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EFFECT OF BOARD ATTRIBUTES ON RISK DISCLOSURE OF LISTED INDUSTRIAL GOODS COMPANIES IN NIGERIA

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Abstract

The past financial crisis and the winding-up of major firms worldwide highlighted the need for robust risk management and reporting, supported by strong corporate governance. This study examined how board attributes affected the risk disclosures of industrial goods companies listed on the Nigerian Exchange Group as of December 31, 2023. The research design used in this study is ex post facto. The 13 industrial goods companies listed comprised the study's population. The data, which covered ten (10) years period from 2014 to 2023, was taken from the industrial goods companies' publicly available financial statements. By using a dichotomous "1" if a company discloses risk in its financial statements and a "0" otherwise, to ascertain how risk disclosure was measured. The analysis method used in this study is logistic regression, and STATA version 16 is the analytical tool. According to the findings, the degree of risk disclosure by Nigerian industrial goods companies is significantly impacted by board size, board independence, and board gender diversity. It concludes that industrial goods companies can improve their risk disclosure. According to this study, boards in Nigeria's industrial goods sector should include a variety of perspectives, including nationality, specifically for independent directors whose experience can add value to the companies, as well as gender and expertise.

Keywords: Board Attributes, Risk Disclosure, Industrial Goods Companies.

1.0 Introduction

Risk disclosure is the sharing of information about a firm's risks and uncertainties at a particular point in time; it is often considered a crucial aspect of corporate governance. A strong risk disclosure helps stakeholders gauge a company's growth and make informed decisions. The quality of risk disclosure is complex, having multiple aspects such as relative quantity, depth, coverage of risk types and outlook of risk management (Oloruntoba & Fodio, 2023). According to the ICAEW (1997) and Linsley and Shrives (2006), there are several types of risk that can be identified which include financial risks (e.g. liquidity risk, exchange rates, and interest rates), regulatory risks (e.g. financial regulations, trade/tariff policies and tax policy changes), operational risks (e.g. unhappy customers or defective goods or services), integrity risks (e.g. dishonest behaviour and earnings manipulation), and strategic risks (e.g. rivals and industry-associated risks).

The board of directors keeps a track of the company's development, guides management, and enhances the relationship between the company and its shareholders. The studies reveal that board composition, independence, size and diversity have impacts on corporate governance and risk disclosure. A good board ensures transparency, accountability and integrity for the interests of the stakeholders. Board attributes influence risk disclosure as supported by theories such as resource dependence and agency theory. Independent directors encourage the disclosure of information and establish a good reputation as watchdogs (Torea et al., 2016). Women directors present new viewpoints and contribute to improve decision making and organizational knowledge (Banerjee et al., 2024).

Although disclosing risks is critical, the majority of the research has been conducted in developed countries and there is a lack of research in developing countries like Nigeria. This study, therefore, aims at filling this gap by investigating the effect of board attributes on the quality of risk disclosure in industrial goods firms in Nigeria. This study provides insights for standard setters, policy makers, and stakeholders for the relationship between board characteristics and the quality of risk disclosure. This is particularly significant in emerging markets where companies could have different challenges and risks that could affect the disclosure of risk.

This research meets the need for further research in board attributes and risk disclosure (Khlif & Hussainey, 2016), which contributes to the enhancement of the knowledge of corporate governance and risk management in emerging economies. The findings are relevant not only to risk disclosure and the development of transparency and accountability, but also to policy makers, standard setters and companies interested in enhancing risk disclosure. The study aims to provide a clearer understanding of how board characteristics are related to risk disclosure; thereby, contributing to a strategy for improved risk disclosure and governance in industrial goods companies of Nigeria.

To guide the study, the following null hypotheses are formulated on risk disclosure quality in industrial goods companies.

H01: Board independence has no significant effect on the risk disclosure quality of quoted industrial goods companies in Nigeria

H02: Board size has no significant effect on risk disclosure quality among quoted industrial goods companies in Nigeria

H03: Board gender diversity has a significant effect on risk disclosure among quoted industrial goods companies in Nigeria

2.0 Literature Review

2.1 Conceptual Review

Board Attributes

"Board attributes" is a combination of the terms "board" and "characteristics." Impairment of the former is referred to in Section 334 (1) of the Companies and Allied Matters Act 2020 (as amended) while the selection of managers and the management of the operations of the organisation is the preserve of the board of directors otherwise referred to as the board. The last one is a characteristic or observable feature of a person or object. Thus, internal corporate governance mechanisms that improve the board's attributes may be considered as board attributes. The basic role of the board as an administration is to ensure that the financial reporting of the organization is on track and under control (Anderson et al., 2004).

Board Independence

The code stipulates that the Nigerian Securities and Exchange Commission (SEC) releases corporate governance guidelines for public companies (SEC, 2018). An independent director is an independent, non-substantial shareholder of the company whose shareholding, whether directly or indirectly is not more than 0.1% of the paid-up capital of the company. Also, the director must have had a prior employment with the company or a business or professional relationship with the company. Independent or free directors have been found to foster openness of corporate disclosures and develop a good image of being knowledgeable watchdogs (Samaha et al., 2015). Thus, the appointment of independent directors is viewed as a solution to the problem of agency, because it can better supervise the actions of management (Allini et al., 2016).

Board Size

Board size refers to the number of members on the board; there is no standard on what is an ideal number of board members. Several studies have proposed varying numbers of board members to be ideal. The number of directors on a board is helpful in speeding up decision making and is immune to manipulation by the management; some schools of thought argue that a small board is more effective. Kalsie and Shrivastav (2016) suggest that a smaller board may prove more effective, less bogged down with questions of bureaucracy and be more able to supervise financial reporting. Research has found that a bigger board size is associated with greater effectiveness and information-sharing (Abad et al., 2017). Agency theory suggests that larger boards are more likely to be effective in monitoring as they bring a broader breadth of knowledge and resources (Lu et al., 2022; Bruce & Nada, 2020). These boards are able to monitor managers, and the diversity of perspectives among members can hinder management's control over these boards, which can lead to corporate disclosure (Muhammed et al., 2024). In fact, with bigger size of the board a company may have a higher percentage of members who possess financial and accounting backgrounds, which may influence the managers' decision regarding voluntary disclosure and thus increase the level of risk disclosure (Elzahar & Hussainey, 2012). However, Allini et al. (2016) looked at the effect of the board size on risk disclosure, and other risk disclosure studies. Alkurdi et al. (2019) and Elshandidy and Neri (2015) indicated positive effect while Al-Maghzom et al. (2016) indicated negative effect.

Board Gender Diversity

The ratio of female to male board members is known as board gender diversity. According to the literature in evolutionary biology, females are well-suited to particular endeavours due to the demands of nature. This has led to arguments and counterarguments over the significance of women's characteristics for good governance. Women are careful, risk averse, knowledgeable in accounting and finance and can make sound decisions as stated by Wang et al. (2024).

Diversity in experience, background and attitude is seen as a benefit in the literature, especially in regard to corporate governance (Arvanitis et al., 2022; Zalata et al., 2021). I can contribute various points of view and opinions in the decision-making process.

In fact, gender diversity on the board is an effective business performance predictor and can broaden the knowledge (Lopez-Cabarcos et al., 2023). Female Directors appear to be more active and to take part in board meetings and monitoring committees than their male counterparts (Kanadli et al., 2018). The results of Allini et al. (2016) showed that increased women participation on the board positively impacts risk disclosure.

Risk Disclosure Quality

Risk disclosure is crucial for companies, as it provides essential information about opportunities, hazards, and threats that may affect the organization now or in the future, helping stakeholders understand potential risks and management strategies (Fijałkowska & Hadro, 2022). It also is vital in risk watching and early detection of potential issues to enable proactive measures to prevent issues (Muhammed et al., 2024).

According to Elshandidy and Neri (2015), Risk Disclosure Quality (RDQ) can be defined as the communication of information about a firm's strategies, operations, and other external factors that might affect the expected results, and the disclosure of the firm's specific variances in the expected cash flows. Specifically, Elbannan & Elbannan (2014) suggested that risk disclosure is a set of information disclosed in the financial statements, which

includes the management's estimates and judgments, and the dependence of the market-based accounting policies including impairment, derivative hedging, financial instruments and fair value, in addition to the disclosure of concentrated operations, non-financial information on a firm's plan, recruiting strategy, and other operating, economic, political and financial risks.
Risk disclosure can be split in Mandatory Risk Disclosure (MRD) pursuant to regulations or in Voluntary Risk Disclosure (VRD) which gives more explanations than the required ones. This separation allows the audience to have a more thorough understanding of the extent and type of risk information that is provided (Alkurdi et al., 2019).

2.2 Empirical Review

In Nigeria, the influence of board attributes on risk disclosure has been a subject of much scholarly research, given its critical role in investor confidence and corporate governance. The interconnection between these two has been studied from multiple perspectives, with different aspects of the boards being associated with more or less transparency and quality of risk disclosures. Naburgi et al., (2024) studied the effect of board attributes in risk disclosure practices of industrial goods companies in Nigeria. The study adopted a quantitative research design and secondary data from the financial statements of firms listed in the Nigerian Exchange Group (2014 – 2020). The research revealed that the independence of the board, the size of the board, and the gender diversity of the board are significant factors affecting the level of risk disclosure practices. The more independent directors a company had and the more gender-diverse the board, the more likely the company was to provide comprehensive risk information disclosure. The study highlights that these qualities help in improving governance and, in turn, accountability, and are crucial to ensuring transparency in the corporate world.

Likewise, Mamman et al (2024) studied the influence of board characteristics such as financial expertise and independent directors on financial disclosure in the industrial goods sector of the Nigerian stock exchange. The authors applied a panel data technique and regression analysis to determine the effects of different board characteristics on financial disclosures based on a data set of listed industrial goods companies from 2010 to 2020. They conclude that boards of directors with members who are financially literate and more independent tend to provide detailed financial information. Interestingly, no significant association was found between board gender diversity and financial disclosures. The authors suggest that Nigerian companies need to strengthen independence and financial competence of their boards to foster their disclosure practices and in response to the rising expectation of stakeholders for transparency.

Raji et al., (2024), conducted a study on the relationship between corporate risk disclosure and financial performance in a separate study. The study was conducted using a longitudinal approach with the financial statements of listed industrial goods companies in the period 2010-2021 analyzed using correlation and regression analysis. The result shows that the risk disclosure affects significantly the financial performance of the companies with higher scores of risk disclosure, higher financial performance of the companies. It was however found that operational risk disclosure negatively related to performance. This study highlights the importance of proper financial risk management and financial risk disclosures to improve a firm's financial condition and achieve investors' expectations.

Yoko et al., (2023) examined the effect of Board Nationality and Gender Diversity on Risk Disclosure in Publicly Listed Industrial Goods Companies in Nigeria. This study was of ex post facto type. The study was done on a population of 13 companies listed in the Industrial goods sector of the Nigerian stock exchange out of which 11 companies gave birth to the research companies since the companies were subjected to filters. Audited financial statements of these companies were used as sources of data for the last 10 years, from 2013 to 2022, and a checklist of 22 items was used to assess the level of risk disclosure. Data was analyzed by multiple regression techniques, with Stata Version 16 being used as the analytical tool. The findings indicated that the nationality of the board has a positive and significant impact on the level of risk disclosure but the relationship between board gender diversification and risk disclosure was not statistically significant. They suggested that the Nigerian Industrial Sector should have boards that are diversified in membership with foreign directors who have wide experience to assist in decision making on risk information disclosures.

Also, Zainab et al., (2019) carried out a study on the influence of board and corporate characteristics on risk management disclosure in the insurance industry in Nigeria. The study adopted a mixed methods design, which comprised of quantitative data from financial reports of listed insurance companies and qualitative data from in-depth interviews with stakeholders. The study included the years 2015 to 2019, and the findings suggested that the existence of dedicated risk management committees and regular meetings greatly influenced the practices of risk management disclosure. Conversely, disclosure was found to be lower with larger boards. The study highlights the need to create specific committees and carry out regular risk management discussions to enhance governance and transparency.

Alkurdi et al. (2019) studied the relationship between risk disclosure and Corporate Governance (CG) characteristics of Jordanian listed companies in 2019. Two disclosure forms (mandatory and voluntary) were used to extract information about risk related disclosure from the study and the CG variables from the firms' annual reports from 2008 to 2015. The final sample of this study included all listed banks in Jordan (15 banks) in the year 2008-2015. The findings indicate that the CG characteristics including size of the board, independence of the board (non-executive directors), division of labour, audit committee meetings are statistically significant in enhancing the voluntary risk disclosure (VRD) while audit committee size is statistically significant in enhancing the Mandatory Risk Disclosure (MRD). MRD was greatly influenced by independent directors. The research shows that businesses that are more compliant with the mandatory regulations are more likely to disclose risks.

Kaifah et.al. (2019) examined the relationship between risk disclosure and corporate governance characteristics. This study looks into the following areas of corporate governance: auditor independence, auditor tenure, board size and gender of board. The list is based on Bursa Malaysia listed companies in the period of 2008 to 2017. A total of 721 companies are studied. It uses content analysis to assess the degree of risk disclosure. To explore this relationship, the multiple regression and descriptive statistical techniques were used in the study. The researchers found that there is an encouraging correlation between risk disclosure policies and multi-gender boards for Malaysian listed businesses. The study finds a positive relationship between independent directors' ratio and risk disclosure practices of the Malaysian listed companies.

The study of Munturi (2019) examined the correlation between risk disclosure and corporate governance aspects in Kenyan listed Companies. The aim of the study is to empirically analyse the relationship between corporate governance and risk disclosures in 48 non-financial listed companies in Kenya. The content of annual reports of the companies under

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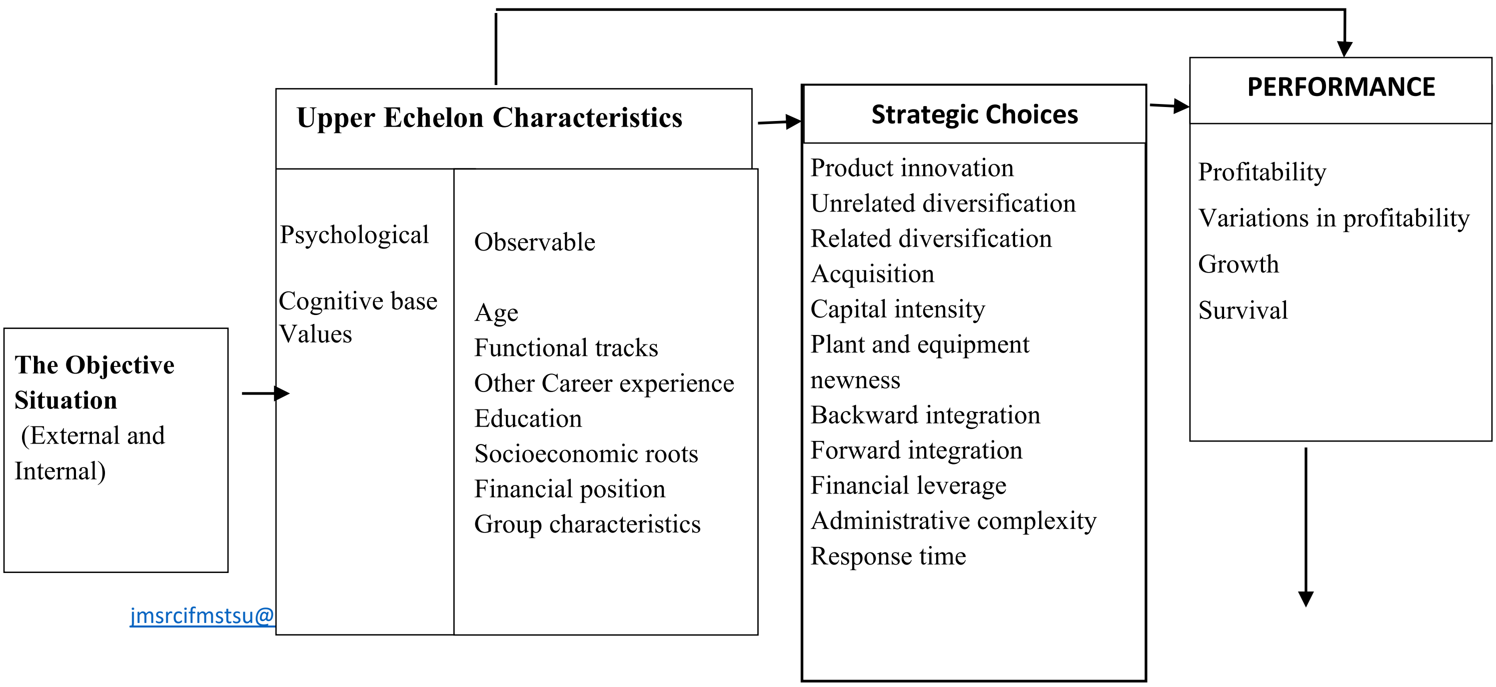
study from 2010 to 2016 was analyzed to determine the risk disclosure index for each company. To investigate the correlation between the variables, panel data analysis was used. The findings revealed that the percentage of non-executive directors, the dispersion of ownership, the percentage of foreign ownership and the percentage of female directors were significantly affecting the number of risk disclosures made by the companies studied. Not only is there a timing issue but an external validity issue as well.

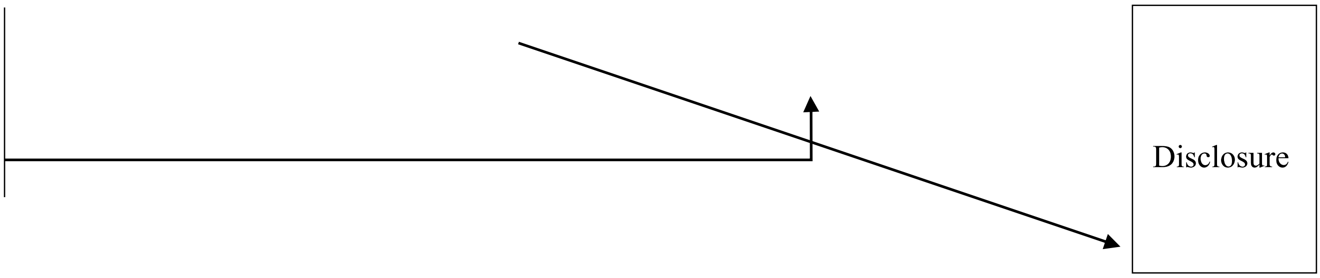
Allini et al. (2016) suggest that the composition of the board could have an influence on risk disclosure level from director and business-specific characteristics. For years, the state has preserved a considerable dignity for the listed companies in Italy. This study is aimed at exploring the disclosure of risks in the MCs of the SOEs listed on Italian Stock Exchange (ISE) during the period 2008-2011. Board diversity and board attributes were two variables explored. The hypotheses in this study were tested using cross-sectional data, with ordinary least squares (OLS) regression with robust standard errors. The main findings show that only the board diversity variable has a significant effect on the disclosure of SOEs' risk.

2.3 Theoretical Framework: **The Upper Echelon Theory**

In their groundbreaking study, Hambrick and Mason (1984) integrated the ideas of demographic research and the dominant coalition. The authors proposed a connection between top management teams with particular demographic profiles and organisational effects. Furthermore, top management traits, particularly demographic traits, may influence strategic decision-making and, consequently, performance, according to the upper echelons theory. According to this theory, the fundamental strategic choices made by these key corporate managers are influenced by the values and background knowledge of corporate directors. Additionally, Carpenter and Sanders (2004) and Hambrick (2007) asserted that observable characteristics, e.g., a cognitive base that guides the decisions of top directors, may be practically represented by age, tenure, and practical experience. Additionally, the upper echelons theory is divided into groups based on several significant components. Demographic characteristics impact performance and strategic decision-making, as noted by Carpenter and Sanders (2004) and Hambrick (2007). Therefore, the idea was expanded to include determinants of risk disclosure in this study, examining whether top board features could affect the factors that influence risk reporting in industrial goods companies.

Figure 1: The upper echelons conceptual model





Carpenter and Sanders (2004); Hambrick (2007) Upper echelons perspective of organisations.

As stated above, the framework of adapted upper echelons is based on three main concepts: First, the strategic decisions taken by organizations, which are the result of the values and cognitive bases of the key players and leading board members; second, the values and cognitive bases of members of the adapted upper echelons, which are effected by the observable traits such as backgrounds and education; and third, notable institutional consequences linked to the behaviors of the members of the adapted upper echelons. This theory is that an organisation's success only reflects the attitude of its highest-ranking board members. This can either indirectly impact the fourth dimension (disclosure) in the above mentioned framework or it can directly impact because of the characteristics of the upper echelons theory. In some cases, risk disclosure can mean the difference between life and death for an organization. Furthermore, this model is important in identifying important institutional effects such as risk disclosure. It also provides us with a chance to observe key considerations that influence board diversity in risk disclosure. Based on this theory, top management teams with specific demographics are linked to various organizational outcomes (Carpenter & Sanders, 2004; Hambrick, 2007).

3.0 Methodology

This study examines potential causes and effects of the variables of interest using an ex post facto research design. The study's population comprises 13 industrial goods companies that were listed on the Nigerian Exchange Group (NGX) as of December 31, 2023. The study included all companies for data collection because the study population is small and the data is easily accessible to all of them. From 2014 to 2023, data were gathered from the audited annual reports and accounts of all publicly traded industrial goods companies. Given the nature of the required data, its accessibility, and the convenience of comparing results, annual financial statements are the best method for data collection. The study employs multiple regression as its analytical technique in STATA version 16. The Hausman specification test was conducted to evaluate endogeneity with the panel data. Additional diagnostic tests included the Breusch-Pagan test for heteroscedasticity and the Variance Inflation Factor (VIF) test for multicollinearity, which help to evaluate the model's effectiveness and the credibility of the findings. This research focuses on risk disclosure as the dependent variable while examining board independence, board size, and board gender diversity as independent variables.

In order to test the hypotheses of the study, the following multiple regression model was estimated:

RDQ = f (BIND, BZ, BGD) ………………………………... (1)

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However, the model is reconstructed as:
RDQ = α + β1BINDit + β2BZit + β3BGDit +µit ……………… (2)
Where:
RDQ = Risk Disclosure Quality, BIND = Board Independence, BZ= Board Size, BGD= Board Gender Diversity, α= constant, it = firm *i* in time *t*, µ = error term, β1, - β3 = coefficients

Table 1: Variables Measurement

Variables	Type	Measurement	Source
Risk Disclosure Quality	Dependent	measured by Dichotomous "1" if a company discloses risk in the financial statement otherwise "0"	Alini and Allini (2016)
Board Gender Diversity	Independent	Ratio of women on the board to total members in the Board of Directors	Muturi (2019)
Board Independence	Independent	Ratio of independent non-executive directors to the total number of directors	Ibrahim, Habbash and Hussainey (2019)
Board Size	Independent	Total number of executive and non-executive directors on the board.	McIntyre (2007)

Source: Author's Compilation, 2024.

4.0 Results

Descriptive Statistics

The characteristics of the variables are described in this section, including the standard deviation, minimum, maximum, and mean of each variable.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
RDQ	130	.8153846	.3894862	0	1
BIND	130	.1149759	.1291845	0	.5
BZ	130	8.553846	2.957218	4	18
BGD	130	.1886054	.1630381	0	.6666667

STATA Output, 2024.

Correlation Matrix

The Pearson correlation matrix illustrates the relationships between the influencing and influenced factors, as well as the interactions among all unrelated variables. This section showcases the correlation between the dependent variable, which is the quality of risk disclosure, and the independent variables, such as board independence, board gender diversity, and board size.

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Table 3: Correlation Matrix

	RDQ	BIND	BZ	BGD
RDQ	1.0000			
BIND	0.2769	1.0000		
BZ	0.2712	0.4900	1.0000	
BGD	0.1728	0.3411	0.0365	1.0000

STATA Output, 2024

Table 4: Summary of Logistics Regression Result

FRT	Coefficient	Z	p-value
BIND	-1.0221	-2.87	0.004
BGD	4.3438	2.25	0.024
BZ	12.1366	7.55	0.000
Pseudo R^2	0.5966		
LR Chi^2	903.82		
Prob> F	0.0000		

STATA Output, 2024.

5.0 Discussion

Table 2 above provides a summary of the descriptive statistics concerning the variables. The dependent variable for the study, risk disclosure (RD), ranges from 0 to 1, with a mean of 0.8154. This indicates that annual reports from industrial goods companies differ widely in the extent of risk disclosure. As shown in Table 2, the independent variable of board independence has a mean value of 0.11498 and a standard deviation of 0.1292, with a range from 0.0 to 0.5. The results clearly illustrate the considerable variation in the number of outside directors on the board.

Furthermore, the descriptive statistics reveal that board size ranges from 4 to 18 members, indicating substantial variability in board composition across companies in the industrial goods sector. This is further supported by a mean of nine and a standard deviation of three. Meanwhile, the percentage of female directors on the boards of the sampled companies ranges from 0% to 67%, with an average of 18% across all firms. This finding suggests that the majority of boards in the sample are composed primarily of male directors, with a notable number having no female representation.

The correlation matrix for the variables used in the study is shown in Table 3, indicating positive correlations between risk disclosure and board independence (0.2769), board size (0.2712), and board gender diversity (0.1728).

The logistic regression analysis presented in Table 4 indicates that the combined influence of the explanatory variables in the model accounts for roughly 59% of risk disclosure, as indicated by the Pseudo R2. In contrast, the remaining 41% is attributable to additional factors related to the board that are not included in the model. The F-statistic of 903.82, which is significant at the 5% level, suggests that the model is well-fitted and provides strong evidence that board characteristics have a significant impact on the risk disclosure practices of industrial goods companies listed in Nigeria.

The analysis of each explanatory variable, summarized in Table 4, shows that board independence significantly affects the risk disclosure practices of quoted industrial goods companies in Nigeria. This is supported by a p-value of 0.004, indicating significance at the

5% confidence level. Therefore, the research rejects the hypothesis that board independence does not significantly influence the risk disclosure practices of these companies.

The study also explored how board gender diversity affects the risk disclosure levels of quoted industrial goods companies in Nigeria. Table 4 reveals a positive and significant association between board gender diversity and risk disclosure among these firms. This is reflected in the coefficient and probability values of 4.3438 and 0.024, respectively. This indicates that a board with both male and female members plays a significant role in determining the extent of risk information disclosed. Consequently, the study disproves the hypothesis that gender diversity does not affect the risk disclosure of Nigerian industrial goods companies listed on the Nigerian Exchange Group.

The results in Table 4 clearly indicate that board size positively influences risk disclosure for quoted industrial goods companies in Nigeria. The relationship between board size and risk disclosure was investigated, revealing a statistically significant connection (p-value = 0.000) with a coefficient of 12.1366. Therefore, the findings do not support the hypothesis that board size has no significant impact on the risk disclosure of Nigerian quoted industrial goods companies.

6.0 Conclusion and Recommendations

Previous research has underscored the significance of corporate governance codes in improving the disclosure of corporate risks and assisting in such disclosures. Understanding the factors that motivate companies to disclose risk-related information can help regulators and standard setters foster the adoption and improvement of these disclosures through corporate governance codes and reporting mandates. This study responds to recent appeals for further investigation in this field by empirically analyzing the effects of specific board characteristics on the risk-practice disclosures of industrial goods firms listed on the Nigerian Exchange Group from 2014 to 2023. The dependent variable, quality of risk disclosure, is assessed using a binary measure: a company receives a “1” if it includes risk information in its financial statements and a “0” if it does not. Building on existing literature, this research explores three board characteristics as independent variables that may affect the level of risk disclosure: gender diversity on the board, board independence, and board size.

The study’s results reveal a positive and statistically significant effect of board independence on risk disclosure, leading to the rejection of only the first hypothesis. This outcome supports the notion that external directors possess both the incentive and capability to enhance the quality of financial reports by promoting improved voluntary non-financial disclosures. External board members contribute valuable insights and expertise in market strategies that align with the firm’s objectives, thereby providing significant value to the company’s growth initiatives.

Additionally, the study concludes that board size significantly influences risk disclosure among industrial goods companies listed in Nigeria. This may be because a larger board strengthens oversight functions, offers various perspectives that help access essential resources while managing environmental risks, diminishes the CEO’s influence, and enriches the overall knowledge base through diverse board composition.

In summary, the study affirms that board gender diversity is associated with the degree of intended risk disclosure. Ensuring an appropriate board composition is crucial, as increased female representation introduces additional skills and perspectives that may not be possible with an all-male board.

Based on these findings, the study makes the following recommendations:
Given the persistent risks in a dynamic business environment, adopting effective mitigation strategies is crucial to enhancing transparency and reducing information asymmetry. Therefore, companies are encouraged to improve risk disclosure at both qualitative and quantitative levels. Additionally, the study specifically recommends that Nigerian industrial goods companies structure their board composition with diversity in mind, including gender, expertise, and nationality. In particular, appointing independent directors with diverse backgrounds can contribute valuable insights and experiences, aiding in more informed decision-making regarding risk disclosure.

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