

Moderating Role of Board Independence on the Effect of Environmental and Governance Sustainability Disclosure on Firm Value of Listed Non-Financial Firms in Nigeria

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ABSTRACT

A corporation's worth may draw the attention of a variety of stakeholders, and preserving its long-term survival requires overcoming multiple hurdles, most notably the implementation of robust disclosures about environmental and governance sustainability. This study looked at how Board independence affected the link between environmental and governance sustainability disclosures and the total value of Nigerian listed non-financial firms over a decade (2012-2021). Using purposive selection, 69 firms were chosen from a population of 104 to use in a longitudinal study design. Data from the company's annual reports were evaluated using regression analysis. The Governance Disclosure Index (GDI) and the Environmental Disclosure Index (EDI) were used as proxies for disclosures on governance and environmental sustainability, respectively, while Tobin's Q was used to represent corporate value. The findings revealed that environmental sustainability disclosure, particularly when moderated by board independence, significantly influenced the firm value of Nigerian listed non-financial companies, whereas governance sustainability disclosure had a significant impact on firm value on its own. As a result, the research recommends that businesses encourage more sustainability transparency via rating and evaluation methods. Furthermore, they should be proactive in developing and executing governance and environmentally friendly policies and programs, since these efforts are critical to increasing their total worth.

Keywords: Firm value, Governance sustainability disclosure, Environmental sustainability disclosure, Tobin's Q and Board Independence

INTRODUCTION

Increasing financial value, as shown in rising stock prices or corporate profits, benefits shareholders, but consumer value is derived from satisfaction with top-notch goods and services. Investors are placing a greater emphasis on ESEG factors, which include a range of factors influencing a company's capacity to survive in the long run. Shareholders are increasingly interested in non-financial information on the company's effect on them and their communities, which has led to a surge in interest in the concept of sustainability disclosure. Environmental deterioration is a global concern, not just a Nigerian one, says Junior et al. (2014). There have been national forums, conferences, and industry agreements to address environmental challenges as a consequence of this. There is evidence of global engagement through initiatives such as the Brandt Land Report, which lays out principles for sustainable development, and by rules issued by groups like the OECD for Multinational Enterprises on environmental matters. The European Union and the United Nations have also collaborated on conventions addressing climate change and global

warming. Environmental degradation and its repercussions are the targets of these efforts, which are backed by legal frameworks. To ensure that companies follow worldwide standards for the protection of natural resources and to lessen the negative impacts of their activities, rules and regulations are established. Rehabilitating, protecting, and conserving the environment via responsible behaviour and sustainable performance in the business sector is a priority, in addition to legislative measures. To prove they are serious about sustainability, businesses must share sustainability accounting data with stakeholders, which allows them to defend their environmental stewardship efforts when challenges arise.

The purpose of this research is to examine the impact of social sustainability disclosure and board independence on the firm value of listed non-financial firms in Nigeria, with a particular emphasis on the financial sector. In light of the above, the research postulated that:

H_{01} : Environmental sustainability disclosure has no significant effect on firm value of listed non-financial companies in Nigeria when it is moderated by board independence.

H_{02} : Governance sustainability disclosure has no significant effect on firm value of listed non-financial companies in Nigeria when it is moderated by board independence.

LITERATURE REVIEW

Conceptual Framework

Environmental Sustainability Disclosure

Environmental disclosure is not defined in a way that is widely agreed upon. Corporate sustainability is defined by Adediran and Alade (2013) as the effective dissemination of information about a company's conservation efforts in relation to the environmental impacts of such efforts. Distributing information about a company's stance on its environmental effect and its plans to mitigate it is characterized by Al-Taher (2011) as corporate sustainability. The practice of public interest firms disclosing quantitative and qualitative information on their social, environmental, and economic activities is known as environmental disclosure (END) (Vande et al., 2014).

When businesses reveal the ways in which their operations affect the environment, it's known as environmental disclosure (Deegan and Unerman, 2006). The term "environmental disclosure" is used by Yusuf et al. (2019) to describe the practice of informing the public about the negative effects of production on the environment, such as the contamination of water, land, and air. By being more open about their environmental obligations, businesses are held accountable for more than simply disclosing their financial statistics (Grey et al., 1987). Hence, "governance-by-disclosure" (the practice of encouraging transparency in environmental operations) is a key component of efficient corporate governance processes that include environmental information (Gupta, 2008).

Companies are under increasing pressure to provide detailed information about their environmental activities as they face increased public scrutiny in Nigeria and throughout the globe. Businesses use EPD to gain stakeholders' confidence, assess operational risks, and lessen their impact on the environment. Businesses must take into account the environmental effects of their projects and share this information with many groups—including workers, consumers, communities, regulators, the press, and shareholders—if they want to be around for the long haul (Adams & Zutshi, 2004).

Environmental Sustainability Disclosure Index

When comparing and contrasting the sustainable development of different regions or countries, the

Environmental Sustainability Index is a powerful tool. To allow for comparisons of performance with other governments, it is comprised of a set of indicators that were particularly developed to quantify the amount of sustainable development. Including social, environmental, and economic factors, the index provides a comprehensive and accurate picture of sustainable development. Using this approach, we looked at how companies in different countries and regions adhere to certain social standards when it comes to social transparency. In addition, this idea has been used to assess the long-term implications of social sustainability on the hospitality industry. This exemplifies how the Social Sustainability Index is crucial for understanding and advocating for sustainable practices across sectors and regions.

Governance Sustainability Disclosure

In order to guide and control its activities, an organization's rules, processes, and protocols are revealed via governance reporting (Aggarwal, 2013). Disclosure of rules and procedures with the aim of resolving disagreements between stakeholders and management is what governance reporting is all about, says Ebimobwei (2011). Assuring public support for and efficient functioning of institutions is essential to this discipline. These reports show how well an organization is doing operationally and how well received it is by the public by analyzing its progress in connection to certain compliance actions. Comprehensive information on how well a company has done in response to specific enforcement actions is included in governance reports. According to Nigeria's 2018 Code of Corporate Governance, businesses must prioritize the needs of its stakeholders, who include local residents, customers, and workers. In Section 26.2 of the Corporate Governance Code, it is emphasized that the board of directors is obligated to establish policies and processes for ESG (environmental, social, and governance) issues. Environmental, social, and governance (ESG) procedures in Nigerian non-financial firms listed must be thoroughly examined in relation to female director qualifications, environmental awareness, and board involvement. The board must do this in order to fulfil its duty to safeguard the interests of the company's stakeholders.

Their qualifications and expertise demonstrate the diverse interests of stakeholders, which places the board of directors in an ethically responsible position (Howton et al., 2008; Mahmood et al., 2018). As go-betweens, boards help get the word out between shareholders and executives, and between businesses and the community at large. Various stakeholders may have conflicting interests, and it is their job to balance those interests. Furthermore, in order for boards to fulfill their governance duties, such as strategy oversight, resource integration, and competency development, they need specialized skills (Eisenhardt & Martin, 2000). In order to reduce disagreements and encourage a stronger focus on creating long-term value, boards should take deliberate steps to align financial incentives with incentives that encourage responsible behaviour (MacKenzie, 2007).

Governance Sustainability Disclosure Index

The Financial Reporting Council of Nigeria's Code of Corporate Governance, which includes both mandatory and voluntary criteria, was used to create the Corporate Governance Disclosure Index (CGDI). The eleven main dimensions of the framework are used to classify the 43 parameters that make it up. General Shareholder Information, Audit Committee, Board of Directors, Audit Meetings, Shareholders/Investors Grievance Committee, Remuneration Committee, Nomination Committee, General Body Meetings, Mandatory Disclosures, and Non-mandatory Disclosures are all parts of these dimensions. By arranging these features inside a framework, the Corporate Governance Disclosure Index was developed, which allowed for the calculation of the corporate governance disclosure score.

Using a binary method, each disclosed parameter was given a score between 0 and 1, with 1 indicating disclosure and 0 indicating non-disclosure. Given their relative importance in fostering effective corporate governance, all indicators were treated with equal weight. Each company's Overall Corporate Governance

Disclosure score is based on an average of many metrics that together show how much information is available in the annual report. A maximum score of 52 is achievable with full reporting of all factors. The following steps were used to determine the Corporate Governance Disclosure Index:

$$\text{CDGI} = \frac{\text{Total Score of a company}}{\text{Maximum possible score obtainable by the company (52)}} \times 100$$

On a scale from 0 (the lowest disclosure) to 100 (the finest disclosure), CGDI values varied among different companies. The CGDI does not assess the thoroughness or quality of disclosure of any given criteria; it just shows that the information is there in a company's annual or corporate governance report.

Board Independence

The degree to which a board consists of independent, non-executive directors who are not involved in any way with the company beyond their role as directors is what Davidson et al. (2005) mean when they talk about board independence. Those who do not take part in running a company's day-to-day operations but who instead oversee them and provide the board an outside perspective are known as "non-executive directors" (Coles, 2008). In their role as supervisor of management, non-executive directors who are entirely separate from management are expected to provide shareholders the highest degree of protection, as stated by Baysinger and Butler (1985). More independent non-executive directors unaffiliated with senior executives are necessary for a board to achieve independence, claim Coles (2008) and Kim (2014).

There are both independent and non-independent members of the board, including chief executive officers and other executives. The role of non-executive directors is to keep an eye on everything the CEO does, whereas the role of executive directors is to safeguard shareholder interests and showcase different skills and experiences. Amba (2013) argues that one way to keep an eye on management is to have independent non-executive members on the board. This is due to the fact that, as pointed out by Ilaboya and Obaretin (2015), a larger number of independent directors helps with better management oversight and reduces information asymmetries.

Fama (1980) posits that non-executives' greater monitoring skills is driven by their desire to maintain their reputations in the external job market. Independent non-executive directors are considered outsider directors, as opposed to insider directors who are either managers or employees of the company, or dependent non-executive directors who have some kind of personal or professional connection to the corporation. There is a strong belief that the presence of independent non-executive members on the board, particularly those with experience supervising the company's operations, is a key factor in determining financial success (Shafi et al., 2020). Stakeholder theory and agency theory provide further evidence for the need of board independence. An independent, stakeholder-representative board of non-executive directors may improve information distribution and keep an eye on management's actions.

Corporate Governance Codes (CGCs) in Nigeria mandate a balanced mix of executive and non-executive board members, according to research by Obigbemi et al. (2016). The percentage of independent, non-executive directors is a good indicator of a board's independence. Rashid (2018) states that the number of independent or non-executive directors on a company's board is a measure of the board's independence. Abdulkarim and Zuriqi (2020) argue that corporate boards' independence is critical for their ability to make fair decisions that benefit the company as a whole, regardless of potential biases or conflicts of interest between management and shareholders.

Firm value

A company's valuation, as shown by its firm value (Feng, 2010), is very crucial since it represents the

owner's financial well-being. Managers, thus, may be said to have the primary responsibility for maximising the organizations worth (Feng, 2010). A lot of people can be interested in how much a company is worth. A company's bottom line is affected by the positive relationship between asset turnover and the earning potential of its assets. The increased profit margins that result in this boost the overall value of the firm.

The potential of foreign ownership to enhance economic value within host countries has garnered a lot of attention in recent years. In both established and developing economies, the number of mergers, acquisitions, and listings that span international borders has been on the rise. The existence of global financial markets makes it easy for investors from other countries to put money into businesses located anywhere in the globe. The value of a firm has grown throughout the years as a result of the confidence that the public has in its operations (Safitri et al., 2019). The evaluation of business value is often undertaken using Tobin's Q, a statistic that examines the value produced from a company's assets. According to Chen and Lee (2017), it represents the present value of future cash flows after taking risk into account and applying the required rate of return. The effectiveness of a company's use of its financial resources and its commitment to CSR may be measured using Tobin's Q, as stated by Gamayuni (2015).

Tobin's Q

A company's worth is an indication of how much people have faith in what it does when it first opened its doors (Safitri et al., 2019). It is common practice to quantify Tobin's Q, a measure showing the value a corporation gets from its assets, while evaluating corporate value. The relevant statistic represents the present value of future cash flows that have been discounted at the correct rate of return and adjusted for risk (Chen & Lee, 2017). In order to measure how well a company uses its money and demonstrates its commitment to CSR, analysts utilize Tobin's Q, as stated by Gamayuni (2015). One way that investors determine a company's value is by looking at how well it manages its resources. The worth of a corporation is shown by its share price, according to Fama (1978). Those involved in the capital market who issue shares often look to the price of those shares as a measure of the firm's value.

Firm size

A company's size, a measure of the firm's extent, is one of the factors determining its performance. The sum of a company's assets and revenues is often used to gauge its size. Organizations with large total assets may be better equipped to weather times of relative stability and turn a profit than smaller enterprises, according to research by Chen et al. (2005). The concept of economies of scale, which enables bigger organizations to optimize their input selections, influences the importance of corporate size. A decrease in average expenses and an increase in profitability are the results of this optimization. Multinational firms may generate goods at lower costs because of this. Bigger companies are more competitive than smaller ones because they have a greater reach into the market, which opens up more opportunities for substantial profit (Damarwan & Toro, 2012). Market capitalization and employee count go hand in hand, making it easier to gauge a company's scale. Many people may get positive impressions of a company's future prospects based on how well it scales.

Empirical Review

Emmanuel and Ifeanyichukwu (2021) examined at how Nigerian manufacturing firms' firm values were affected by environmental disclosure. Environmental disclosure and its impact on the stock value of publicly traded industrial enterprises in the nation was the intended focus of their investigation. Based on a list of all active listed firms in Nigeria from 2010 to 2019, they used a convenience sampling approach to choose 40 manufacturing companies for their sample. They used an ex-post facto research design using share price as

the dependent variable. To examine the data acquired from the selected firms' financial statements, multiple regression analysis was used. Environmental disclosures had a substantial effect on stock values, according to the findings. Businesses in Nigeria should show their support for sustainable development by implementing and publicizing green policies, according to the report. The research may have shown different findings with a larger sample and a more generalized regression approach; nonetheless, it is limited by its sample size and methodology, which concentrated on 40 manufacturing enterprises and used Ordinary Least Squares (OLS) regression.

Environmental disclosure has an effect on the market value of listed Nigerian industrial products companies from 2007 to 2009, according to Emmanuel et al. (2019). They used a census sample method to choose 15 companies at random from the industrial products industry, and then they used secondary data pulled from 18 companies' annual reports to conduct their ex-post facto study. Environmental disclosure was measured in their research using financial, non-financial, and performance measures; Tobin's Q was used as a stand-in for company value. Firm value was shown to be favorably affected by non-financial variables, and negatively affected by performance indicators, according to linear regression analysis. But there was no discernible impact on financial metrics. According to the research, businesses may increase their worth by following the guidelines set forth by the Global Reporting Initiative (GRI). A potential constraint that might impact the findings' generalizability is the use of just two years of data.

Environmental disclosure was investigated by Deswanto and Siregar (2018) to determine its moderating influence on the link among environmental performance, financial performance, and business value. Using data from 211 companies traded on the Indonesia Stock Exchange between 2012 and 2014, they wanted to see how environmental disclosure affected company valuation and bottom line results. Share price closure, ROS for financial performance, and GRI 3.1 rankings and scores for environmental disclosure and performance were the metrics used to determine firm worth. The research could not find any substantial improvement in financial performance and business value via environmental disclosure using simultaneous equation modeling and panel regression analysis. Not only that, but environmental disclosures in Indonesia had no moderating influence on the relationship between financial and environmental performance and business value. The study's authors urged policymakers to use grading and evaluation systems to promote sustainability disclosure. The research had certain limitations, such as a three-year time frame and the fact that it only included enterprises that have received the green industry award from Indonesia's minister of industry.

Over the seven-year span from 2014 to 2020, Yondrichs et al. (2021) studied the impact of governance sustainability disclosure on corporate value. They set out to determine if and how listed Indonesian firms' values were affected by governance transparency. From among all the enterprises listed on the Indonesian Stock Exchange during that time frame, thirty were chosen using a purposive selection approach. No statistically significant relationship between governance sustainability disclosure and firm value was found in the research that used panel regression analysis and secondary data. In order to entice investors and stakeholders, the research suggested enhancing governance transparency and establishing requirements for reporting on governance sustainability.

In their 2021 study, Haidar and Sohail used 2015–2017 Saudi Stock Exchange data to analyze how sustainability disclosure affected the stock value of Saudi Arabian companies listed on the exchange. The purpose of this research was to examine how sustainability reporting affects the value of businesses. Out of 519 organizations that were quoted, 25 were selected utilizing a purposive sampling method in the study, which used an ex-post facto research methodology. The dependent variable was represented by Tobin's Q, while the explanatory variable was sustainability disclosure. There was no statistically significant relationship between sustainability disclosure and firm valuation after analyzing secondary data using ordinary least squares multiple regression. As a baseline disclosure requirement, the research suggested that

Saudi regulators should push for listed companies to use the GRI methodology for sustainability reporting. Over the course of three years, the survey covered every industry.

Ahmed and Kabiru (2020) examined nine listed Nigerian manufacturing businesses to see how the Governance Disclosure Index (CGDI) affected their company value from 2012–2019. Using the market-to-book value ratio as a surrogate for company value, their goal was to investigate the impact of governance transparency on firm value. Financial statements of the firms that were part of the sample were used to gather secondary data, which was then analyzed using regression. According to the results, CGDI has a negative and statistically significant effect on company value. According to the research, Nigerian oil and gas firms that are publicly traded should make sure they follow all international standards for corporate governance.

In a study that spanned 2007–2011, Ullah et al. (2020) looked at the relationship between governance sustainability disclosure and the market value of German and British enterprises. Listed manufacturing businesses' firm value was the target of their investigation on the effects of governance sustainability disclosure. The research examined 120 German and British corporations' 600 corporate governance reports using a dynamic generalized method of moments (GMM) estimator. Results showed a positive correlation between the governance sustainability index and the market value of British and German corporations, indicating that disclosure of governance practices is valuable in these nations.

Mohamad (2020) studied the impact of ESG disclosure on the value of Malaysian listed enterprises from 2009 to 2019. Examining the impact of ESG disclosure on business value was the primary objective of the research. The dependent variable in this study was the value of the 70 companies listed on Bursa Malaysia using Tobin's Q ratio; the independent variables were ratings on environmental, social, and governance factors determined from content analysis. Applying robust fixed-effect regression to secondary data, we find that ESG disclosure has a positive and statistically significant impact on business value. Research concluded that firms might increase their value and appeal to investors by disclosing more information about their environmental, social, and governance practices.

The effect of governance sustainability disclosure on the financial performance of listed Indian enterprises was studied by Al-ahdal and Farhan (2020) from 2009 to 2016. Their goal was to find out how much of an impact disclosures on governance sustainability had on the bottom line. The research used secondary data evaluated using regression and a longitudinal survey approach to select 53 non-financial listed organizations. Return on equity (ROE) and Tobin's Q, two measures of a company's financial success, showed no statistically significant relationship with governance sustainability.

Junius et al. (2020) studied 270 listed Asian enterprises to see how ESG disclosure affected their performance from 2013–2017. They set out to determine if and how sustainability disclosure affected financial results. The price-to-earnings ratio, return on assets, Tobin's Q ratio, and environmental, social, and governance scores were the dependent factors, while environmental, social, and governance scores were the independent variables. The research indicated that ESG ratings did not significantly affect the financial performance metrics when a random effect model was used. Listed companies' financial situations may not improve much even if ESG disclosures were not required, according to the report.

The effect of corporate sustainability disclosure on the market value of industrial products businesses listed on the Nigerian Exchange Group was studied by Hassan (2020). Listed Nigerian manufacturing businesses' firm values were the target of this study's investigation on the impact of governance sustainability disclosure. The research analyzed 78 annual reports from 13 different industrial businesses from 2011 to 2016 using content analysis methodologies and a disclosure criteria. Overall governance sustainability disclosure significantly increased firm value, according to data analysis utilizing OLS multiple regression. Environmental, social, and governance disclosures that are improved may lead to a rise in the company's

worth, according to the research.

Muslichah (2020) used financial performance as a mediator to study the effect of ESG disclosure on company value. We set out to examine, under the lens of financial performance as a mediator, how ESG disclosure affects corporate value. The study used a longitudinal research methodology and used purposive sampling to gather data from all Indonesian firms who participated in the Sustainability Disclosure Award from 2013 to 2016. Tobin's Q was used for valuing the business, and GRI 4.0 content analysis was employed for evaluating environmental and social disclosure. An intermediary variable was used to measure financial performance, namely return on assets. Financial performance was shown to mediate the relationship between disclosure of environmental and social sustainability efforts and business value, according to data analysis using the Partial Least Squares approach. In order to increase business value, the research suggested better social and environmental policy development and execution, and it found that environmental and social transparency had a good but minor impact.

Firm value and financial performance of Nigerian airline businesses were studied by Abdi et al. (2020) in relation to environmental, social, and governance disclosures. Our study's overarching goal was to determine if and to what extent ESG reporting influences company value. From 2013–2019, eight airlines were chosen using a purposive selection strategy. We used pillar scores of the governance, social, and environmental aspects as our independent variables, and Tobin's Q and the market-to-book ratio as our dependent factors. After using multiple regression approaches to panel data gathered from secondary sources, we found that social disclosure had a negative connection with firm value proxies, whereas environmental and governance disclosures had a positive one. In order to help management maximize value for shareholders, the research suggested improving sustainability reporting.

Researchers Emeka-Nwokeji and Osisioma (2019) looked at how sustainability reporting affected the stock price of Nigerian companies. The purpose of this research was to look at the relationship between the market value of listed Nigerian companies and sustainability disclosures, both as a whole and in its component parts. The research used Tobin's Q as a proxy for company market value and included 93 of the 120 non-financial companies listed on the Nigerian Stock Exchange in 2015. Using text analysis, we culled secondary data from the 2006–2015 annual reports of a random sample of companies using an Ex Post Facto research strategy. Disclosures regarding corporate governance, environmental sustainability, and overall sustainability had a positive influence on firm value, according to data analysis that included descriptive statistics, correlation, principal component, and pooled ordinary least squares regression. Nonetheless, there was a small but detrimental impact on company value from social sustainability disclosures. Greater sustainability and value creation over the long run may be achieved by incorporating sustainability measures into reporting models and plans, according to the research.

Theoretical framework

Agency Theory

Jensen and Meckling (1976) state that managers will only provide knowledge if the advantages above the disadvantages, in accordance with the agency theory. The company's financial performance and the wealth of shareholders might take a hit when management put their own interests first. One such piece of information that can shed light on these processes is information on contractual debt commitments, management pay structures, or hidden political costs. By being transparent about both financial and non-financial issues, management hopes to avoid paying agency fees while giving the impression that they are acting in the best interests of the shareholders.

As a result of the difference between ownership and control, agency theory views shareholders as principals and management as agents. Although principals expect agents to put the company's interests first, agents

don't always do so (Padilla, 2000). Managers' opportunistic actions, which run counter to their stated objectives, might erode shareholder capital (Hamid, 2008). It is possible for agents to put their own interests ahead of principals' when there is a knowledge gap between the two parties (Sanda et al., 2005). Investors' risk perceptions are heightened when companies fail to disclose enough, leading to cheap shares or higher expectations for returns. According to Warren and Thomsen (2012), when sustainability disclosure is sufficient, it improves market efficiency and decreases the cost of capital for the business by reducing the perceived risks and information asymmetry among shareholders.

There are two caveats to agency theory that Daily et al. (2003) point out. First, it mostly concerns the firm's agents and founders, ignoring the egocentric actions of managers and workers. The second issue is that the theory ignores the interests of other parties involved in the relationship between business owners and managers, including the government, consumers, and suppliers. Sustainability reporting is a great tool for resolving these inadequacies by helping to bridge the information gap among stakeholders.

Stakeholders Theory

Anyone with an interest in how a business runs or makes choices may be considered a stakeholder; this includes consumers, vendors, workers, and even government bodies. According to the stakeholder hypothesis, first put out by Freeman (1984), companies owe all sorts of people—not only shareholders but also creditor groups and suppliers—something. Stakeholder theory aims to provide information to various stakeholder groups based on their societal effect, and sustainability disclosures are one way to do this. The issue of how to rank the information rights of different parties becomes paramount in light of this (Gray et al., 2001).

Within principal-agent interactions, agency theory proposes two formal management procedures to handle concerns of risk-sharing and agency. A method that has been proposed is known as outcome-based management (Ekanayake, 2004). In this model, agents are compensated according to the results that are seen by both the principals and themselves. Regardless of the agents' tactics, outcome-based management focuses on attaining outcomes (Choi and Liker, 1995). The second method is behaviour-based, and it lets principals keep tabs on agents' actions and exertion via the use of behaviour controls that would be hidden otherwise (Ekanayake, 2004). Management based on behaviour places an emphasis on the steps that agents take to achieve their goals. The fact that it is impossible to satisfy the needs of all parties involved in the disclosure process makes it a difficult one. So, according to stakeholder theory, companies must find a middle ground between the many stakeholders' often conflicting demands (Robberts, 1992).

Legitimacy Theory

Dowling and Pfeffer proposed the idea of legitimacy theory in 1975. It states that companies and society have a "social contract" in place. By adhering to society standards and values in their operations, companies are granted the right to function and exist according to this contract. They risk losing their credibility and, by extension, their very existence, if they don't conform to these expectations. What we call a "legitimacy gap" occurs when public perception of a firm differs from its actual actions. It is generally agreed that a company's capacity to meet its social obligations and stay in line with society ideals determines its long-term performance. A precipitous fall in public support and confidence can affect the company's longevity if this doesn't happen.

An essential tenet of legitimacy theory is the idea that businesses should work to raise people's living standards generally. In order for the public to determine whether companies are meeting their responsibilities to society as a whole, sustainability reporting is vital. Based on legitimacy theory, this study seeks to understand how sustainability-related data can help bridge information gaps, cater to different

stakeholder interests, and keep businesses legitimate while increasing their value to society.

METHODOLOGY

This study takes a non-experimental approach by following non-financial companies in Nigeria over time to see how disclosures about governance and social sustainability affect firm value. It also takes board independence into account as a moderator of this relationship. A total of 69 non-financial firms were chosen at random from a pool of 104 that were listed for the research. The selected firms' previous annual reports were used as secondary data for the regression analysis. The dependent variable is firm value, which is represented by Tobin's Q. The independent variables are corporate social sustainability, which is represented by the average value of all published dummy data, and governance sustainability, which is represented by the total value of all disclosed dummy variables. The moderating variable includes board independence, which is determined by the ratio of non-executive directors to total directors. The study's designated model also includes company size as a control variable, which is defined as the logarithm of total assets.

The first model is moderated, whereas the second is not; both were taken from the research of Abdi et al. (2021).

MODEL I

$$TQ_{it} = \beta_0 + \beta_1 EDI_{it} + \beta_2 GDI_{it} + \beta_3 FS_{it} + \epsilon_{it} \dots \dots \dots (i)$$

Where:

TQ =: Tobins q

EDI= Environmental sustainability disclosure index.

GDI = Governance Sustainability disclosure index.

FS = Firm Size

B = Interception of the equations;

ϵ = The error term.

MODEL II

$$TQ_{it} = \beta_0 + \beta_4 EDI*BI_{it} + \beta_5 GDI*BI_{it} + \beta_6 FS_{it} + \epsilon_{it} \dots \dots \dots (ii)$$

Where:

TQ =: Tobins q

EDI*BI = Environmental sustainability disclosure index multiplied by Board independence.

GDI*BI = Governance sustainability disclosure index multiplied by Board independence.

FS = Firm Size

B = Interception of the equations;

ε = The error term.

The Above model is with moderation.

Table 1. Measurement of Variables

Variable Acronym	Variable Name	Variable Measurement	Type	Source (s)
Dependent Variable				
TQ	Tobin's Q	The ratio of (the market capitalization + total liabilities) / the book value of total assets.	dependent	Emeka-Nwokeji and Osisoma (2019)
Independent Variables				
GDI	Governance disclosure index	Averaged value of all dummy disclosed data	Independent Independent	Abdi et al (2021)
EDI	Environmental disclosure index	Averaged value of all dummy disclosed data	Independent	Emmanuel & Ifeanyichukwu (2022).
Moderating Variable				
BI	Board Independence	Proportion of non-executive director/total number of directors		Obigbemi et al. (2016),
Control Variable				
FSIZE	Firm size	measured as the log of total assets	Independent	Yusuf and Kighir. (2021)

Source: Researchers Computation from various research studies (2024)

RESULTS AND DISCUSSIONS

Table 2. Descriptive Statistics

Whether the data set is a sample of the whole population or only a subset of it, the descriptive statistics that follow provide concise informative coefficients that describe it. The two main components of descriptive statistics are central tendency and variability (spread) measurements. Mean, median, and mode are measurements of central tendency; standard deviation, variance, minimum and maximum variables,

kurtosis, and skewness are measures of variability.

Table 2

variable	N	mean	sd	variance	kurtosis	min	max	skewness
tq	690	1.462946	1.324688	1.754798	16.31515	.12	11.3	3.250154
edi	690	.0481884	.1513017	.0228922	13.41003	0	.75	3.371911
gdi	690	.4167674	.1685492	.0284088	2.123088	.0556	.8333	-.0737608
bi	690	.547913	.1639905	.0268929	2.296438	.17	.92	.1848128
gdibi	690	.2283333	.1202681	.0144644	3.029893	.03	.62	.7104509
edibi	690	.0235507	.0734807	.0053994	13.36812	0	.4	3.362429
fs	690	7.17913	.8056555	.6490808	2.543325	5.24	9.31	.2270273

Source: STATA 14 Output Results (2024)

Descriptive statistics for the study’s variables are shown in Table 2. As a whole, listed non-financial enterprises in Nigeria have a Tobin’s Q of 1.4629, 1.3247 SD, and 1.7548 variance. This shows that there is substantial dispersion around the mean, with a leftward and rightward deviation of around 1.3247 for Tobin’s Q. The variation in firm values within the sample is shown by the range of Tobin’s Q values, which extends from 0.12 to 11.3. With a coefficient of 3.2502, the distribution is positively skewed, meaning that most of the data points are located to the right of the normal curve. The distribution of Tobin’s Q values seems to be heavy-tailed and leptokurtic, as shown by the kurtosis coefficient of 16.3152.

A similar distribution holds true for the non-financial organizations that were included in the sample: an average GDI of 0.04168, a standard deviation of 0.1685, and a variance of 0.0284. Different companies provide different amounts of information about their governance practices, as seen by the wide range of GDI values (0.0556 to 0.8333). A significant portion of the data points are concentrated to the left of the normal curve, as shown by the negatively skewed distribution (-0.0738). The distribution of GDI values is platykurtic, meaning there aren’t any heavy tails as compared to a normal distribution, according to the kurtosis coefficient of 2.1321.

In addition, the studied businesses had an average environmental disclosure index (EDI) of 0.4819, a standard deviation of 0.1513, and a variance of 0.0228. The EDI values, which vary from 0 to 0.75, show that the corporations’ approaches to environmental disclosure are different. The bulk of the data points lie to the right of the normal curve, as shown by the positively skewed distribution with a coefficient of 3.3719. The distribution of EDI values seems to be heavy-tailed and leptokurtic, as shown by the kurtosis coefficient of 13.4100.

Board independence (BI), a moderating variable, with a mean of 0.5480, a standard deviation of 0.1640, and a variance of 0.0269. Distinct variations in board composition are shown by the BI values, which vary from 0.17 to 0.92. With a coefficient of 0.1848, the distribution is positively skewed, meaning that most of the data points cluster to the right of the normal curve. A kurtosis coefficient of 2.2964 indicates that the BI values do not follow a normal distribution with heavy tails; instead, they follow a platykurtic distribution.

The average value is 0.2283, with a standard deviation of 0.1202 and a variance of 0.0145, when the governance disclosure index (GDIBI) is tempered by board independence. Values for GDIBI vary from 0.03 to 0.62, suggesting that board independence moderates the disclosure of different levels of governance. The bulk of the data points are located to the right of the normal curve, according to the positively skewed distribution with a coefficient of 0.7105. The distribution of GDIBI values is heavy-tailed and leptokurtic, as

shown by the kurtosis coefficient of 3.0299.

Likewise, when board independence is used as a moderator for the environmental disclosure index (EDIBI), the mean value is 0.0236, the standard deviation is 0.0735, and the variance is 0.0054. Differences in environmental disclosure regulated by board independence are shown by the range of EDIBI values, which extends from 0 to 0.4. With a coefficient of 3.3624, the distribution is positively skewed, meaning that most of the data points lie to the right of the normal curve. The EDIBI values follow a leptokurtic distribution, suggesting heavy-tailedness, according to the kurtosis coefficient of 13.3681.

Furthermore, the selected businesses' firm size (FS) averages out at 7.1791 with a standard deviation of 0.8057 and a variance of 0.6491. The FS values vary from 5.24 to 9.31, which shows that the enterprises are different sizes. With a coefficient of 0.2270, the distribution is positively skewed, meaning that most of the data points lie to the right of the normal curve. The distribution of FS values is platykurtic, meaning there aren't any heavy tails, according to the kurtosis coefficient of 2.5433. Descriptive statistics provide light on the study's variables' distribution and variability, providing crucial insights.

The outcomes of the correlation between the variables are shown in Table 3 below. It includes the study's variables' Pearson pairwise correlation coefficients. Table 3 below displays the correlation matrix.

Table 3

Correlation Matrix							
	tq	edi	gdi	bi	edibi	gdibi	fs
tq	1.0000						
edi	0.1943	1.0000					
	0.0000						
gdi	0.1794	0.2827	1.0000				
	0.0000	0.0000					
bi	0.0568	-0.1148	0.0020	1.0000			
	0.1364	0.0025	0.9577				
edibi	0.2143	0.9514	0.2757	-0.0195	1.0000		
	0.0000	0.0000	0.0000	0.6089			
gdibi	0.1886	0.1209	0.7774	0.5853	0.1890	1.0000	
	0.0000	0.0015	0.0000	0.0000	0.0000		
fs	0.1664	0.3251	0.4828	0.0071	0.2938	0.3972	1.0000
	0.0000	0.0000	0.0000	0.8521	0.0000	0.0000	

Source: STATA 14 Output Results (2024)

The findings of the correlation study between Tobin's q and other factors are shown in Table 3. The Environmental Disclosure Index (EDI) and Tobin's q are somewhat correlated, having a correlation value of 0.1943. For every one unit rise in EDI, Tobin's q increases by roughly 0.1943 units, according to this statistically significant association at the 5% level (p-value = 0.000). A correlation value of 0.1794 indicates a positive association between Tobin's q and the Governance Disclosure Index (GDI). A 5% level of significance (p-value = 0.000) confirms this link, which means that for every one unit increase in GDI, Tobin's q rises by around 0.1794%.

The Environmental Disclosure Index (EDI) and Tobin's q show a slight positive connection of 0.2143 when

EDIBI is used as a moderator. At the 5% level of significance, this association is shown to be statistically significant, meaning that Tobin’s q increases by around 0.2143 units for every one unit rise in EDIBI.

In addition, the Governance Disclosure Index (GDIBI) tempered by board independence (q) and Tobin’s q have a positive correlation of 0.1886, suggesting a mitigated link. At the 5% level of significance, this association is shown to be statistically significant, meaning that Tobin’s q increases by 0.1886 units for every one unit change in GDIBI.

On top of that, there is a positive connection between board independence (BI) and Tobin’s q of 0.0568; nevertheless, this correlation is not significant at the 5% level (p-value = 0.1364). This indicates that Tobin’s q increases by around 0.0568 units for every one unit rise in BI. In addition, regarding the observed businesses, Tobin’s q is positively associated with firm size (FS) at a level of 0.1664. Listed non-financial enterprises in Nigeria saw a 0.1664-unit increase in Tobin’s q for every one-unit increase in company size throughout the research period, according to this statistically significant connection at the 5% level.

Table 4. Results of Multi-collinearity/VIF Test

Model I			MODEL II		
Variable	VIF	1/VIF	Variable	VIF	1/VIF
gdi	1.33	0.7515	gdibi	2.19	0.8409
edi	1.16	0.8589	edibi	1.10	0.9056
fs	1.37	0.7293	fs	1.26	0.7966
Mean VIF	1.22		Mean VIF	1.18	

Source: STATA 14 Output Results (2024)

The results of the multicollinearity tests performed on models one and two are shown in Table 4. The results show that the GDI has a VIF of 1.33 and a tolerance of 0.7515 from the study of governance disclosures. Given this, it’s reasonable to assume that GDI data does not exhibit a large degree of collinearity with respect to the other explanatory factors. In a similar vein, the Environmental Disclosure Index (EDI) does not exhibit perfect collinearity with other independent variables, as seen by its VIF of 1.16 and tolerance of 0.8589. Furthermore, there is no perfect collinearity with other explanatory variables when considering Firm Size (FIZE) with a VIF of 1.37 and a tolerance of 0.7293.

A VIF of 1.19 and a tolerance of 0.8409 for GDIBI indicate that there is no perfect collinearity with other explanatory factors in Model II, where the variables for GDIBI and EDIBI are moderated with board independence (BI). It is also confirmed that there is no perfect collinearity with other explanatory variables as EDIBI shows a VIF of 1.10 with a tolerance level of 0.9056.

Model I’s average VIF for all explanatory variables is 1.22 while Model II’s average is 1.18, indicating that the independent variables do not exhibit complete Multicollinearity. There is no need to worry about Multicollinearity since the VIF for both models is below 10 and the tolerance level is more than 0.1.

Table 5. Results of Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Test and test for serial correlation

Model I			Model II	
	Chi2	Prob > chi2	Chi2	Prob > chi2
Hettest	76.83	0.0000	92.50	0.000

Serial correlation	45.853	0.0000	47.264	0.0000
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Source: STATA 14 Output Results (2024)

Hetest Chi-squared test results for heteroskedasticity in Model I are 76.83 and in Model II they are 92.50, as shown in Table 5. There is a statistically significant relationship between these variables ($p = 0.000$) at the 5% level of significance. Therefore, the research rejected the null hypothesis, which implies homoscedasticity in the data for the fitted values of Tobin’s q in both models, and accepted the alternative hypothesis, which suggests that the residuals for the fitted values of Tobin’s q display heteroskedasticity. At the 5% level of significance, the chi-squared values shown in Table 5 (45.853 and 47.264, respectively) and the related p -values (0.0000) are noteworthy. Thus, the analysis concludes that auto/serial correlation difficulties are present in the data, accepting the alternative hypothesis. Regression with panel-corrected standard errors is therefore required to handle the issues of serial correlation and Heteroskedasticity.

Table 6. Results of Spam test

The study used the spam test to find out whether fixed effect regression or Pooled OLS regression was better. Pooled OLS Model is more suitable, according to the test’s null hypothesis; fixed effect model is more appropriate, according to the alternative hypothesis. If the P -value is more than 5% (0.05), then the null hypothesis is accepted; alternatively, the alternative hypothesis is accepted if the P -value is less than 5% (0.05).

Model I without Moderation Model II with Moderation

	F	Prob.> F	F	Prob.> F
F test	8.26	0.0000	8.52	0.0000

Source: STATA 14 Output Results (2024)

Based on the results shown in table 6, we can see that models I and II both favor fixed effect regression. This is because the F values for these models are 8.26 and 8.52, and the corresponding P values are 0.000 and 0.000, both of which are less than 5% (0.05). Hence, we can reject the null hypothesis and accept the alternative hypothesis.

Table 7. Results of Hausman test

To find out whether fixed effect regression or random effect regression is better, the Husman test was used. With the fixed effect model being the alternative hypothesis and the random effect model being the null hypothesis, the test seeks to determine which is more suitable. If the P -value is more than 5% (0.05), then the null hypothesis is accepted; alternatively, the alternative hypothesis is accepted if the P -value is less than 5% (0.05).

Model I without Moderation Model II with Moderation

	Chibar ²	Prob.> chi ²	Chibar ²	Prob.> chi ²
Hausman test	43.37	0.0000	42.98	0.0000

Source: STATA 14 Output Results (2024)

Above in table 7, we can see the results of the Hausman test. For models I and II, the corresponding

probability values were 0.0000 and 0.0000, respectively, which is less than 5% (0.05). This suggests that the fixed effect regression model is the best fit for both models. However, when we compared pooled regression with random effect regression using the spam test, we found that fixed regression was the best fit for both models.

Table 8. Results of Shapiro-Wilk (W) Test for Data Normality

Variable	Obs	W	V	z	Prob>z
tq	690	0.63537	163.907	12.432	0.00000
edi	690	0.83136	75.906	10.556	0.00000
gdi	690	0.98175	8.213	5.134	0.00000
bi	690	0.98246	7.896	5.038	0.00000
edibi	690	0.82376	79.328	10.664	0.00000
gdibi	690	0.95744	19.158	7.199	0.00000
fs	690	0.98692	5.886	4.322	0.00001

Source: STA TA 14 Output Results (2024)

In this research, the data was examined for normal distribution using the Shapiro-Wilk (W) test. At the 0.05 level of significance, this test sought to determine whether a variable comes from a normally distributed population by testing the null hypothesis. Table 8 above displays the test results.

Table 8 shows that Tobin’s q has the following statistical values: W test coefficient = 0.6354, Z-Value = 12.432, and P-Value = 0.00000. With a 95% confidence interval, the test yielded a 5% significance level. Subsequently, the research rejected the null hypothesis proposing a normal distribution for Tobin’s q data and supported the alternative hypothesis suggesting that the data do not fit to a normal distribution. With GDI, the same pattern holds: a W test coefficient of 0.9818, a Z-value of 5.134, and a P-value of 0.00000, all of which point to significance at the 5% level with a confidence level above 95%. Therefore, the research rejected the null hypothesis, which assumed that the GDI data followed a normal distribution, and supported the alternative hypothesis, which said that the data did not follow this pattern.

A similar pattern was seen with EDI, which showed a 5% level of significance with a P-Value of 0.00000, Z-Value of 0.8314, and W test coefficient of 0.9703. The research therefore rejected the null hypothesis, which postulated that EDI data follow a normal distribution, and supported the alternative hypothesis, which suggests that EDI data do not. W values of 0.9818, 0.8238, 0.9574, and 0.9869 for BI, GDIBI, EDIBI, and FIZE, respectively, as well as accompanying z and p values that confirmed significance at the 5% level, led to the same results.

Ordinary least squares (OLS) regression seems to be inappropriate for this study’s regression analysis based on the results of the Shapiro-Wilk test. To ensure the models’ robustness, panel-corrected standard error regression was used for the regression analysis.

Table 9. Fixed effect regression

Table 9 below displays the results of the fixed effect regression that was used to address the autocorrelation and heteroskedasticity issues in the model. Fixed effect regression with panel adjusted standard errors provides the evidence for accepting or rejecting the study’s null hypothesis.

This table shows the results after board independence is moderated with the variables as stated in Model II.

Fixed effect Regression

Panel-corrected						
tq	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
edibi	3.0617	0.6821	4.49	0.000	1.7248	4.3987
gdibi	1.4476	0.3914	3.70	0.000	0.6804	2.2147
fs	0.1074	0.0496	2.16	0.031	0.0101	0.2046
_cons	0.2906	0.3267	0.89	0.374	-0.3498	0.9310
R2		0.2719				
Wald Chi2		24.98				
Prob > Chi2		0.000				

Source: STATA 14 Output Results (2024)

The model fits the data and provides a substantial explanation for the observed association, as shown by the high Wald Chi2 value of 24.98 and the matching Prob.> chi2 of 0.0000, in addition to the high R squared value of 0.2719. Here we break down the study’s independent variables and describe the dependent variable’s connection with each one using coefficients, z-values, and p-values:

H0₁: Governance disclosure has no significant effect on firm value of listed non-financial firms in Nigeria when moderated by board independence

In listed non-financial businesses in Nigeria, the results revealed that board independence moderates the impact of governance sustainability disclosure on firm value (Table 8). This is supported by a z-value of 3.70 and a p-value of 0.000, which is less than 5%. Results show that board independence moderates the impact of governance sustainability disclosure on firm value in Nigerian listed non-financial enterprises, therefore rejecting the first null hypothesis and accepting the alternative. Board independence does, in fact, mitigate the impact of governance transparency on company value, according to these findings. Ahmad and Kabiru (2020), Ullah et al. (2020), and Hassan (2020) all came to similar conclusions on the impact of governance sustainability disclosure on business value. But it contradicts what Yondrichs et al. (2021) and Muslichah (2020) discovered, namely that disclosure of governance sustainability does not significantly affect business value.

H0₂: Environmental disclosures have no significant effect on firm value of listed non-financial companies in Nigeria when moderated by board independence.

Table 8 shows that at the 5% level of significance (t value 4.49, p=0.004), environmental disclosure, when tempered by board independence, significantly affects business value. The results show that listed non-financial firms in Nigeria do better financially when they disclose their environmental sustainability efforts, and this impact is mitigated by board independence. This means that the second null hypothesis is rejected and the alternative hypothesis is supported. Although this result runs counter to Muslichah’s (2021) conclusions that environmental sustainability disclosure significantly affects firm value, it is in line with the conclusions of Emmanuel and Ifeanyichukwu (2021) and Emmanuel et al. (2019).

CONCLUSION AND RECOMMENDATIONS

In line with the discussions and findings of the study, the study concludes that board independence significantly mitigates the value-reducing effects of disclosures on environmental sustainability and

governance. This shows that listed non-financial enterprises in Nigeria saw a substantial rise in firm value as a result of successive increases in governance and disclosure of environmental sustainability. According to the study's findings, listed non-financial firms in Nigeria should do the following:

1. Encourage increase in sustainability disclosure through rating and assessment mechanism.
2. Be more organized in Formulating and implementing governance and environmental friendly policies and Programmes as this is crucial towards improving its value.

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