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CORPORATE GOVERNANCE AND ENVIRONMENTAL DISCLOSURE PRACTICES OF LISTED FIRMS: A COMPARATIVE STUDY OF NIGERIA AND SOUTH AFRICA

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Abstract

Despite increasing global attention to corporate sustainability and environmental responsibility, many firms in developing economies, particularly in Africa, still exhibit weak levels of disclosures. This limited transparency impedes stakeholders' ability to assess corporate commitment to sustainable practices and environmental stewardship. In this context, corporate governance mechanisms are presumed to play a vital role in driving voluntary disclosures, yet the extent to which board characteristics influence such practices remains under-explored across African countries. In light of this, this study presented a comparative analysis of the impact of corporate governance on environmental disclosures, among listed manufacturing firms in Nigeria and South Africa. A sample of 45 listed manufacturing firms was selected from each country, covering a ten-year period from 2014 to 2023. The study utilised secondary data extracted from the audited annual reports of the selected firms. A Random Ordered Logistic Regression model was employed to examine the influence of board size, board independence, and board gender diversity on the firms' disclosure practices. Regarding environmental disclosure, board size (p-value

0.013) and gender diversity (0.000) are significant in Nigeria, suggesting that larger and more gender-diverse boards promote better environmental transparency. In contrast, in South Africa, only board gender showed a negative significant effect (coefficient -0.031, p-value 0.001), indicating potential contextual and institutional differences in how diversity influences disclosure practices. The study concluded that corporate governance variables (board size, board gender and board independence) affect non-financial disclosures differently across countries, emphasizing the need for governance reforms tailored to national institutional environments. This supported the argument that a one-size-fits-all approach to corporate governance may be ineffective in emerging economies. The study contributed to the literature by offering comparative insights from two key African economies and extended understanding of how specific board attributes influence non-financial reporting. It recommended policy reforms that encourage board diversity and independence, alongside stronger enforcement of disclosure standards.

Keywords

Corporate Governance, Environmental Disclosure, Nigeria, Non-Financial Disclosures, South Africa, Sustainability Disclosure.

Background to the Study

The accounting and finance literature has focused a lot of emphasis on the disclosure of non-financial information, often known as sustainability reporting, corporate social responsibility reporting, or disclosure of environment, social, and governance information. In order to address the implicit and explicit inquiries of investors and other interested stakeholders regarding business operations and their effects, companies are urged to report on how they manage the economic, environmental, and social impact of their actions to global economies (Akileng, 2021).

Due to the expanding knowledge and comprehension of social and environmental subjects, this issue has captured the attention of scholars. Although environmental disclosure is still voluntary, a few nations, including the United Kingdom, France, Germany, Denmark, the Netherlands, and others, have particular legislative requirements for organizations to disclose voluntary facts in their annual reports (Rafique et al., 2017). Without engagement with its environment, no business can survive. This interaction with the community is a vital strategy for survival and thus enables it to be self-sufficient and reliant and above all, be sustainable. In order to achieve maximum sustainability in business operations, an organisation must minimize negative impacts like emissions, waste, social issues, and unfair treatment of business employees to the barest minimum. When this is achieved, then a company could be said to have performed well (Aifuwa, 2020).

Good corporate governance practices (in terms of the size, independence and diversity) in African nations, especially South Africa and Nigeria, serve a variety of purposes, including lowering transaction costs, interest paid on borrowed funds, reducing political unrest, and promoting the growth of the nation's capital market. Good corporate governance procedures are essential for increasing the firm's value and gaining access to outside capital (Rafique et al., 2017). With Good Corporate Governance (GCG), the authority of all parties in the company can be arranged and the supervisory function can be optimized to reduce the occurrence of carbon emissions and to help with environmentally friendly policies. The

Int. J. Bus. Strategy Innov.
Volume 01 | Issue 01 | 2026 | Page 15-38

existence of GCG is expected to reduce conflicts of interest that may occur that impede the progress of the company's performance (Andriana, & Panggabean, 2016).

A major issue facing contemporary organizations is corporate sustainability. The external environment has been greatly impacted by corporate activities, according to a growing body of research over the past few decades. For this reason, companies should answer more than just their shareholders (Mahmood et al., 2018). All countries are now concerned about sustainability. The Sustainable Development Goals (SDGs), which aim to eradicate poverty, safeguard the environment, and guarantee prosperity by 2030, were embraced by all United Nations (UN) member states in 2015.

In the age of sustainable development, stakeholders expect all businesses to raise awareness when fulfilling their corporate obligations, such as addressing issues related to human rights and global warming (Agnolucci & Arvanitopoulos, 2019). Stakeholders anticipate that the business will fulfill its vision and objective in a sustainable manner. The business needs to gain the trust of its stakeholders in order to fulfill its vision and goal. Maintaining trust is essential to achieving corporate sustainability, according to the Global Reporting Initiative (GRI) (Tjahjadi et al., 2021).

Compared to developed countries, corporate governance disclosure in developing nations typically features lower standards, less robust regulatory and legal frameworks, and limited enforcement capabilities. Additionally, there is often substantial state ownership of many private businesses, which can lead to weaker board effectiveness and independence. (Isukul & Chizea, 2016). A good corporate governance in developing countries should impact the reporting of companies in terms of sustainability and environment disclosure. One the major goal of any organisation is to have competitive hedge in the environment it operates, reports on what the organisation is doing in terms of corporate social responsibility, information on environment, carbon emissions, health and labor rights will help to achieve this goal. The main aim of this research is to examine the impact of corporate governance on companies' report regarding non-financial activities in developing countries with particular reference to Nigerian and South African companies. With the adoption of the 2030 Agenda for Sustainable Development and Directive 2014/95/EU, the European Union and the UN have taken steps toward sustainability throughout time (Gazzola, et al., 2020). Over the past few decades, adverse environmental effects have gained international attention. Concerns have been raised over the speed at which businesses are using natural resources for manufacturing. There is concern that the survival of both the current and future generations may be jeopardized if the current rate of resource depletion continues (Adinehzadeh et al., 2018).

Pona et al., (2021) posited that activities related to petroleum exploration, development, and production have caused a variety of environmental pollution, degradation, health risks, and socioeconomic issues for the oil-producing host communities in Nigeria's Niger Delta region over the past 55 years. Environmental pollution, detrimental effects on the environment and/or human health, adverse effects on terrestrial ecosystems, negative impacts on the regional economy, socioeconomic issues, and degradation of oil-producing host communities in the Niger Delta region have all resulted from the release of petroleum hydrocarbon and chemical-derived waste streams related to petroleum exploration and production. These issues make it very important for organisations to disclose as part of corporate reporting what is done to allow an enabling and conducive environment in its annual statement.

According to Green economy 2024 report, numerous environmental problems, such as deforestation, desertification, biodiversity loss, air pollution, and global warming, are currently plaguing South Africa. The lives and health of individuals are at risk due to these environmental problems. Food security and the ability of South African farmers to make a living are hampered by pollution, drought, and soil erosion. Diseases that are brought on by the heat also spread more widely as a result of global warming. Globally, there are likely more than five million unnecessary deaths yearly as a result of global warming (Zhao et al., 2021).

According to Mathee et al., (2018) South Africa ranks at 30 among 42 countries that account for 90% of deaths among children under the age of five years. Overall, it is estimated that exposure to environmental hazards is the cause of 33% of the global burden of disease with the highest share being borne by children. The World Health Organization estimates that in South Africa environmental factors are associated with the deaths of 124 in 100 000 children under the age of five year. The rural province of Limpopo, for example, has the highest level of child poverty (78.7%), while the rate in the Western Cape, where a considerably larger share of the population lives in urban areas, is 28.4%. These factors, together with rapid urbanisation and industrialisation, poor economic growth (associated with a growing informal sector and the proliferation of cottage industries (home-based work that may involve the use of hazardous materials) and weak enforcement of environmental health policies and legislation have resulted in large numbers of South African children, especially the poorest, being at elevated risk of simultaneous exposure to multiple environmental hazards in and around their homes

Up until now, developed nations like the United States, Canada, Australia, and other European nations have mostly looked at or researched the relationships between corporate governance and non-financial disclosures (in terms of environmental sustainability) (de Villiers et al. 2011; Ortiz-de-Mandojana et al. 2016; Perrault and Clark 2016; Delgado-Márquez et al. 2016). Developing nations, particularly those in Africa, are still far behind in this research, which will examine the influence of corporate governance on sustainability disclosures in publicly traded companies in Nigeria and South Africa.

This study examines corporate governance and environmental reporting in emerging economies like ‘Nigeria and South Africa. Moreover, the research selected Nigeria and ‘South Africa, two common law nations, in line with the study of Khlif et al. (2015), who also looked at the connection between corporate performance and social and environmental disclosure of Morocco and South Africa, two common law nations. Despite having identical legal systems, the corporate reporting frameworks for quoted corporations in these two big African countries differ somewhat (Ofoegbu et al., 2018).

The study's timely significance for the future of corporate reporting motivates the researcher to analyze it and present the results that will help clarify the current situation of corporate governance and environmental disclosure practices in emerging economies, with a focus on South Africa and Nigeria. This will give information about the degree to which corporate governance influences the environmental disclosure policies of South African and Nigerian businesses. This will also assist in demonstrating any parallels and contrasts, as well as the specifics of any discrepancies. The results of this study's analysis will provide some intriguing new perspectives on the pursuit of environmental transparency for Nigerian and South Africa businesses, government officials, policy makers, regulators and academics. In light of this, this study examines the impact of corporate governance on non-financial disclosure practices in Nigerian and South African corporations from 2014 to 2023 through the following states of action;

a) Investigate the impact of board size on environmental disclosure of listed firms in Nigeria and South Africa.
b) Investigate the impact of board independence on environmental disclosure of listed firms in Nigeria and South Africa.
c) Investigate the impact of board gender on environmental disclosure of listed firms in Nigeria and South Africa.

This study uniquely contributes to the corpus of knowledge and offers a better platform for up-and-coming scholars in the field of environmental disclosure. The findings of this study may aid in the implementation of pertinent laws pertaining to environmental disclosure in both Nigeria and South Africa.

Literature Review

Conceptual Review

Corporate Governance Code in Nigeria: The Nigerian Code of Corporate Governance 2018 (Code), which was unveiled by the Federal Government of Nigeria on January 15, 2019, aims to institutionalize best practices in corporate governance in Nigeria to strengthen the nation's economy and create an environment that is favorable to long-term business operations, according to George et al. (2016).

The Code provides a framework "to ensure good corporate governance practices in the public and private sectors of the Nigerian economy" by outlining a comprehensive set of principles on corporate responsibility, transparency, and sustainability for Nigerian public and private enterprises.

There used to be five sectoral codes of conduct, which are as follows:

1. Code of Corporate Governance for the Telecommunication Industry 2016, issued by the Nigerian Communications Commission (replacing the 2014 Code);
2. Code of Corporate Governance for Banks and Discount Houses in Nigeria 2014 issued by the Central Bank of Nigeria (replacing the 2006 Code);
3. Code of Corporate Governance for Public Companies in Nigeria 2011 issued by the Securities and Exchange Commission (replacing the 2003 Code);
4. Code of Good Corporate Governance for Insurance Industry in Nigeria 2009 issued by the National Insurance Commission; and
5. Code of Corporate Governance for Licensed Pension Fund Operators 2008 issued by the National Pension Commission.

In other words, no corporate governance standard was universally applicable across all industries and businesses. As a result, some organizations were subject to numerous corporate governance regimes. Instead, enterprises were subject to the corporate governance regulations that applied to the industries in which they operated.

Nonetheless, the Code acknowledges the importance of flexibility and scalability to the execution of such a cross-sectoral and non-company-size-specific Code of its kind, and it employs a principle-based approach to specify the minimal corporate governance standards placed on enterprises.

Corporate Governance of South Africa: South Africa's Corporate Governance to regulate its corporations, combines market regulation, legislation, soft law, and common law. To create guidelines for the international regulation of financial markets, South Africa works with its G20 counterparts. The South African Corporate Governance Code, also known as the King Code, was largely written by the retired chairman of the Global Reporting Initiative and the International Integrated Reporting Council. Its leadership in promoting integrated reporting globally has influenced its approach to corporate governance. The King Code establishes a number of standard requirements that businesses must follow in both their internal and public disclosures.

Standardizing industries and luring in foreign investment can be achieved by providing a broad framework for corporate operations. One of the main purposes of the King Code is to require all businesses operating in South Africa to abide by a few basic standards of behavior. If a business violates a King Code rule, shareholders and the public may hold it responsible (Mensah & Bein 2023). Since the King I report was introduced in 1994, corporate governance has emerged in South Africa, according to Singh et al. (2019). King II in 2002, King III in 2009, and most recently the King IV report in 2016 came after this. Following the political and economic upheavals in the mid-1990s, the first King report had a significant impact on corporate governance and practice in South Africa. Corporate governance procedures have been getting better over time as a result of King Reports' frequent updates. Many government policies in South Africa were also said to have changed as a result of the country's 1994 independence and the ANC's subsequent takeover of power.

The evolution of the King reports to satisfy both national and international requirements was justified by the various uncertainties (risks) these changes brought to business operations. Even now, the laws are continuously being improved, and they continue to have a unique impact on how a business should be run.

“Anglo-American (shareholding) orientation has historically dominated South Africa's CG model, where businesses are required to prioritize the interests of shareholders. However, in order to rectify past socioeconomic disparities between White and non-White South Africans, post-apartheid CG reforms, particularly the 2002 King Report (King II), compel SA enterprises to specifically adhere to a variety of affirmative action and stakeholder CG measures. This makes the South African CG model openly hybrid and distinct in the Anglo-American world by forcing SA enterprises to include some of the salient characteristics of both the shareholding and stake holding (continental Europe-Asia) models of CG in their annual reports.”

Environmental Disclosure: Whether a company chooses to provide environmental information in its annual reports voluntarily or as required by law, this is known as environmental disclosure. The public and stakeholders are informed about the environmental impact of the company's operations through this kind of disclosure (Ndalu et al., 2021). Lenciu (2012) define environmental reporting as a means of informing stakeholders about environmental issues. There are notable variations in the caliber and volume of information revealed by organizations in different industries and nations because international environmental reporting is still optional. Based on agency theory, companies bear the responsibility for deciding to disclose environmental information, a decision guided by management to meet shareholders' interests. Enhancing shareholders' understanding and influencing corporate practices requires a focus on internal organizational context.

Given how crucial environmental reporting is to business and how corporate governance affects attaining favorable results, it's necessary to comprehend the topics that have been investigated inside this dual subject. There is still little research on the relationship between corporate governance and environmental sustainability, with some studies taking a bibliographic approach (Enciso-Alfaro & García-Sánchez, 2023).

Corporate Governance and Environmental Disclosure: The foundation of corporate governance is the disclosure of environmental information, which is essential for safeguarding shareholders. Because it can assist eliminate information asymmetry, clarify conflicts of interest between shareholders and management, and hold corporate insiders accountable, this kind of disclosure is a crucial component of corporate governance. Since corporate governance requirements expand the board of directors' responsibilities to include stakeholders, this study focuses on the disclosure of social, environmental, and corporate social responsibility (CSR) information among the various types of information disclosed in annual reports. Corporate social and environmental reporting is becoming more and more important since addressing social and environmental issues is crucial to a company's long-term survival (Htay et al., 2012). The following section discusses the connection between particular aspects of corporate governance and environmental reporting.

Board Gender Diversity and Environmental Reporting: Board gender diversity, one of the key aspects of board composition, influences decision-making in business ethics. Research by Amorelli and García-Sánchez (2021), cited in Peng et al. (2022), suggests that men and women hold different social values. Female directors, often motivated by altruistic tendencies, are more engaged in ethical and prosocial behavior than their male counterparts. This reflects higher moral standards and a greater focus on stakeholder welfare among female directors, benefiting various stakeholders, such as consumers, investors, creditors, employees, and communities. Increasing female representation on boards can thus improve decision-making quality and leadership, particularly in ethical areas, which strengthens corporate governance and enhances environmental disclosure (Peng et al., 2022).

Environmental disclosure, though generally voluntary, is practiced by most listed companies in developed countries due to strong stakeholder influence. This raises questions about what and how much information should be disclosed. Studies have begun to explore the factors that drive environmental disclosure, with many indicating a positive relationship between board gender diversity and Corporate Environmental Disclosure (CED) practices (Gerged et al., 2023). Although few studies indicate a negative link, there is still a need for more extensive research on the relationship between these variables. Gender diversity on corporate boards, adding unique skills and perspectives, has been recognized as a means to enhance firm value and performance (Chebbi et al., 2020). For instance, Buallay and Alhalwachi (2022) found that boards with 21% to 50% female members had a positive impact on environmental disclosure, with better gender diversity observed in banks located in non-OPEC countries.

Board Size and Environmental Reporting: Board size refers to the total number of directors on an organization's board. Florackis (2008) notes that boards with more than seven or eight members may struggle with effective communication, coordination, and decision-making, potentially giving top management more control over outcomes. However, more recent research suggests a different view (Aliyu, 2019). Studies like those by Janggu et al. (2014) and Buniamin et al. (2011) found a positive relationship between board size and sustainability or environmental reporting. Akbas (2016) further observed that larger boards are associated with increased environmental disclosure among Turkish corporations, indicating that board size can influence the level of environmental information provided.

Board Independence and Environmental Reporting: Weir and Laing (2001) as cited in Buniamin et al., (2011) describe the board as responsible for day-to-day management and strategic direction. Boards with a higher number of independent directors typically have stronger oversight and control over management. Figure 1 below shows the interaction between corporate governance variables and environmental reporting. Board independence refers to the degree to which members are free from connections to the CEO or the firm. Independent directors—those not directly employed by or financially tied to the company, are key to financial performance, as they represent shareholders' interests and ensure greater disclosure of information. This focus on independence is grounded in agency theory, which views independent board members as tools for monitoring management and reducing agency costs (Aliyu, 2019). Many studies, such as those by Htay et al. (2012), underscore the importance of board independence in determining CER disclosure levels, although some, like Latif et al. (2020), found no significant relationship between board independence and environmental reporting.

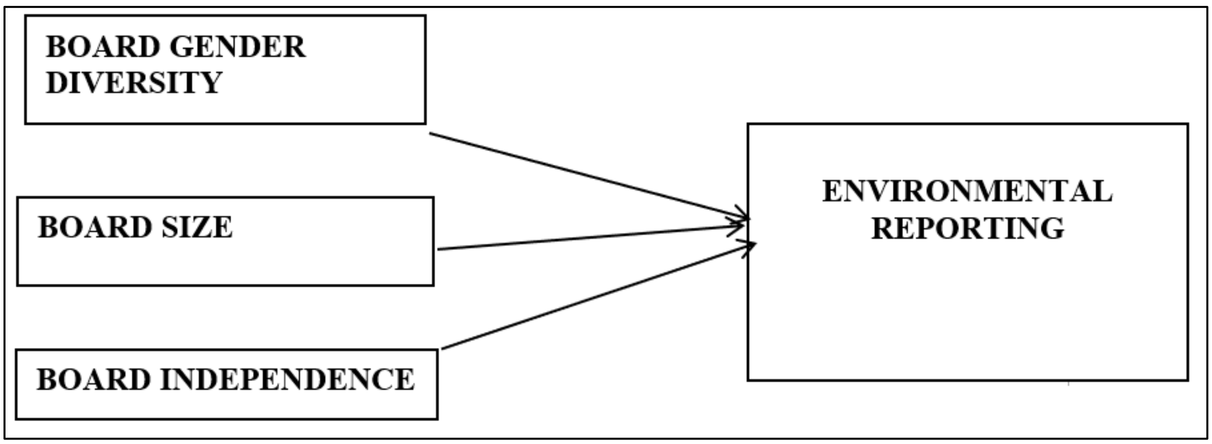

Figure 1: Interaction Between Corporate Governance Variables and Environmental Reporting (Source: Developed by Author)

THEORETICAL REVIEW

The Stakeholder Theory: The Stakeholder Theory of corporate ethics and organisational management, which tackles morals and values in company management, was first presented by Edward Freeman in 1984. Employees, suppliers, creditors, and other groups that are influenced by business organisations are all taken into consideration under the stakeholder hypothesis. It is an organisational management and business ethics theory. The concept shows that a firm should provide value for all stakeholders, not only shareholders. The notion holds that a stakeholder is any business or individual whose success affects another. Thus, a relationship exists between the firm and its stakeholders (Ohaka & Akani, 2017). This theory affirms that:

'...stakeholder support is necessary for a corporation to continue operating, and in order to obtain their consent, the business's operations must be modified. A corporation must adjust more as its stakeholders are more influential. Therefore, social disclosure is viewed as a component of the conversation between the business and its stakeholders.' (Gray et al., 1995, p. 53 as cited in Yusoff et al., 2016).

Corporate governance procedures as well as environmental and social disclosure policies have made extensive use of stakeholder theory. It entails recognizing and identifying the connection between the actions of the business and the effects it has on its stakeholders. Stakeholder theory rejects the idea that ethics and economics should be kept apart and instead assumes that values are an essential component of conducting business (Osemene & Fagbemi, 2019). According to stakeholder theory, businesses act not just in their own best interests but also in the best interests of their creditors, shareholders, suppliers, customers, government, society, and other parties. This group is the most crucial factor that businesses take into account when deciding whether or not to disclose information in their financial accounts. Support from stakeholders is essential to the company's survival, and it is the company's responsibility to look for that support. A company's efforts to adapt increase with the power of its stakeholders. Social disclosure is regarded as a component of the conversation between stakeholders and the business (Ardini & Wahidahwati, 2023).

Stakeholder theory is one of the primary approaches to social, environmental, and sustainability management research.

According to Wang (2017), corporate governance is the development and application of procedures aimed at maximizing shareholder returns while meeting the justifiable needs of stakeholders. In order to comprehend the interests of stakeholders, this study employed corporate governance attributes. Business features, such as a company's financial and operational operations, can affect stakeholders' decisions, and corporate governance features can help shape stakeholders' perceptions of who and what matters most at a company. The impact of corporate governance attributes on non-financial disclosure was the main focus of this study. Stakeholder support enables businesses to expand and thrive. Stakeholders want knowledge about business operations in order to make decisions, hence businesses must supply a variety of information to win over their stakeholders (Setyaningsih & Asyik, 2016). In essence, corporate social responsibility disclosure seeks to demonstrate to the public the social actions taken by businesses and their impact on society (Rahdari et al., 2020). The idea states that a business can only be successful and long-lasting if it protects and balances the interests of all parties involved. According to Erben Yavuz et al., (2024), managers may establish firm procedures to take into account the interests of all stakeholders.

The theory emphasizes corporate accountability and responsiveness to stakeholder needs. Unlike the shareholder centric view, stakeholder theory aligns corporate governance with the interests of multiple parties, ensuring sustainable decision-making. Boards influenced by stakeholder theory may prioritize ethics, diversity, independence, and sustainability in their governance structures. By balancing stakeholder interests, governance practices become more socially responsible and transparent. Stakeholder theory underlines the importance of disclosing not only financial but also non-financial information (e.g., environmental, social, and governance—ESG—issues). It provides a theoretical foundation for analyzing how governance mechanisms (e.g., board gender diversity, independence, and size) influence sustainability reporting

Methodology

This comparative study employs a quantitative approach to investigate corporate governance and environmental disclosure practices among listed firms in Nigeria and South Africa. The research design, sampling strategy, and data collection methods are informed by best practices in global corporate governance research.

INTERNATIONAL JOURNAL OF BUSINESS STRATEGY AND INNOVATION
Int. J. Bus. Strategy Innov.
Volume 01 | Issue 01 | 2026 | Page 15-38

The ex-post facto research design was used in this investigation. The target population for this study consists of all the fifty-six listed firms in the manufacturing sector which includes Agricultural, conglomerates, consumer goods, Industrial goods, Healthcare and natural resources companies quoted on the Nigerian Stock Exchange as at 2024. South Africa is made up of all 121 listed manufacturing companies, including Basic materials (45) Industrial (45), consumer goods (21) and Healthcare (7) quoted on the Johannesburg Stock Exchange as at 2024. Stratified and purposive sampling techniques was used in selecting the sample. Stratified sampling was used to ensure representation from listed companies across various industries and also to allow for fair representation. Forty-five samples are selected because these are the size of the manufacturing firms in Nigeria likely to disclose the information on environmental because this disclosure is still voluntary.

Table 1: Sample of Firms in the Manufacturing Sector (Nigeria)

Sector	Industry	No of Firms (Population)	No of Firms (Sample Size)
Manufacturing	Agricultural	5	4
Manufacturing	Conglomerares	6	3
Manufacturing	Consumer goods	21	18
Manufacturing	Industrial goods	13	11
Manufacturing	Healthcare	7	7
Manufacturing	Natural resources	4	2
Total		56	45

Source: Adapted from Nigerian Exchange (2024)

Table 2: Sample of Firms in the Manufacturing Sector (South Africa)

Sector	Industry	No of Firms (Population)	No of Firms (Sample Size)
Manufacturing	Basic materials	45	20
Manufacturing	Industrial	44	13
Manufacturing	Consumer goods	21	7
Manufacturing	Healthcare	7	5
Total		117	45

Source: Adapted from Jahannesburg stock Exchange (2024)

Given the ordinal nature of the dependent variable—Environmental disclosure, the appropriate econometric technique adopted is the ordered logistic regression model.

Model Specification: The model for the research is adapted from Mahmood et al., (2018) specified thus;

$$ENVD = F\ (BSIZE,\ BIND\ and\ BGEN) \qquad ...(1)$$

This can be re-specified in regression form as;

$$\mathbf{ENVD_{it}=B_0+\beta_1BSIZE_{it}+\beta_2BIND_{it},\ \beta_3BGEN_{it}+\beta_4FAGE_{it}+\beta_5FSIZE_{it}\ +e_{it}}$$

Where: ENVD = Environmental Disclosure
BSIZE = Board Size
BIND = Board Independence
BGEN = Board Gender
FAGE = Firm Age
FSIZE =Firm Size
β_0 = Slope
β_1- β_5= Coefficients of parameter estimate
ε = Error term
t = Time (in this case, t = 10)
i = Individual firms (in this case, i = 50)
Dependent variable

Measurement of Variables: The measurement technique for environmental reporting disclosure is 8 items on environmental, adapted from Global Reporting Initiative (GRI G4 Disclosures). This is measured by how many indicators are reported by companies on environmental reporting disclosure according to GRI guidelines.

The dependent variable, environmental reporting disclosure, is measured with un-weighted disclosure index that is recognized in line with GRI to gauge the informational content. Therefore, total environmental reporting disclosures are determined as the proportion of total score obtained from the firms to total available scores. Item on environmental reporting disclosure in the annual report is score 1 and any one not discloses is awarded 0.

Therefore, Environmental disclosure of a firm is calculated using the equation below:

$$\mathbf{ENVD} = \sum \frac{\textbf{number of ENVD disclosure}}{\textbf{MAX ENVD disclosure}}$$

Where:

ENVD = Environmental Disclosure

MAX ENVD = Maximum Environmental disclosure (8).

This was weighted using five likert scale 0-4 (see appendix C).

Independent Variables: Board Size (BSIZE): This connotes the actual number of members on the company's board. Board Independence: The proportion of non-executive directors on the board. Board Gender: The proportion of women directors on the board.

Control Variables: Firm Size (FSIZE): this represents the size of a firm in terms of assets. Firm Age (FAGE): this is the number of years a firm has been listed on the Nigerian Stock Exchange.

Int. J. Bus. Strategy Innov.
Volume 01 | Issue 01 | 2026 | Page 15-38

The measurement of variables used in this study are discussed in Table 3.

Table 3: Variables, Definitions, Measurements and Sources					
S/N	**VARIABLES**	**DEFINITION**	**TYPE**	**MEASUREMENT**	**AUTHORS**
1	ENVD	Environmental Disclosure	Dependent	GRI Disclosure index (1 = Companies that disclose environmental information in the annual report 0 = Otherwise)	Global Reporting Initiative (2021)
2	BSIZE	Board size	Independent	'The number of directors on the board	Anyigbah (2023)
3	BIND	Board Independence	Independent	The proportion of non-executive directors on the board	Anazonwu et al. (2018)
4	BGEN	Board Gender	Independent	The proportion of women directors on the board	Solimene et al. (2017)
5	FAGE	Firm Age	Independent	Natural logarithm of the number of years since listed on the Nigerian Stock Exchange	Ilaboya and Ohiokha (2016)
6	FSIZE	Firm size	control	Log of total asset	Salihi and Jibril (2015)
SOURCE: Researcher compilation 2025.					

Results and Discussion

Descriptive Analysis:

Table 4: Summary of Descriptive Statistics					
Nigeria					
	Obs	**Mean**	**Std Deviation**	**Minimum**	**Maximum**
ENVD	450	0.338	0.889	0	4
BISZE	450	8.95	3.087	3	19
BIND	450	72.988	13.119	25	94.44
BGEN	450	15.774	12.837	0	66.667
FSIZE	450	11.355	3.076	6.24	22.094
FAGE	450	33.665	13.09	4	58
South Africa					
	Obs	**Mean**	**Std Deviation**	**Minimum**	**Maximum**
ENVD	450	1.644	1.147	0	4
BISZE	450	10.27	2.756	4	19
BIND	450	73.54	11.54	30	93.2
BGEN	450	24.29	14.097	0	72.727
FSIZE	450	12.635	2.537	6.796	19.888
FAGE	450	38.591	31.164	1	128
Source: Authors Compilation, 2025					

Table 4 presents the descriptive analysis of the variables for all the models used in this study for the selected listed firms in Nigeria and South Africa, with focus on maximum and minimum values, as well as the variables' standard deviation and mean. This descriptive analysis examines key measures related to corporate governance (board size (BSIZE), board independence (BIND), board gender (BGEN), and environmental disclosure (ENVD) and the control variables (Firm Size (FSIZE) and Firm age (FAGE). The results are presented in table 4.

The descriptive statistics in table 4 provide an overview of the variables in the dataset, revealing significant variation between listed manufacturing firms in Nigeria and South Africa. In table 4 revealed that Nigerian manufacturing firms have a low average environmental disclosure score of 0.338 out of 4, indicating minimal transparency regarding environmental impacts. The standard deviation (0.889) and maximum of 4 show that only a few firms provide substantial environmental information, while most disclose little or none. This suggests a weak regulatory or voluntary disclosure environment and limited stakeholder pressure. However, South African manufacturing firms have a higher average environmental disclosure score of 1.644 compared to Nigeria, with a broader spread (standard deviation = 1.147). The maximum value of 4 and minimum of 0 indicate that while some firms disclose comprehensively, others still fall short. Overall, environmental reporting is stronger, likely due to stricter regulation, stakeholder activism, and adoption of frameworks like King IV.

With regards to corporate governance variables, table 4 showed that the average board size in Nigerian listed manufacturing firms is approximately 9 members, with a wide range from 3 to 19. This suggests variability in board composition, potentially reflecting differences in governance practices and firm structure. Smaller boards may reflect lean governance models, while larger ones could indicate complexity and the need for broader expertise. The standard deviation of 3.087 shows notable dispersion, which might impact decision-making quality and the firm's ability to oversee strategic and sustainability issues. With focus on South Africa, table 4 showed that South African manufacturing firms have an average board size of about 10.27 members, slightly larger than their Nigerian counterparts. The range extends from 4 to 19, indicating both small and larger governance teams across firms. The standard deviation of 2.756 points to some variability, but with a tendency towards moderately sized boards. Generally, board size appears consistent with global best practice recommendations.

On board independence, table 4 revealed for Nigeria, an average around 73%, indicating that a significant portion of board members are non-executives. This is a positive governance feature, aligning with global best practices for monitoring management effectively. The range from 25% to 94.44% suggests a mix of highly independent boards and those with limited outside oversight. Likewise, board independence in South African listed manufacturing firms is relatively high, averaging 73.54%, with a tighter standard deviation (11.54) than Nigeria. The minimum and maximum values (30% to 93.2%) indicate a consistent commitment to independent oversight. This reflects South Africa's strong corporate governance framework under the King IV Report. Highly independent boards are essential for ensuring accountability, especially on sustainability and risk management issues.

Board gender diversity is relatively low in Nigerian manufacturing firms, with an average of 15.77%, and some boards having no female representation. The standard deviation (12.84) and maximum of 66.67% indicate that while a few firms embrace gender inclusion, many still lag behind. This imbalance may reflect cultural or industry-specific barriers to female participation at the board level. Enhancing gender diversity could promote broader perspectives and better responsiveness to social and sustainability expectations, especially in a globalising business environment. For South Africa, table 4 revealed that Gender diversity on boards is more prominent in South Africa than Nigeria, with an average of 24.29% female representation. Some firms reach up to 72.73%, indicating substantial inclusivity efforts. The standard deviation of 14.10 shows moderate variation among firms. South Africa's progressive policies and gender equity frameworks may be driving this trend.

Table 4 displayed an average firm size, measured in natural log of total assets, to be 11.355, with values ranging from 6.24 to 22.094. This wide variation suggests the presence of both small and large firms within the Nigerian manufacturing sector. Larger firms may have more resources to invest in environmental initiatives and corporate disclosures. The standard deviation of 3.076 reflects substantial variation, potentially affecting the scale and complexity of operations. Furthermore, the average firm size among South African manufacturing firms is 12.635 (log scale), larger than the Nigerian average. Firm sizes range from 6.796 to 19.888, with a standard deviation of 2.537, indicating substantial yet slightly lower dispersion than in Nigeria. Larger firms tend to have more capacity and motivation to engage in environmental disclosures, adopt technology, and meet stakeholder expectations. The data reflect a sector comprising both medium and large enterprises, contributing to sustainable industrial growth.

In addition, table 4 showed that Nigerian listed manufacturing firms have an average age of approximately 34 years, ranging from 4 to 58 years. This indicates that most firms are well-established, with significant industry experience and market presence. Older firms may have more institutionalised governance structures and long-term stakeholder relationships. However, younger firms may be more flexible and innovative. The standard deviation of 13.09 years suggests moderate variability in maturity, which could influence responsiveness to environmental demands, stakeholder expectations, and regulatory compliance. Regarding South Africa, table 4. showed that South African firms are, on average, older than Nigerian ones, with a mean age of 38.59 years and a wide range from 1 to 128 years. The high standard deviation (31.16) shows considerable variability in firm maturity. This includes both legacy firms with deep-rooted operations and newly listed companies.

Table 5: Random Ordered Logistic Regression for Environmental Disclosure for Nigeria and South Africa

	Nigeria				South Africa			
ENVD Model	**Coefficient**	**Robust- Std error**	**Z-Value**	**P-value**	**Coefficient**	**Robust- Std error**	**Z-Value**	**P-value**
BSIZE	0.065	0.026	2.49	0.013	0.071	0.088	0.81	0.42
BIND	0.013	0.019	0.68	0.499	0.004	0.02	0.2	0.843
BGEN	0.081	0.022	3.66	0	-0.031	0.009	-3.19	0.001
FSIZE	0.257	0.096	2.67	0.008	-0.05	0.115	-0.44	0.663
FAGE	0.147	0.211	0.7	0.484	0.164	0.133	1.23	0.22
Wald-Test	50.59				21.47			
P-value	0				0.001			
No of Obs	450				450			
No of group	45				45			

Source: Authors Compilation, 2025

Board Size and Environmental Disclosure: The findings for Board Size (BSIZE) in both Nigeria and South Africa show differing outcomes in relation to environmental disclosure, as outlined in Table 5. In Nigeria, BSIZE has a positive and significant effect on environmental disclosure (coefficient = 0.065, p =

0.013). hence, the study rejects the hypothesize four for Nigeria that board size has no impact on environmental disclosure of listed firms in the Nigeria. while in South Africa, the relationship is insignificant (coefficient = 0.071, p = 0.420). thus, the study fails to reject the hypothesis four that board size has no impact on environmental disclosure of listed firms in the South Africa.

For Nigeria, the positive and statistically significant effect of BSIZE aligns with agency theory (Meckling & Jensen, 1976), which suggests that larger boards are more effective at monitoring management and ensuring greater transparency, including the disclosure of environmental issues. Companies environmental performance will be enhanced by expanding the board size and including a sustainability committee (SC) on the board of directors (Aydiner, Erdogan & Uyar, 2025). In the Nigerian context, this finding is consistent with previous studies indicating that larger boards tend to provide more detailed CSR and environmental disclosures due to their better ability to oversee company activities and enhance accountability (Almashhadani & Almashhadani, 2023; Monteiro et al., 2023). Ofoegbu et al. (2018) provided evidence that board size is associated with the extent of environmental disclosure among listed companies in South Africa and Nigeria.

On the other hand, the lack of significance in BSIZE for South Africa (p = 0.420) contradicts the expectations of agency theory, which posits that larger boards should be better equipped to oversee environmental practices. This could suggest that in South Africa, other factors, such as the internal dynamics of boards or the nature of the industry, may overshadow the potential benefits of board size. A possible explanation might be that a larger board must make more concessions in order to come to an agreement, as a result, judgments made by larger boards are less drastic, which results in less inconsistent business performance (Sheng-Syan Cheng, 2008). This finding also contrasts with studies that show a positive relationship between board size and corporate social responsibility (CSR) disclosures (Almashhadani & Almashhadani, 2023; Monteiro et al., 2023), indicating that in South Africa, board size alone may not be a sufficient driver of environmental transparency.

Board Independence and Environmental Disclosure: With regards to Board Independence (BIND), it shows similar results for Nigeria and South Africa, as highlighted in Table 5. In Nigeria, BIND has no significant effect on environmental disclosure (coefficient = 0.013, p = 0.499), while in South Africa, it also shows no significant relationship (coefficient = 0.004, p = 0.843). hence, the study fails to reject hypothesis five that board independence has no impact on environmental disclosure of listed firms in the Nigeria and South Africa.

For Nigeria, the lack of significance of BIND contrasts with the predictions of agency theory, which suggests that independent directors should act as effective monitors, particularly when it comes to environmental disclosures (Fama & Jensen, 1983). Independent directors are expected to enhance corporate transparency by providing an objective oversight of management's activities, including those related to environmental impact. However, the insignificant effect in Nigeria could indicate that independent directors, despite their formal status, may lack the necessary expertise or incentives to focus on environmental issues.

Similarly, the lack of significance of BIND in South Africa (p = 0.843) also suggests that board independence alone may not be a key driver of environmental disclosure in South African firms. While board independence is theoretically important for enhancing corporate transparency, this finding aligns with research suggesting that independent directors may not always be sufficiently engaged in sustainability issues or may lack the expertise necessary to influence corporate environmental practices. The findings are in conformity with prior studies (Kumari et al., 2022; Farda & Saraswati, 2024). Naciti (2019) found that higher number of independent directors leads to lower sustainability performance. Also, the findings for listed manufacturing firms in Nigeria and South Africa does not support Ndalu *et al* (2021) whose study's conclusions showed a negative correlation between environmental disclosure and board independence. Rafique, et al. (2017) and Masud et al. (2018) findings demonstrated a favorable correlation between the percentage of independent directors on the board and the degree of environmental disclosure.

Board Gender Diversity and Environmental Disclosure: Board Gender Diversity (BGEN) shows contrasting effects in Nigeria and South Africa, as reported in Table 5. In Nigeria, BGEN has a significant positive effect on environmental disclosure (coefficient = 0.081, p = 0.000), while in South Africa, it has a significant negative effect (coefficient = -0.031, p = 0.001). the study rejects the null hypothesis six for both countries that board gender has no impact on environmental disclosure of listed firms in the Nigeria and South Africa.

For Nigeria, the positive and significant relationship between BGEN and environmental disclosure supports stakeholder theory (Freeman,1984), which emphasizes the importance of diverse perspectives in decision-making. The finding suggests that gender-diverse boards tend to be more receptive to stakeholder concerns, including environmental issues. The presence of women on boards has been linked to a greater focus on ethical decision-making, sustainability, and long-term value creation. Nigerian listed manufacturing firms with gender-diverse boards may be more inclined to prioritize environmental sustainability and disclose their environmental performance as part of broader efforts to address stakeholder interests. This finding also aligns with prior studies indicating that women in leadership positions are more likely to advocate for environmental causes (Carvajal et al. 2022; Issa and Zaid 2021; Mungai et al. 2020; Erin et al., 2021; Monteiro et al., 2023)

In contrast, BGEN in South Africa shows a negative and significant relationship with environmental disclosure (coefficient = -0.031, p = 0.001), contradicting the positive findings in Nigeria. This negative relationship may suggest that, in South Africa, gender diversity on boards does not necessarily lead to improved environmental disclosure. One possible explanation could be that women on boards in South Africa may be underrepresented or have less decision-making power. The finding aligned with Gallego-Sosa et al. (2020) who concluded that a higher proportion of women on the board of directors could hinder environmental performance. Fernández-Torres et al. (2021) reported that board gender diversity has a negative influence on the reduction of natural resource use, with this negative influence occurring if the number of women directors, the proportion of women board members, and the gender balance on the board were to increase.

Summary of the Study

This study investigates the impact of corporate governance mechanisms on environmental disclosures—in listed manufacturing firms in Nigeria and South Africa. The core governance variables considered are bored size, board independence, and board gender diversity. The findings are drawn from ordered logistic regression models and are discussed comparatively between both countries.

Int. J. Bus. Strategy Innov.
Volume 01 | Issue 01 | 2026 | Page 15-38

Environmental disclosure, the Nigerian data again show that board gender diversity is an important positive influence, alongside board size. These results reinforce the importance of inclusive and sufficiently sized boards in encouraging greater environmental accountability. Board independence, however, does not significantly impact environmental disclosure in Nigeria.

On the other hand, in South Africa, environmental disclosure is not significantly influenced by board size or independence. Surprisingly, board gender diversity shows a negative association with environmental reporting. This may suggest that although women are represented on boards, their influence may be symbolic rather than substantive, possibly due to lack of empowerment or tokenism. These outcomes call into question the depth of gender inclusion and the functional role of diverse directors in influencing environmental strategies.

In summary, while board gender diversity is crucial to disclosure in Nigeria, board independence plays a more prominent role in South Africa. These differences underline the importance of considering national context and regulatory environments when designing and implementing governance reforms

Policy Implications

Based on the comparative findings on the effects of corporate governance variables—Board Size (BSIZE), Board Independence (BIND), and Board Gender Diversity (BGEN)—on environmental disclosures in listed manufacturing firms in Nigeria and South Africa, the following policy implications are recommended:

1. In Nigeria, board gender diversity significantly improves environmental disclosures. This suggests that female directors contribute positively to environmental disclosures. This suggests the need for policy makers such as the Nigerian Securities and Exchange Commission (SEC) should institutionalise gender quotas or minimum thresholds for female board representation. This aligns with SDG 5 (Gender Equality) and supports improved environmental and social governance (ESG) practices in firms. South African firms should not just include women on boards, but policy makers should ensure that they are appointed to leadership roles within environmental and sustainability committees. The JSE should go beyond disclosure and evaluate the functional contribution of women on boards.
2. Board size positively influences environmental disclosure in Nigeria. Corporate governance codes in Nigeria should encourage optimal board sizes that ensure diverse expertise, especially with members who have experience in sustainability and environmental management. A review of board composition regulations to include more ESG-literate directors is necessary. The negative relationship between board gender diversity and environmental disclosure in South Africa may point to tokenism or lack of effective participation. South African governance frameworks should go beyond gender parity targets to ensure that female board members are given leadership roles and ESG-related responsibilities, including environmental oversight committees.

Conclusion

The study found that board size has a significant positive effect on environmental disclosure in Nigeria, suggesting that larger boards contribute to broader environmental oversight and disclosure. In South Africa, however, the relationship is positive but statistically insignificant. The study concluded that board size is a more relevant governance lever for improving environmental transparency in Nigeria than in South Africa. In addition, Board independence does not significantly impact environmental disclosure in either Nigeria or South Africa. This demonstrates that independent directors in both countries may not yet be fully leveraging their roles to promote environmental reporting, or their focus may be directed more towards financial oversight than sustainability. In conclusion, the study highlights that in Nigeria, board gender diversity positively impacts environmental disclosure, with female board members driving environmental transparency. However, in South Africa, the negative relationship suggests challenges such as tokenism, under-representation in decision-making roles, and structural barriers that hinder the influence of female directors on environmental issues.

Recommendations

Based on the findings and conclusions of the study, several recommendations were made for both Nigeria and South Africa.

Recommendations for Nigeria

1. The listed manufacturing firms in Nigeria should ensure that boards should be strategically sized, ensuring that beyond numerical adequacy, members possess the requisite expertise in environmental, social, and governance (ESG) domains and Companies should avoid board bloat and instead prioritise skill-based appointments relevant to sustainability and integrated reporting as Board size had a positive but insignificant effect in both countries, indicating that board size alone does not guarantee better sustainability outcomes.
2. The significant and positive effect of board independence in South Africa but insignificant result in Nigeria suggests differences in board functionality and autonomy. Nigeria should strengthen the role of independent directors by Enhancing their oversight capacity through regulatory reforms and Providing ESG-focused training to build their competence in sustainability issues. South Africa should continue leveraging independent directors, possibly by formalising their participation in sustainability oversight committees, ensuring their voices are central in ESG-related strategy formulation.
3. Nigerian regulators should enforce a minimum female representation quota on boards of listed companies. Policymakers should amend the Nigerian Code of Corporate Governance (NCCG) to mandate a minimum threshold (e.g., 30%) of female directors on boards of publicly listed companies. This aligns with stakeholder and resource dependence theories which advocate for diversity to enhance board effectiveness.

Recommendations for South Africa

1. South African companies should focus on board effectiveness rather than size. Board evaluation frameworks by the King IV Code should be used to ensure members contribute meaningfully to environmental governance.
2. Despite BIND not showing a significant effect, South Africa's long-standing governance frameworks can be enhanced by appointing independent directors with environmental expertise, particularly in firms where ESG disclosure is weak.

3. South African firms should not just include women on boards, but also appoint them to leadership roles within environmental and sustainability committees. The JSE should go beyond disclosure and evaluate the functional contribution of women on boards.

Limitation and Direction for Further Study.

This research looked at the impact of corporate governance mechanisms on environmental disclosures—in listed manufacturing firms in Nigeria and South Africa. The research produced insightful results covering the years 2014 through 2023. The study considered only two countries due to the focus of the researcher, also data availability and time constraint. Further studies should consider comparing three or four countries across Africa and focus on other sectors using the up-to-date data.

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