial and non-financial sectors. Therefore, we drew upon the annual reports and financial statements of sample companies for our research. In addition to employing panel-corrected standard errors for regression analysis, we also use descriptive statistics to help us understand the relationships between our research variables.

5.1 Variables Measurement

The unweighted disclosure index is used to measure SI, which is the dependent variable for this study. as in Bashiru et al. (2022); Waheed et al. (2021); Jamil et al. (2021); and Saleh et al. (2010), utilized to measure the degree of the SI dichotomous variable. If a company disclosed SI items in its annual report, it would be counted as “1,” while companies that did not reveal an item would be recorded as “0” (Gujarati, 2009). Total score values for SI disclosure are aggregated from all sub-scores of SI, including 14 economic dimensions, 12 social dimensions, 15 environmental dimensions, and 15 governance dimensions. The disclosure model scoring is additive, and unweighted indexes are calculated. The disclosure indexes comprising 56 sustainability performance indicators were utilized. The total amount of scores is computed by dividing the firm’s scores by the total number of potential points.
Six independent variables are used, composed of governance attributes and firm-specific operating features. The operating features consist of company size (CSZE), company age (AGE), and leverage (LEV), while the governing features comprise board size (BSZE), board independence (BOIND), and board gender diversity (BGD). Issa et al. (2022), Abu Qa’dan and Suwaidan (2019), and Hussain et al. (2018) all agree that BSZE can be quantified by counting the number of board members. The Board of Directors’ Independence (BOIND) is defined as the number of independent, non-executive directors as a percentage of all board members (Al Amosh & Khatib, 2021; Jizi & Nehme, 2018; Rashid, 2018). BGD, or board gender diversity, is the percentage of women on a board of directors relative to the total number of board members (Chams & Garca-Blandón, 2019; Orazalin & Baydauletov, 2020).

When calculating CSZE, natural logarithms of the firm’s total assets are used (Hussain et al., 2018; Crisóstomo et al., 2020). The number of years that a company has been in operation is used to calculate AGE (Issa et al., 2022). Total debt is divided by total assets to get the LEV (Crisóstomo et al., 2020; Li et al., 2018).

5.2 Description of the Model

The purpose of this research is to evaluate governance and firm-specific features over 6 years as a predictor of SI for publicly traded financial and non-financial firms. As a result, the research employed an equation-based panel regression model:

\[
SI_{it} = \beta_0 + \beta_1BSZE_{it} + \beta_2BOIND_{it} + \beta_3BGD_{it} + \beta_4CSZE_{it} + \beta_5AGE_{it} + \beta_6LEV_{it} + \ldots + \mu_{it}
\]

Where:

- \(\beta_0\) symbolizes the beta coefficient value of the panel model regression
- \(\beta_1-\beta_6\) indicate beta coefficients of the descriptive variables for the study
- \(\mu\) represent the regression model’s error term
- BSZE = number of directors on the board, BOIND = ratio of independent directors, BGD = ratio of female directors, CSZE = company size, AGE = years since the firm was established, and LEV = leverage. \(i\) signifies the number of firms, and \(t\) implies the number of years.

Table 1 presents the operational measurements and sources of variables used in the equation.

Table 1. Operational measurement of variables

<table>
<thead>
<tr>
<th>Dependent Variables; Code</th>
<th>Independent Variables</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainability Initiatives; SI</td>
<td>Board size; BSZE</td>
<td>Total score values for Sustainability disclosure are aggregated from all sub-scores of SI.</td>
</tr>
<tr>
<td>Independent Variables</td>
<td>Board independence; BOIND</td>
<td>The number of independent directors to the total number of board members.</td>
</tr>
<tr>
<td></td>
<td>Board gender diversity; BGD</td>
<td>Percentage of females to the total number of board members.</td>
</tr>
<tr>
<td></td>
<td>Company size; CSZE</td>
<td>Measured as a natural log of total assets.</td>
</tr>
<tr>
<td></td>
<td>Company Age; AGE</td>
<td>The age of the firm.</td>
</tr>
<tr>
<td></td>
<td>Company Leverage; LEV</td>
<td>Measured as total debt to total assets.</td>
</tr>
<tr>
<td></td>
<td>(\mu)</td>
<td>(\mu)</td>
</tr>
</tbody>
</table>

Source: Author’s Compilation

6. Results
The results of the study’s descriptive statistics, correlation analysis, and panel regression are presented below.

Table 2 presents the summary of descriptive statistics below,

Table 2. Summary of descriptive statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI</td>
<td>0.368615</td>
<td>0.061588</td>
<td>0.2679</td>
<td>0.555349</td>
</tr>
<tr>
<td>BSZE</td>
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<td>3.490765</td>
<td>6.0000</td>
<td>22</td>
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<td>BOIND</td>
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<td>3.33269</td>
<td>0.0000</td>
<td>20</td>
</tr>
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<td>BGD</td>
<td>0.200711</td>
<td>0.102396</td>
<td>0.0000</td>
<td>0.555556</td>
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<td>CSZELOG</td>
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<td>1.572451</td>
<td>16.920</td>
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</tbody>
</table>

Based on a compilation of descriptive data for the characteristics shown in Table 2, we may infer that there are, on average, 13 directors serving on the corporate boards of the financial and non-financial businesses that have been validated by CSRHUB. There can be up to 22 directors on the board, but there must be at least six. Women make up roughly 20% of board members, even though certain corporations lack both independent non-executive directors and women on the board. At least half (at most, 55 percent) of the board members should be women. The average number of independent non-executive directors serving on the boards of the Nigerian financial and non-financial companies examined and ranked by CSRHUB is 5. With the number of independent and non-executive directors limited to 20, SI practices have increased to meet the needs of the larger board.

Furthermore, the CSZE, measured as a natural log of total assets, has an average value of 20.39%. The sample firm’s age is between 7 and 98 years old, with an average mean of 46.5. From the descriptive statistics, we may infer that, on average, companies used 70.9% leverage to fund their operations, which could affect the overall level of SI. The SI may change if a company increases its reliance on debt financing to fund its operations. Also, the SI of both financial and non-financial companies is low, ranging from a mean of 36.9% to a maximum of 55.54%.

Table 3 presents the correlation analysis of the study variables below,

Table 3. Correlation Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tbody>
<tr>
<td>1. SI</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2. BSZE</td>
<td>0.0292</td>
<td>1.0000</td>
<td></td>
<td></td>
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<tr>
<td>3. BOIND</td>
<td>0.1936**</td>
<td>0.3784***</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. BGD</td>
<td>0.0406</td>
<td>-0.07</td>
<td>0.1080</td>
<td>1.0000</td>
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<tr>
<td>5. CSZELOG</td>
<td>0.101</td>
<td>0.5631***</td>
<td>-0.1864</td>
<td>-0.1924*</td>
<td>1.0000</td>
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<tr>
<td>6. AGE</td>
<td>0.1855**</td>
<td>-0.0054</td>
<td>0.3942***</td>
<td>0.1493*</td>
<td>-0.3662*</td>
<td>1.0000</td>
</tr>
<tr>
<td>7. LEV</td>
<td>-0.0632</td>
<td>0.3145***</td>
<td>-0.2706</td>
<td>-0.1739*</td>
<td>0.6084***</td>
<td>-0.2003*</td>
</tr>
</tbody>
</table>

Prob>Chi^2 0.0051 ***, ** and * indicate 1%, 5% and 10% significance levels, respectively

Table 3 displays the explanatory and predictive variables’ correlation matrix. All of the positive associations between SI and the study’s governance qualities were found for BSZE, BOIND, and BGD. This indicates that the SI is positively affected by an increase in the size of the board, the representation of women on the board, and the proportion of independent non-executive directors. Similarly, CSIZE is positively associated with SI because larger organizations are better equipped to put SI policies and strategies into action. Financial
and non-financial companies in Nigeria that were evaluated by CSRHUB had varying levels of SI because of their differences in size. The age of the company is also associated favorably with SI.

However, LEV is negatively correlated with SI, meaning that the more a company relies on liabilities to fund its operations, the less SI it will have as a result of having to pay higher interest rates than necessary. This could reduce the amount of money available for the firm to invest in desirable economic, social, environmental, and governance practices.

A positive or negative correlation between the independent variables is statistically significant. There is an inverse correlation between the age of a company and its BGD. This suggests that, regardless of the age of the company, boards with more female members are more likely to prioritize issues of social and environmental responsibility. Likewise, there is a negative correlation between CSZE and LEV. The greatest relationships between the variables are all less than or equal to 0.61; hence, the relationship matrix also displays that there is no multicollinearity between the predictors.

Table 4 presents the different kinds of regression analysis conducted on the variables for the study below.

<table>
<thead>
<tr>
<th>variables</th>
<th>OLS (Coeff.)</th>
<th>OLS (Coeff.)</th>
<th>z-stat</th>
<th>OLS (Coeff.)</th>
<th>OLS (Coeff.)</th>
<th>t-stat</th>
<th>t-stat</th>
<th>PCSE (Coeff.)</th>
<th>PCSE (Coeff.)</th>
<th>PCSE (Coeff.)</th>
<th>PCSE (Coeff.)</th>
<th>PCSE (Coeff.)</th>
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<th>PCSE (Coeff.)</th>
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<td>cons</td>
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<td>-0.04</td>
<td>0.224553</td>
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<td>0.618</td>
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<td>BOIND</td>
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<td>0.01199</td>
<td>2.07</td>
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<td>0.01429</td>
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<td>0.26</td>
<td>-</td>
<td>0.04235</td>
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<td>0.00074</td>
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<td>CSZE</td>
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<td>0.000675</td>
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<td>0.000402</td>
<td>1.01</td>
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<td>0.003975</td>
<td>2.67</td>
<td>0.011519</td>
<td>0.011519</td>
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<td>3.52</td>
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<td>0.1904</td>
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<tr>
<td>Prob&gt;Chi²</td>
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<td>0.0051</td>
<td>0.0009</td>
<td>0.0009</td>
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</tbody>
</table>

Note: ***, **, and * indicate, 1%, 5%, and 10% significance levels, respectively.

Table 4 displays the outcomes of the panel corrected standard error (PCSE) and fixed effect model (FEM) regressions in addition to the ordinary lease square (OLS) and FEM regressions. The results of the PCSE regression provide more insight into how governance features and firm-specific features affect SI. The Hausman specification test’s chi-square result is significant (p > 0.000), indicating that the explanatory variables work together to determine SI for both financial and non-financial enterprises in Nigeria. CSRHUB offers ratings and rankings for both types of businesses. This helps us make sense of the results of the PCSE estimation.

Companies’ SI is not dependent on the number of directors serving on the board, according to the regression result (Z > -0.32 and P > Z 0.749). The negative correlation between BSZE and SI is consistent with the
results of prior investigations, such as those by Htay et al. (2012) and Hussain et al. (2018). Simon et al. (2020) also discovered that among listed manufacturing enterprises in Nigeria, BSZE had no appreciable impact on environmental SI. Hence, H1 is rejected.

Indicating that an independent board does encourage a high level of SI, the BOIND result is positive and highly significant at 5% (Z=4.37 and P=0.000). This discovery runs counter to others, such as Akbas (2016), who did not establish a connection between BOIND and environmental sustainability. This, however, is in line with the empirical findings of Ahmad et al. (2017) and Mousa et al. (2018), who found a positive correlation between the number of independent directors and the level of SI. BOIND, according to Hörisch et al. (2020), can shift stakeholders’ mindsets about sustainability practices and increase the return on investment for those stakeholders. Therefore, hypothesis 2 is accepted.

Since BGD was found to not affect SI (Z > 0.4 and P > Z 0.691), it follows that a company’s SI is not dependent on the percentage of women serving on its board of directors. This finding agrees with earlier empirical research from groups like Glass et al. (2016) and Suciu et al. (2021). This discovery runs counter to others showing that the presence of women improves environmental and social performance and raises the overall degree of social intelligence (SI), such as Bann et al. (2021), Naveed et al. (2021), and Ben-Amar et al. (2017). In line with our findings, hypothesis 3 is rejected.

The regression result indicates that firm size has a positive and statistically significant (P<0.05) effect on SI, in addition to other firm-specific variables like CSZE and firm age. The coefficient of firm size is 0.000152. It has been shown in the literature (Aksoy et al., 2020; Pham et al., 2021; Ja’afar et al., 2021) that the size of a company significantly affects its sustainability practices concerning social and environmental issues, suggesting that the larger the company, the higher the level of SI. The empirical findings of Benjamin et al. (2017), showing firm age is strongly and positively connected to environmental sustainability practices, are supported by the correlation between firm age and SI (Z>6.87 and P>Z 0.000). However, LEV does not have a major impact on SI (Z > 0.17 and P > Z 0.862), which runs counter to our expectations. This finding illustrates how the firm’s ability to assume sustainable growth is impacted when debt is used to finance the majority of activities. This is consistent with Bashiru et al. (2022). But this contradicts the empirical findings by Yang and Lai (2021), who found a direct relationship between financial leverage and SI. With an R-squared value of 0.1824, this study’s explanatory variables explain just 18.24% of the variation in SI. The remaining 81.76 percent can be attributed to factors outside the scope of this analysis.

6.1 Discussion and Conclusion

Using PCSE regression analysis, this study attempts to empirically use governance attributes and firm-specific features as determinants of SI to explore their effect on financial and non-financial companies rated and ranked by CSRHUB in Nigeria between 2016 and 2021. The sample size is 156 observations. The research works toward a conclusion about the impact of governance attributes and firm-specific features on SI. Six (6) hypotheses were formed on the impacts of BSZE, BOIND, and BGD as well as firm-specific variables including CSZE, AGE, and LEV on SI, and data was composed utilizing panel data from the annual reports and accounts of registered financial and non-financial businesses. The legitimacy and stakeholder theories provided the basis for the hypothesis by making predictions about the beneficial effects of the independent variables on SI.

The PCSE result shows that the LT and STs are unsupported because the company’s BSZE and BGD have no meaningful influence on SI. BOIND, on the other hand, is associated favorably with SI. The results of this study lend credence to ST. Therefore, the level of SI rises as the number of independent directors grows. This is due in large part to the independent directors’ wide range of professional backgrounds and perspectives. The independent directors’ increased engagement with stakeholders leads them to view SI as a corporate policy with the potential to improve communications with the surrounding community, boost the company’s profile, and yield tangible advantages.

Positive and statistically significant effects of CSZE and firm age on SI are also shown. As a result, major firms provide a lot of money and a better chance to admire fiscal restraint in expanding sustainability practices.
due to the years they have been in operation and the amount of expertise they have amassed. However, the research did not find evidence for the hypothesis that leverage improves SI by reducing debt-service expenses. Based on our findings, we conclude that BOIND and other governance traits, as well as company-specific variables like CSZE and firm age, significantly influence the CSRHUB rankings and ratings of both financial and non-financial organizations in Nigeria.

6.2 Practical and Social Implications

The findings of this study should convince businesses that increasing the number of independent members on their boards is a fruitful way to boost SI and speed up the process of sustainable growth. Finally, this work has important implications for regulation and policy. Consequently, policymakers and regulators can use the study’s findings to propose a board structure that will guarantee the adoption of SI that is good for society and the environment.

7. Limitations and Suggestions for Future Study

There are limitations to this study that must be taken into account. In the first place, the study exclusively looks at Nigerian companies that CSRHUB has analyzed and ranked. Therefore, it would be inappropriate to take a broad view of the study’s findings to all firms trading on the Nigerian Stock Exchange. Since most Nigerian businesses aren’t covered by sovereign sustainability databases like Datastream, Thomson Reuters, and the Dow Jones Sustainability Indices, we can only provide data for the years 2016–2021. The Internet has made it possible for many companies to distribute sustainability reports to the public. Data for this study was painstakingly extracted from the company’s annual financial report as well as other publications and the site itself. Even though this study only observed the influence of some corporate governance traits on SI and other control features that might affect SI, future research could look at other factors, such as foreign shareholding and sustainability committees, as potential predictors of SI. The factors that affect SI in both developed and developing nations can be compared and contrasted. Despite its flaws, the study contributes to the body of knowledge by demonstrating that increasing the number of independent directors boosts SI.

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References


