Sustinere
Journal of Environment and Sustainability
Volume 8 Number 2 (2024) 242-261

Print ISSN: 2549-1245 Online ISSN: 2549-1253
Website: https://sustinerejes.com E-mail: sustinere.jes@uinsaid.ac.id

RESEARCH PAPER

Corporate Environmental Reporting: Do Firms Operating in Environmentally Sensitive Sectors Disclose Enough?

Abdulkadri Toyin Alabi*[1], Olanrewaju Saheed Issa[2], Muhammed Kamaldeen Usman[1]
[1]*Department of Accounting and Finance, Kwara State University, Malete, Nigeria.*
[2]*Department of Accounting, African University of Science & Technology, Nigeria*

Article history:
Received 11 June 2024 | Accepted 14 August 2024 | Available online 31 August 2024

Abstract. Corporate environmental disclosure has been increasing steadily as it is an essential factor for sustainable development. However, this factor seems to be insufficientl recognised within the Nigerian corporate world. The objective of this study is to assess the level of corporate sustainability disclosures in environmentally sensitive industries in Nigeria. This study is based on secondary data obtained from annual reports of firms listed on the Nigerian Exchange Group (NGX). Data used were collected from 45 sampled companies listed under 6 environmentally sensitive sectors for the 2021 financial year. Content analysis was applied to measure the level of environmental disclosures. The Environmental Disclosure Index (EDI) was prepared based on the Global Reporting Initiative (GRI) Standards. This research used independent sample t-test, analysis of variance, and the Kruskal-Wallis test as techniques of analysis. There were statistically significant differences in firms' disclosure levels based on environmental certifications. The agriculture industry made the highest environmental disclosure, whereas the companies in the natural resources industry disclosed the least. It was found that companies revealed maximum information on their energy and environmental compliance initiatives, while there was inadequate information in other areas of environmental disclosure, such as supplier environmental assessment, effluents and wastes, and materials. The study provides implications for the strict adoption of a systematic reporting framework, especially for environmentally sensitive firms, while offering insights to guide policymakers, regulatory bodies, industry associations, and businesses in Nigeria to promote transparency and responsible environmental reporting.

Keywords: Environmental disclosure; Sustainability; Non-financial reporting; Global Reporting Initiative; Environmentally sensitive firms; Nigeria

1. Introduction

Globally, the concept of corporate social and environmental responsibility has become a significant focus for companies, governments, and communities due to the growing recognition of environmental issues (Valavanidis, 2019). Consequently, there has been increased attention around the disclosure of environmental information by corporations in recent years (Rupley et al., 2012). Environmental disclosure became prominent during the United National Conference on

*Corresponding author. E-mail: alabiabdulkadri@gmail.com
DOI: https://doi.org/10.22515/sustinere.jes.v8i2.413

Environment and Development (UNCED) that took place in Rio de Janeiro in June 1992. Since then, there has been a notable increase in the number of both developed and developing countries that have enacted legislation regarding environmental disclosure. Additionally, a growing number of companies have recognised the importance of including environmental disclosure in their annual reports and accounts to cater to the interests of stakeholders (Freedman & Jaggi, 2005). Crowther (2022) states that the main objective of environmental disclosure is to analyse and include in a company's annual reports environmental risks that are not typically addressed in traditional accounting practices. This information can be used by stakeholders to make informed decisions.

The globe has vast natural resources, which have been used to achieve the degree of civilization that exist today. As the planet's natural resources are gradually depleting, it is everyone's responsibility to preserve them, including companies and individuals (Oluseyi-sowunmi et al., 2019). In the pursuit of the organisational goal of profit maximisation, business operations have impacted the environment both directly and indirectly throughout time (Iredele, 2020). The environment is directly affected by human activities such as oil rigging, dam construction, land ploughing, and power generation for the extraction of oil and gas. Indirect effects include oil spills, dam failures, and habitat destruction for animals (National Academy of Sciences, 2014; Parmigiani & Holloway, 2011).

The impact of these business operations on the environment did not receive significant attention until more detrimental occurrences, such as global warming and animal extinction, become apparent (Valavanidis, 2019). Business activities that have a greater impact on the environment due to their operations are referred to be environmentally sensitive (Al-Tuwaijri et al., 2004). Therefore, the disclosure of corporate environmental activities emphasizes the need for vigilant oversight of natural resources and highlight the company's detrimental impact on the community in which it operates.

Environmental disclosure practices in organizations have received less attention in underdeveloped nations compared to firms in developed nations (Eljayash et al., 2012; Kaur, 2015). While several governments require firms to reveal their sustainability practices, these mandates do not specify the exact information that companies must report. As a result, firms have flexibility in deciding what information to disclose about their sustainability practices (Ahmed Haji, 2013). Consequently, the absence of specific and standardized requirements at both national and international levels grants firms significant flexibility regarding their social and environmental reporting practices, allowing them to manipulate guidelines in a biased manner (Ahmed Haji, 2013; Michelon et al., 2015). Consequently, environmental disclosure often lacks completeness and exhibits considerable variation in content, information, and graphical data (Michelon et al., 2015; Said et al., 2013).

Furthermore, several studies have been conducted on environmental disclosure in developing countries, such as Nigeria, examining various aspects (Z. Ahmad et al., 2003; Dibia & Onwuchekwa, 2015; Ohidoa et al., 2016). The results of their investigations were mixed and inconclusive, highlighting the need to validate these studies. Despite increased attention and expectations from stakeholders, corporate environmental reporting in Nigeria remains much lower compared to similar nations. Environmental disclosure practices in environmentally sensitive firms are often inadequate and fail to meet the diverse demands of stakeholders (N. N. N. Ahmad & Haraf, 2013; Ahmed Haji, 2013; de la Cuesta & Valor, 2013; Hassan, 2010; Michelon et al., 2015; Rupley et al., 2012; Sulaiman et al., 2014).

Thus, it is crucial and encouraging to examine the level and variation of environmental disclosure. Assessing the variation in disclosures across various key industries contributes to a broader understanding of environmental reporting. Kaur (2015) argued that the evaluation of environmental disclosures is a contentious issue, whereas Alabi and Issa (2022) emphasised the important of considering the level and variation of provided environmental information. However, academics have noted that there is limited literature on the topic of social and environmental disclosure, specifically concerning the extent of disclosure (Michelon et al., 2015). Therefore, this research aims to address this gap in existing literature by examining the current state of corporate environmental disclosure practices in environmentally sensitive sectors in Nigeria.

The subsequent sections of this article are organized as follows: section two provides an in-depth review of the theoretical and empirical evidence surrounding corporate environmental disclosures. Section three outlines the research methodology used in this study. The results are analyzed and discussed in section four. Finally, section five presents the conclusion and policy recommendations.

2. Literature review and hypothesis development

2.1. Concept of environmental disclosure

The notion of environmental disclosure reporting gained prominence during the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in June 1992. The concept of environmental disclosure can be viewed from several viewpoints but ultimately aimed at the same objective. According to Paul and Pal (2001), disclosure refers to the provision of information, including both financial and nonfinancial data, to users of accounting reports, particularly investors. Disclosure may be either voluntary or legally required. Ishak (2010) describes environmental disclosure is a tactic used in environmental management to efficiently communicate with stakeholders. Environmental disclosure is also referred to as corporate social responsibility reporting (Deegan, 2002). Parker (1986) defines it is the act of corporations reporting on the social impact of their activities, the effectiveness of their social programmes, and how they are fulfilling their social responsibility and managing their social resources. The presence of self-induced vices, regulatory laxity, an unfavourable macroeconomic climate, and widespread corruption in the economy significantly hinder the provision of social and environmental accounting information (Adeyemi & Ayanlola, 2015; Alabi & Issa, 2022).

Zakimi and Hamid (2004) argue that corporations use environmental disclosure to communicate the financial impacts of their operations to the public. Lodhia (2004) defines corporate environmental disclosure as the act of including environmental information in a company's annual financial statements and accounts. This practice aims to communicate the company's financial status to stakeholders and demonstrated management accountability. According to Berthelot et al. (2003), environmental disclosure encompasses the information provided by a company on its historical, current, and future environmental management decisions, operations, and results. Pahuja (2009) defines environmental disclosure as the act of companies providing more environmental information in their annual reports compared to those that do not. As a result, these companies are more likely to include environmental information in their financial statements, even if their actual environmental performance is not strong. Additionally, these organizations encounter heightened demand from both internal and external stakeholders. Dixon et al. (2005) argue that including environmental information in the annual financial statements of publicly traded companies enhances compliance with environmental legislation and addresses the demands for clean water and clean air. Environmental disclosure influences how external parties perceive the firm, helps stakeholders evaluate the its status as a responsible corporate citizen, and ultimately justifies the company's continuous existence to the satisfaction of its stakeholders.

Dhaliwal et al. (2011) argue that when a firm engages in environmental disclosure, it can decrease or eliminate the knowledge gap between the company and its stakeholders, potentially leading to a reduction in the company's cost of capital. Dutta and Bose (2008) define environmental disclosure as the communication of information, including both financial and non-financial data, regarding a firm's resources and social performance. According to Shil and Iqbal (2005), environmental disclosure is a comprehensive approach to promoting good corporate governance through transparent and detailed reporting of a company's activities in society.

Carroll and Shabana (2010) define environmental disclosure as a firm's commitment to conducting business in a manner that both economically and environmentally responsible while considering the interests of all stakeholders.

Zakimi and Hamid (2004) describe environmental disclosure as a strategy used to communicate environmental information to stakeholders as part of environmental management. It involves disclosing information related to the natural environment, environmental conservation, and resource utilization. Dixon et al. (2005) explain that environmental disclosures refer to the reporting of environmental issues, including compliance with environmental regulations and the concerns raised by social and environmental activist organizations about a company's impact. Dibia and Onwuchekwa (2015) observe that corporations often use voluntary environmental reporting to underreport their impact on the environment, which contributes to a disregard for corporate social and environmental reporting by several business entities. Corporate environmental disclosure serves as a means of publicizing a company's environmental performance and represents an ongoing duty to disclose the expenses incurred in efforts to improve quality of life for its employees, their families, the local community, and society as a whole.

Consequently, there has been a significant increase in the number of corporations, both in developed and developing nations, that include environmental disclosures in their annual reports and other communication channels. Henderson and Pierson (2004) defined environmental reporting as the practice of addressing sustainability issues, including environmental preservation, intergenerational equality, and the management of the earth's resources. The growing importance of environmental reporting has also led firms enhanced their efforts to adhere to the regulations and standards of their individual communities.

According to Deegan (2002), corporations strive to ensure that their actions are perceived as legitimate by external parties, since they operate within a broader societal framework. Moreover, corporations strive to align their actions with evolving societal expectations and stakeholders concerns regarding human, environmental, and other social impacts (Deegan, 2001). In contrast, Campbell (2003) argues that enterprises that fail to align their operations with community expectations will face penalties and struggle to achieve success. Therefore, corporations must modify their actions to meet community expectations. Wheeler and Sillanpa¨a¨ (1998) argue that environmental reporting is an effective means of communicating with stakeholders. In their study, discovered that establishing trust and loyalty are crucial for enhancing business performance. particularly in situations where organisations are accountable to stakeholders and rely on their ongoing support to maintain a successful operational environment. Companies should strive to align external perceptions of their social responsibility with their actions to achieve financial goals. Campbell (2003) proposes the use of social and environmental disclosure to reduce or eliminate the gap between corporate behavior and societal expectations.

2.2. Environmental reporting by environmentally sensitive firms

Corporations are primarily divided into two categories: high-profile firms and low-profile firms (Choi, 1999; Hackston & Milne, 1996; Patten, 1992). High-profile firms refer to those that operate in environmentally sensitive sectors with significant environmental impact (Ho & Taylor, 2007; Stray & Ballantine, 2000). These companies are more susceptible to the influence of political and social factors compared to low-profile companies (Newson & Deegan, 2002). Several studies have shown that firms in environmentally sensitive industries disclose more information about their environmental impacts in their annual reports than firms in low-profile industries (N. N. N. Ahmad & Sulaiman, 2004; Ho & Taylor, 2007; Newson & Deegan, 2002) . On the other hand, Sahay (2004) in India and Cowen et al. (1987) in the United States concluded that there is no correlation between the environmental disclosure levels of corporations and the industries in which they operate. In light of these conflicting claims, we thus hypothesized that;

H1: There is no significant difference in the level of environmental disclosures across different environmentally sensitive sectors in Nigeria.

Investors and lenders rely solely on financial statements to assess a company's financial position and creditworthiness. Managers typically increase the level of information they disclose to minimise conflicts of interest among internal and external stakeholders (Akrout & Hakim Ben Othman, 2013). Brammer and Pavelin (2006) suggest that the high-geared companies are often exposed to greater financial risk due to their significant debt obligations. As a result, these companies may be more motivated to disclose their environmental practices and performance as a risk mitigation strategy. Environmental issues can pose financial risks, such as regulatory fines or reputational damage, therefore companies may want to demonstrate their commitment to sustainability to reassure investors and creditors.

Stakeholders, including investors and customers, may have varying expectations regarding environmental disclosures. Some stakeholders, especially those with strong environmental concerns or socially responsible investment criteria, may expect more comprehensive environmental disclosures from companies, regardless of their leverage levels. In contrast, others may prioritize financial information (Cormier & Magnan, 1999). On this ground, Naser et al. (2006) reported a positive influence of leverage level on environmental disclosure compliance, arguing that highly leveraged companies operate often in industries subject to strict environmental regulations, which may necessitate detailed environmental disclosures. Failing to meet regulatory requirements could lead to legal and financial consequences. In addition, Roberts (1992) claimed that high-geared companies, especially those seeking financing or facing debt refinancing, revealed that disclosing environmental information aligns with the preferences of creditors or investors who consider sustainability factors in their decision-making.

According to the aforementioned facts, firms operating in environmentally sensitive industries are more to face penalties. Consequently, fund providers will be more attentive to these firms' disclosures on corporate environmental responsibility. Therefore, corporations that contribute to environmental pollution are more inclined to provide more environmental information if they have a higher level of debt. Akrout and Hakim Ben Othman, (2013) also discovered that companies with greater levels of debt are more inclined to provide environmental information. Therefore, while high-geared companies may have stronger incentives to disclose environmental information, low-geared companies are not necessarily exempt from disclosing environmental data. Hence, we state that:

H_{02}: There is no significant difference in environmental disclosures of high-geared and low-geared companies in Nigeria.

Environmental certification bridges the discrepancy between the commercial and societal value systems. Obtaining certification from a reputable agency guarantees that the company actively implements procedures to align its operations with the specific requirements established by the certification organisations. Environmental certification mitigates agency costs, as certification is granted only to enterprises that adhere to environmentally friendly policies and meet standards set by the certification agency. This significantly significantly decreases monitoring expenses since enterprises willingly adhere to a set of externally established and measurable standards and objectives.

Mitchell and Hill (2009) and Sumiani et al. (2007) suggest that adherence to ISO 14001 environmental certification supports environmental reporting. Environmental information may be may be communicated to stakeholders via three different avenues. First, certification of goods, processes, and management practices by third party organisations, such as eco-label certification or ISO certification. The second category is self-certification without specific standards or external independent evaluation, such as corporate social responsibility reports released by firms. The third category is obtaining acknowledgment through ratings or environmental awards (López et al., 2004).

Companies that have obtained environmental certifications or adhere to recognized environmental standards often have a stronger incentive to disclose their environmental practices and performance. Support this position, Sarumpaet (2005) conducted a study in Malaysia that ISO 14001 certification is significantly associated with environmental disclosure. This implies that companies with environmental certifications or those operating in industries with stringent environmental regulations may be legally obligated to disclose specific environmental information, including emissions, waste management, and other impact metrics. Obtaining certification from a reputable agency guarantees that the company actively implements procedures to ensure that the company actively implements procedures to align its operations with the established requirements set by the certification organisations (Chaklader & Gulati, 2015).

Even in the absence of regulatory requirements, environmentally certified companies may voluntarily disclose additional environmental information to showcase their commitment to sustainability and attract socially responsible investors and customers. Conversely, non-certified companies may still provide environmental disclosures, but the extent and detail of these disclosures can vary widely based on factors such as industry norms, management philosophy, and the competitive landscape (López et al., 2004). On this note, therefore, we hypothesize that;

H_{03}: There is no significant difference in environmental disclosures of environmentally certified and non-certified firms in Nigeria.

Political connections are considered crucial fir enabling corporations to obtain various favourable benefits, including reduced taxes, access to financial and political resources, and eased regulatory supervision. These advantages assist companies mitigate risk and acquire a competitive edge (Faccio, 2006). Political connection refers to the relationships between a company's top management or directors and government officials (Peng & Luo, 2000). This is particularly true in developing nations, where restrictions on political connections with businesses are often less stringent (Bliss & Gul, 2012; Faccio, 2010). Companies may leverage their political affiliations to gain access to essential resources such as licenses, permits, and project approvals, while also potentially evading penalties for detrimental environmental or failure to disclose information (Muttakin et al., 2018). Politically connected enterprises may have less motivation to participate in highly-quality and substantial disclosure of their responsibilities (Marquis & Qian, 2013). Conversely, political connections can potentially enhance environmental conduct due to the increased likelihood of government oversight and enforcement on firms with political ties. This is particularly relevant in countries where political and administrative authority is robust, and political influence on business operations is prevalent. Connected enterprises may use environmental disclosure to gain political legitimacy and promote their standing as a way of reciprocating government financial assistance (Liu et al., 2018).

Existing research consistently demonstrates that politically connected companies have a greater ability to secure significant benefits and preferential treatment through their relationships with the government (Faccio, 2010; Pástor & Veronesi, 2013). These benefits include access to crucial resources for expansion, reduced capital costs, lower interest rates or higher loan approval rates, and decreased vulnerability to market fluctuations (Tsai et al., 2016; Yu & Zheng, 2019). Bao et al. (2016) conducted a study on publicly traded companies in China and discovered that Chinese enterprises use political connections to mitigate the risk of their initial public offerings (IPOs) being rejected. This is due to the perceived relationship between political connections and the probability of successfully securing an IPO in China. This suggests that political connections can provide a competitive advantage, and companies may use environmental disclosures strategically to maintain or enhance their market position.

In addition, companies with stronger political connections may be protected from the repercussions of weak environmental reporting or limited social accountability. Wu et al. (2016) investigated how political connections affect the enforcement of regulations against corporate fraud. They found that political connections significantly decrease the likelihood of legal action in cases of corporate fraud or unethical conduct. Managers with extensive political backgrounds tend to shield their companies from facing legal sanctions. Politically connected firms have little motivation to take on additional responsibilities beyond compliance or to provide comprehensive social and environmental reports, as they possess the ability to minimise the risk of enforcement action, receive consistent favourable treatment, and even evade legal sanctions for violations (Wang & Qian, 2011). On the other hand, corporations without political affiliations are more motivated to disclose their activities to showcase their commitment to social and environmental responsibility. This is done to establish a positive relationship with the government and secure necessary resources (Wang & Qian, 2011).

Prior studies (Liu et al., 2018; Muttakin et al., 2018; Yao, 2011)suggest that political connections help firms obtain government resources. The studies of Feng et al. (2020) and Wu et al. (2016) demonstrate that politically connected firms exhibit a higher level of disclosure compared non-politically connected firms. However, in Nigeria, political ties between business associates and government officials are highly unlikely to reduce the political risk and uncertainty associated with environmental reporting (Griffin et al., 2021). Therefore, we believe the characteristics of environmental disclosure in Nigeria due to political connections are crucial to examine, and the hypothesis is stated as follows:

H_{04}: Environmental disclosure levels of companies in Nigeria are not likely to differ due to corporate political connections.

3. Theoretical review

Freeman and Reed (1983) identified stakeholders as the groups that have an interest in the conduct of a company. In a further investigation, Freeman (1984) revised stakeholder theory and provided a new definition of stakeholders as individuals or groups who have an interest in a business because they can influence, or are influenced by, the actions of the organisation. Mpofu and Karedza (2013) define stakeholders as individuals or groups who may influence or be influenced by the activities, choices, policies, practices, or objectives of an organisation. Kassinis and Vafeas (2006) stated that stakeholders may be identified based on the legitimacy of their claims, which is validated by an exchange relationship between themselves and the organisation. Stakeholders include shareholders, creditors, executives, staff, clients, suppliers, local communities, and the general public.

Freeman and Reed (1983) argue that the stakeholder theory provides valuable insights into the factors that influence managerial behaviour regarding a firm's disclosure practices about its social and environmental impacts. This is because the activities of companies influence various stakeholders through the environmental impact of their operations and the costs associated with disclosure. Prior studies in social and environmental accounting, such as those by Foyeke et al. (2015) and Ebiringa et al. (2013), have demonstrated that companies address the demands of stakeholder groups, as well as the broader community in which they operate, by including social and environmental information in their annual reports.

Companies legitimise their actions by responding to expectation and demands of different stakeholder' on environmental issues and disclosures. Legitimacy theory, as defined by Dowling and Pfeffer (1975), refers to the alignment between an organization's values and those of the broader social system in which it operates. They also expressed that corporations strive to achieve alignment between social values underlying their activity and the standards of appropriate behaviour within the broader social system they belong to. Therefore, firms may choose to voluntarily environmental information to demonstrate their adherence to the societal norms and values of the communities in which they operate.

Dowling and Pfeffer (1975) suggested that legitimacy theory is advantageous for analysing business behaviour. This is because legitimacy is critical to organisations; the restrictions imposed by societal norms and values, as well as the responses to these restrictions, provide a framework for examining the actions that organisations take in relation to their surrounding environment. According to Uwalomwa (2011), legitimacy theory is relevant because it emphasized that a firm's legitimization strategy must incorporate communication (disclosure strategy) in addition to addressing the norms, values, or beliefs of general publics.

Researchers have discovered that polluting firms use social responsibility reporting as a way to appear legitimate, but these reports can be misleading (Du & Vieira, 2012). Thus, companies engaged in environmentally damaging activities, such as oil companies, are more likely to disclose their social responsibility and community involvement to mitigate potential criticism regarding their adverse effects on the environment and community (Vollero et al., 2019). Consequently, reporting on social and community engagement serves as a legitimising strategy for firms to gain sustainability ratings and enhance their market value (Feng et al., 2020). This study examines the interplay between environmental impact reporting and community investment reporting among environmentally conscious companies in Nigeria. It illustrates how firms that contribute to pollution can showcase their community investments while obscuring the true extent of their environmental and climate change effects the community and other stakeholders. Prior studies have not focused on environmentally sensitive firms to establish a connection with stakeholder and legitimacy theory. Therefore, this study makes a valuable contribution to the theory and practice of sustainability disclosure.

4. Research methodology

This study adopted an analytical research design and focused on firms operating in the environmentally sensitive sectors. For the purpose of sustainability, companies listed on the NSE can be classified into two main categories: environmentally sensitive sectors and non-environmentally sensitive sectors. The non-environmentally sensitive sector encompasses both financial and non-financial industries (Figure 1).

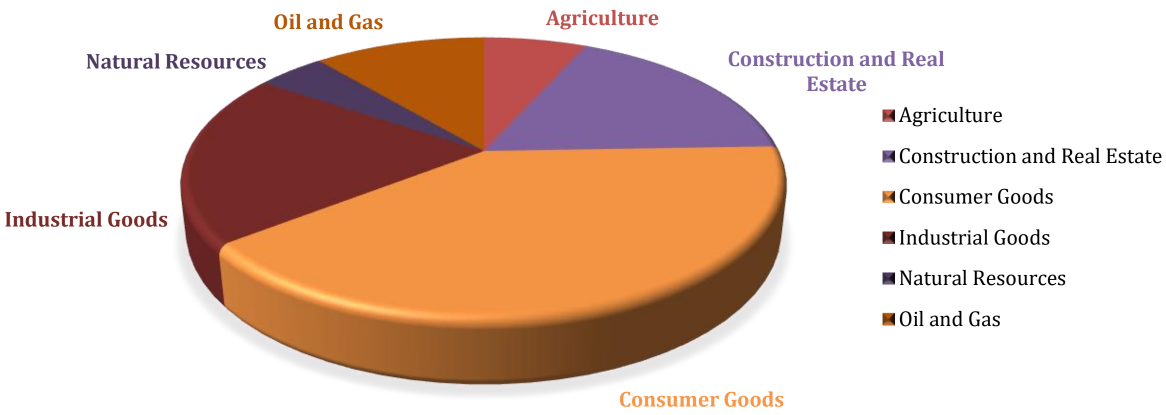

Figure 1. Distribution of sampled population by Environmentally Sensitive Sector

For this study, six sectors were classified as environmentally sensitive due to the nature of their business activities and their impact on the environment (Iredele, 2020). The number of firms listed under each of these sectors as listed on the Nigerian Exchange Group (NGX) is as follows: 9 in the oil and gas sector, 4 in natural resources, 5 in agriculture, 8 in construction, 13 in industrial goods, and 21 in consumer goods and real estate. Therefore, the population for this research consists of 60 publicly traded firms that operate in environmentally sensitive industries.

Data on environmental disclosures were gathered from the corporate annual reports and sustainability reports of the sampled firms for the period of 2021-22. Due to the unavailability of corporate reports from some organizations during the research period, convenience sampling was used, resulting in the selection of 46 companies for this research. Random samples were selected from each of the six sectors as follows: 5 in the oil and gas sector, 2 in natural resources, 3 in agriculture, 8 in construction, 9 in industrial goods, and 18 in consumer goods and real estate, totaling 45 firms. Data were gathered from financial year ending of 2022 for the sampled companies to capture the effects, as suggested by Hasseldine et al. (2005).

4.1. Measurement of variables

The current study employs content analysis to collect data on environmental disclosures. Content analysis involves transforming the content of textual reports or documents into objective and quantitative data (Cowan, 2007) which can be subjected to further parametric analysis. For this purpose, the study uses an Environmental Disclosure Index (EDI) as a research instrument for measuring environmental disclosures, adapted from the GRI standard. The GRI standard comprises 31 standard disclosures on the environment spread across 7 subthemes (GRI Standards, 2016), as shown in Table 1. The index used in this study has been modified to align with environmental reporting practices in India. Consequently, the final EDI adopted is a checklist of 21 environment performance indicators (Table 1).

Table 1. Categories of Environmental Disclosure Index

Environmental disclosure category	Disclosure items
Material	3 items [GRI Standard (301-1, 301-2, 303-1)]
Energy	5 items [GRI Standard (302-1, 302-2, 302-3, 302-4, 302-5)]
Water	1 item [GRI Standard (303-1)]
Emissions	7 items [GRI Standard (305-1, 305-2, 305-3, 305-4, 305-5, 305-6, 305-7)]
Effluents and waste	2 items [GRI Standard (306-1, 306-2)]
Environmental compliance	1 item [GRI Standard (307-1)]
Supplier environmental assessment	2 items [GRI Standard (307-1, 307-2)]

All 21 environmental indicators have been assigned equal importance in terms of disclosure, with uniform weights given to avoid subjectivity or bias. This method attempts to evaluate the quality and extent of disclosure using an interval scale. A five-point scale (0-4) has been used for comprehensively assess the extent and quality of environmental information reported by companies (Table 2). Each of the 21 environmental indicators is scored on a scale from 0 to 4 based on the magnitude of disclosure. The Environmental Disclosure Score (EDS) is computed as a relative score, ranging from 0% to 100% of the maximum possible disclosure score (Equation 1). Several studies have used this scoring method as a research instrument in content analysis (Clarkson et al., 2008; Cormier & Magnan, 1999; Yusoff & Lehman, 2006).

$$\text{Environmental Disclosure Score (EDS)} = \frac{\text{Total Disclosure Score}}{\text{Maximum Possible Disclsoure Score}} \tag{1}$$

Additionally, the data on company-specific variables such as leverage, international environmental certification, and political connection (Chaklader & Gulati, 2015; Ho & Taylor, 2007; Muttakin et al., 2018; Naser et al., 2006; Sarumpaet, 2005) were collected from Nigerian Exchange Group (NGX) factsheet for 2021, as well as from the annual reports of companies.

Table 2. Weighing scheme

Disclosure type	Assigned weight
No disclosure	0
General and brief statement	1
Qualitative and specific information, with many relevant points not addressed (may include percentages)	2
Quantitative and qualitative information, with detailed methods, standards, and reasoning (relating to current year)	3
Quantitative and qualitative information covering maximum aspects (with yearly comparisons, inter category comparisons, pictorial representations, and so on)	4

4.2. Reliability of the instrument

The reliability of the weighting scale was assessed using Cronbach's alpha, which was found to be 0.905, indicating that the rating instrument is highly consistent (Cronbach, 1951).

4.3. Results of findings

From Table 3, it is evident that firms in the agriculture sector have the highest mean environmental disclosure levels at 26.28%. This suggests that, on average, companies in this sector are relatively more transparent in disclosing their environmental practices and impacts. The consumer goods sector has a mean EDS of 18.77%, indicating that, on average, companies in this sector are moderately proactive in disclosing their environmental information. The industrial goods sector has a mean EDS of 20.03%, which is also relatively high, suggesting that companies in this sector tend to disclose their environmental practices and impacts at a moderate level.

Table 3. Descriptive statistics (Sector-wise)

Sector	Mean EDS (%)	No. of Firms	Minimum	Maximum	Mean	Std. Deviation
Agriculture	26.28%	3	1.0	4.0	2.333	1.5275
Consumer goods	18.77%	18	0.0	4.0	1.667	1.4142
Industrial goods	20.03%	9	0.0	4.0	1.778	1.4814
Natural resources	5.63%	2	0.0	1.0	0.500	.7071
Oil and gas	18.02%	5	0.0	3.0	1.600	1.1402
Construction/real estate	11.26%	8	0.0	2.0	1.000	.7559
Total average	17%	45				

Companies in the natural resources sector have the lowest mean EDS at 5.63%. This indicates that, on average, companies in this sector are less transparent regarding environmental disclosures. The oil and gas sector has a mean EDS of 18.02%, suggesting that, on average, companies in this sector provide environmental disclosures at a level similar to the that of the consumer goods sector, indicating moderate transparency. The construction/real estate sector has a mean EDS of 11.26%, reflecting a moderate level of environmental disclosure by companies in this sector.

Further, the result suggests that the highest environmental reporting is done by firms in the agricultural, consumer goods, and industrial goods sectors. Conversely, the lowest average environmental disclosure is observed in the construction and real estate sector. All other industries disclose environmental information at an average level ranging from 25% to 45%. Therefore, the results reveal variations in environmental disclosure levels across different sectors of Nigerian listed companies. The agriculture sector leading in disclosure levels, while the natural resources sector has the lowest level of environmental disclosure.

4.4. Thematic environmental disclosures

This sub-section examines the disclosure levels of individual environmental themes. The data here presented reveals the mean percentage of information reported by organisations under each of the seven environmental themes.

According to Figure 2, firms are most proactive and detailed in reporting their environmental initiatives. On average, companies 61.6% of information related to their energy usage, generation, and energy savings. The next highest disclosure is for environmental compliance initiatives, at 45.2%. Disclosures related to overall water usage and emissions themes are at 44.0% and 37.6%, respectively, reflecting significant environmental concern. Data on other environmental themes, such as effluents, waste, and supplier environmental assessments, are disclosed at relatively lower levels, ranging from 20% to 30%.

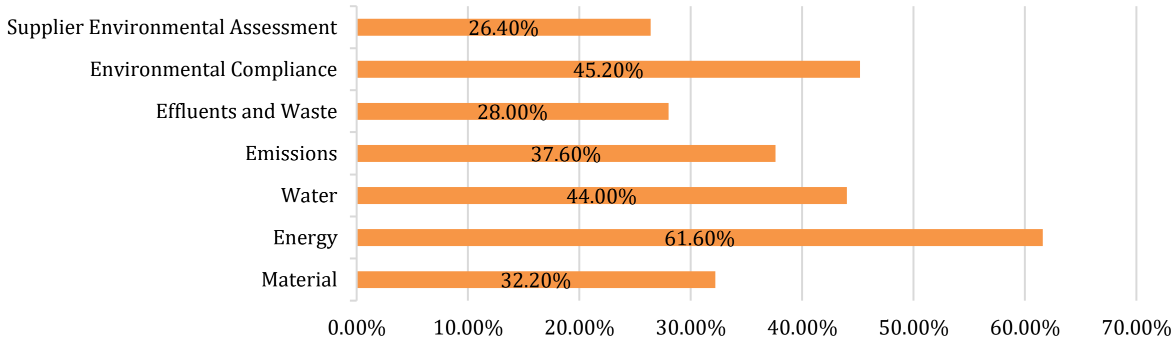

Figure 2. Thematic environmental mean disclosures levels

4.5. Inter-sector environmental disclosures

Table 4 presents the ANOVA results used to determine whether there are significant differences in environmental disclosure levels between the sectors of Nigeria. The very low *p*-value (0.000) indicates that there are statistically significant differences between among the sectors.

Table 4. One-Way ANOVA: Inter-sector comparison

	Sum of Squares	df	Mean Square	F	Sig.
Between groups	50.439	4	12.610	30.092	.000
Within groups	16.761	40	0.419		
Total	67.200	44			

The *F*-statistic of 30.092 suggests that the differences are are unlikely to be due to random chance. The significance at the 1% level confirms that environmental disclosure levels vary significantly across different industrial groups. Moreover, the Kruskal Wallis test was conducted to identify which industries had significantly different mean environmental disclosure levels from one another and produced similar findings. The results highlighted the group with the highest mean rank, reinforcing that there is a significant difference in the extent of disclosure among the sectors, with *p* of 0.0001. In other words, there are notable differences in environmental disclosures levels between the agriculture sector and other industries.

4.6. Environmental disclosures based on gearing level

Table 5 shows the average (mean) level of environmental disclosure for each group. The "High Geared" group has a mean of 19.33%, while the "Low Geared" group has a mean of 9.10%.

Table 5. Gearing-Level descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
High Geared	23	0.00%	73.53%	19.33%	24.99%
Low Geared	22	0.00%	55.88%	9.10%	13.88%
Total	45				

The two-tailed *p*-value in Table 6 is approximately 0.064, indicating the probability of observing the given difference in means (or a more extreme difference) if there were no real difference. The *p*-value is slightly above the conventional significance level of 0.05.

Table 6. Gearing level independent samples T-Test

T	Df	Sig. (2-tailed)	Std. Error Mean
1.958	21.0	0.064	0.056

The results suggest that there may be a marginal or borderline statistically significant difference in environmental disclosure levels between the "High Geared" and "Low Geared" companies. The *p*-value is approximately 0.064, which is just above the common significance threshold of 0.05, the *t*-statistic of approximately 1.958 reflects the direction and magnitude of this difference. Therefore, while there is a noticeable difference in environmental disclosure levels between the two gearing level groups, it does not meet the conventional criteria for statistical significance at the 5% level.

4.7. Environmental disclosures based on environmental (ISO) certification

In this section, we compare the mean environmental disclosure levels of companies based on their ISO environmental certification status. Companies that have obtained an international environmental management certification are believed to adopt and follow a well-specified environmental management system (da Silva Monteiro & Aibar-Guzmán, 2010). An independent samples *t*-test was used to assess the variances.

Table 7 above shows that companies with an international environmental certification have a mean disclosure level of 1.59%, compared to the higher mean disclosure level of 17.52% for companies without international environmental certification. The independent *t*-test results in Table 8 reveal a *p*-value of 0.021, indicating a statistically significant difference between the disclosure levels of the two groups.

Table 7. ISO Certification descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Yes	9	0.00%	5.59%	1.59%	2.21%
No	36	0.00%	73.53%	17.52%	22.10%
Total	45				

Table 8. ISO Certification independent samples T-Test

T-Test for equality of means			
T	Df	Sig. (2-tailed)	Std. Error Mean
-2.850	8	0.021	0.082

4.8. Environmental disclosures based on political connection

The output in Table 9 indicates that the average environmental disclosure scores of politically connected companies are significantly higher than those of companies without political connections.

Breaking this down, Table 9 shows that companies with a political connection have a higher mean disclosure level of 9.73%, compared to the mean disclosure level of 4.74% for companies without political connection. The independent t-test results in Table 10 reveal a *p*-value of 0.084, indicating that the difference between the disclosure levels of the two groups is statistically significant.

Table 9. Political connection descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Yes	15	0.00%	55.88%	9.73%	16.67%
No	30	0.00%	32.35%	4.74%	8.48%
Total	45				

Table 10. Political connection independent samples T-Test

T-Test for equality of means			
T	**Df**	**Sig. (2-tailed)**	**Std. Error Mean**
1.861	14.000	0.084	0.044

5. Discussion of findings

Based on the analyses and results of this study on environmental disclosure levels among listed companies in different sectors of Nigeria, it was found that, on average, only 17% of the environmental information measured according to GRI guidelines was reported by these companies. This figure appears relatively low compared to their counterparts in both developing and developed nations. Notably, a majority of companies seems to be fulfilling only the minimal data requirements of the GRI index to comply with international reporting standards and gain a competitive advantage domestically. It is suggested that some companies provide environmental reports primarily to create an illusion of legitimacy (Chaklader & Gulati, 2015; Pramanik et al., 2007; Sahay, 2004). The primary reason for these low disclosure levels is attributed to the absence of stringent regulations for environmental reporting.

One explanation for the observed low levels of environmental disclosure regulations in Nigeria could be the absence of comprehensive and enforceable environmental disclosure regulations. Without clear guidelines and penalties, companies may lack compelling reasons to report their environmental impacts. Inconsistent enforcement of existing regulations and weak regulatory oversight can also undermine the motivation for companies to invest in robust environmental disclosure practices.

From the perspective of stakeholder's theory and legitimacy theory, this result suggests that the regulatory environment significantly influences companies' environmental disclosure practices. If environmental reporting is not mandatory or if regulatory enforcement is weak, companies may not prioritize disclosure efforts, as it may not be legally required or enforced. Consequently, companies might perceive low levels of environmental disclosure as a strategic choice, focusing on short-term interests of key stakeholders and allocate resources to activities that offer more immediate benefits. While this approach may help maintain their legitimacy in specific contexts, it can impede broader efforts to promote environmental transparency and sustainability. Encouraging change will require aligning stakeholder interests, regulatory frameworks, and cultural values with long-term environmental concerns.

The findings further reveal that the environmentally sensitive firms in Nigeria focus their environmental disclosures on energy and environmental compliance initiatives. However, there appears to be a lack of motivation among these sampled companies to report on other areas of environmental concern, such as supplier environmental assessment, effluents and waste, and materials. Additionally, disclosures were predominantly positive or neutral, suggesting that companies are cautious about sharing information that might negatively affect their reputation (Chatterjee & Zaman Mir, 2008). Overall, environmental reporting in Nigeria can be characterized as inadequate, unsystematic, and performed in convenient manner (Sahay, 2004). Furthermore, it lacks a formal structure and transparency, particularly regarding third-party verification.

Moreover, the study found that most environmental disclosures are confined to the agriculture and the industrial goods sectors, indicating diverse levels of variation in environmental disclosure among environmentally sensitive firms in Nigeria. These significant differences between industries were verified using one-way ANOVA, which found the differences are statistically significant. It was observed that industries with a higher potential for environmental pollution are exposed to greater monitoring and regulations, which compels them to be more transparent and responsible in their operations. This align with the legitimacy theory, which suggests that highly polluting industries are held more accountable by society due to their greater environmental impact (Lindblom, 1994). However, the natural resources industry substantially ignored environmental disclosures in their reports, despite being classified as environmentally sensitive companies. Some companies in this industry did not even publish separate sustainability reports. To address this issue, reporting requirements should be strictly enforced to prevent these companies from omitting information about their environmental impact.

Another finding regarding the gearing levels of the sampled companies revealed that, while there is a marginal or borderline difference in environmental disclosure levels between high-geared and low-geared companies, the statistical significance is not firmly established. This can be explained by both the stakeholder and legitimacy theory. The legitimacy theory suggests that highly geared firms, which utilise greater societal and environmental resources, have a correspondingly greater responsibility towards these entities. In contrast, stakeholder theory argues that larger firms involve greater interests and expectations, necessitating that companies meet these expectations to avoid conflicts. This, the findings of this study support the socio-political theories of disclosure, specifically legitimacy and stakeholder theories.

For the ISO certification consideration, the findings indicate that companies with a certified environmental management system are more comprehensive in addressing environmental responsibilities and reporting in accordance with the implemented guidelines (Chaklader & Gulati, 2015). This is supported by the result, which suggest a significant difference in environmental disclosure levels between companies with and without ISO certification, and this difference was found to be statistically significant at the conventional significance level. The obvious reason for certified companies providing more efficient disclosures is the presence of a definite framework and guidance from international certification authorities.

Lastly, the findings of this study revealed an insignificant difference in environmental disclosure levels between politically connected and non-politically connected companies. This result suggests that political connections are not the primary driver of a firm's environmental disclosure practices. This could also be because many firms, including those with political connections, often engage in a wide range of business activities that span various industries and sectors, each with its own environmental impact. These practices are likely more directly influenced by the nature of the firm's core business operations and its environmental performance in those operations.

Incorporating stakeholder theory and legitimacy theory, it becomes evident that firms respond to a complex web of stakeholder pressures and legitimacy needs, of which political connections are just one part. While political connections may play a role in certain contexts, they are not the primary driver of environmental disclosure. Firms prioritize disclosure in response to diverse stakeholder expectations, regulatory requirements, global pressures, risk management, reputation considerations, and a commitment to long-term sustainability. Ultimately, the interplay of these factors has a more substantial influence on a firm's environmental disclosure practices than political connections alone. In conclusion, the findings of this study support hypotheses H2, and H4, while they do not support hypotheses H1 and H3.

6. Conclusion and recommendations

This study highlighted important differences in environmental disclosure levels based on sectors, gearing levels, ISO certification, and political connections. Significant variations in environmental disclosure levels were observed across different sectors of Nigerian listed companies, implying sector-specific practices and attitudes towards environmental reporting. While there is a discernible difference in environmental disclosure between high-geared and low-geared companies, statistical significance remains inconclusive. A significant relationship was found between ISO certification and environmental disclosure levels, emphasizing the importance of environmental certification. Statistical evidence revealed that both politically connected and politically non-connected companies disclose an equal amount of information about their environmental practices, indicating the insignificant influence of political connections on environmental disclosure. These findings provide valuable insights for policymakers, regulatory bodies, industry associations, and companies in Nigeria to promote greater transparency and responsible environmental reporting practices within the corporate sector.

It is recommended that the regulators develop sector-specific environmental disclosure guidelines to assist companies in improving their reporting practices. Tailoring guidelines to the specific needs and challenges of each sector can help standardize and enhance environmental disclosures. As environmental reporting and corporate practices evolve, regularly updating and adapting disclosure guidelines and regulations to keep them aligned with global standards and best practices. Cross-sector collaboration and knowledge sharing could also be encouraged to facilitate the adoption of best environmental disclosure practices across different industries in Nigeria.

However, the study is limited by the sample size, while informative, may not be representative of the entire Nigerian listed companies. A larger and more diverse sample would increase the study's generalizability. Additionally, the study employed a cross-sectional design, limiting the ability to infer causation. Future studies could benefit from longitudinal or experimental designs to examine temporal relationships and causal links. Quantitative data could also be complemented with qualitative research methods, such as interviews or surveys, to gain deeper insights into the motivations and challenges faced by companies regarding environmental disclosure. Addressing these limitations and exploring these suggestions in future research will contribute to a more comprehensive understanding of environmental disclosure practices and their determinants among listed companies in Nigeria and other similar contexts.

References

Adeyemi, S. B., & Ayanlola, O. S. (2015). Regulatory perspective for deepening CSR disclosure practice in Nigeria. *African Journal of Business Management Full*, *9*(6), 270–287. https://doi.org/10.5897/AJBM2014.7499

Ahmad, N. N. N., & Haraf, A. S. A. (2013). Environmental disclosures of Malaysian property development companies: towards legitimacy or accountability? *Social Responsibility Journal*, *9*(2), 241–258. https://doi.org/10.1108/SRJ-10-2011-0090

Ahmad, N. N. N., & Sulaiman, M. (2004). Environment disclosure in Malaysia annual reports: A legitimacy theory perspective. *International Journal of Commerce and Management*, *14*(1), 44–58. https://doi.org/10.1108/10569210480000173

Ahmad, Z., Hassan, S. B., & Mohammad, J. (2003). Determinants of Environmental Reporting in Malaysia. *International Journal of Business*, *11*, 69. https://api.semanticscholar.org/CorpusID:150967015

Ahmed Haji, A. (2013). Corporate social responsibility disclosures over time: evidence from Malaysia. *Managerial Auditing Journal*, *28*(7), 647–676. https://doi.org/10.1108/MAJ-07-2012-0729

Akrout, M. M., & Hakim Ben Othman. (2013). A Study of the Determinants of Corporate Environmental

Disclosure in MENA Emerging Markets. *Journal of Reviews on Global Economics, 2*, 46–59.

Al-Tuwaijri, S. A., Christensen, T. E., & Hughes, K. E. (2004). The relations among environmental disclosure, environmental performance, and economic performance: a simultaneous equations approach. *Accounting, Organizations and Society*, *29*(5), 447–471. https://doi.org/10.1016/S0361-3682(03)00032-1

Alabi, A. T., & Issa, S. O. (2022). Corporate Disclosure of Sustainability Reporting and Value Relevance in Developing Countries - A Review of Literature. *TIJAB (The International Journal of Applied Business)*, *6*(2), 165–175.

Bao, X., Johan, S., & Kutsuna, K. (2016). Do political connections matter in accessing capital markets? Evidence from China. *Emerging Markets Review*, *29*, 24–41. https://doi.org/10.1016/j.ememar.2016.08.009

Berthelot, S., Cormier, D., & Magnan, M. (2003). Environmental disclosure research: Review and synthesis. *Journal of Accounting Literature*, *22*, 1–44.

Bliss, M. A., & Gul, F. A. (2012). Political connection and leverage: Some Malaysian evidence. *Journal of Banking & Finance*, *36*(8), 2344–2350. https://doi.org/10.1016/j.jbankfin.2012.04.012

Brammer, S. J., & Pavelin, S. (2006). Corporate Reputation and Social Performance: The Importance of Fit. *Journal of Management Studies*, *43*(3), 435–455. https://doi.org/10.1111/j.1467-6486.2006.00597.x

Campbell, D. (2003). Intra- and intersectoral effects in environmental disclosures: evidence for legitimacy theory? *Business Strategy and the Environment*, *12*(6), 357–371. https://doi.org/https://doi.org/10.1002/bse.375

Carroll, A. B., & Shabana, K. M. (2010). The Business Case for Corporate Social Responsibility: A Review of Concepts, Research and Practice. *International Journal of Management Reviews*, *12*(1), 85–105. https://doi.org/10.1111/j.1468-2370.2009.00275.x

Chaklader, B., & Gulati, P. A. (2015). A Study of Corporate Environmental Disclosure Practices of Companies Doing Business in India. *Global Business Review*, *16*(2), 321–335. https://doi.org/10.1177/0972150914564430

Chatterjee, B., & Zaman Mir, M. (2008). The current status of environmental reporting by Indian companies. *Managerial Auditing Journal*, *23*(6), 609–629. https://doi.org/10.1108/02686900810882138

Choi, I. (1999). Testing the random walk hypothesis for real exchange rates. *Journal of Applied Econometrics*, *14*(3), 293–308. https://doi.org/10.1002/(SICI)1099-1255(199905/06)14:3<293::AID-JAE503>3.0.CO;2-5

Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organizations and Society*, *33*(4), 303–327. https://doi.org/10.1016/j.aos.2007.05.003

Cormier, D., & Magnan, M. (1999). Corporate Environmental Disclosure Strategies: Determinants, Costs and Benefits. *Journal of Accounting, Auditing & Finance*, *14*(4), 429–451. https://doi.org/10.1177/0148558X9901400403

Cowan, S. (2007). *Environmental reporting and the impacts of mandatory reporting requirements*. RMIT University.

Cowen, S. S., Ferreri, L. B., & Parker, L. D. (1987). The impact of corporate characteristics on social responsibility disclosure: A typology and frequency-based analysis. *Accounting, Organizations and Society*, *12*(2), 111–122. https://doi.org/10.1016/0361-3682(87)90001-8

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*(3), 297–334. https://doi.org/10.1007/BF02310555

Crowther, D. (2022). *A Social Critique of Corporate Reporting: Semiotics and Web-based Integrated Reporting (2nd ed.)*. Routledge. https://doi.org/10.4324/9781315565187

da Silva Monteiro, S. M., & Aibar-Guzmán, B. (2010). Determinants of environmental disclosure in the annual reports of large companies operating in Portugal. *Corporate Social Responsibility and Environmental Management*, *17*(4), 185–204. https://doi.org/https://doi.org/10.1002/csr.197

de la Cuesta, M., & Valor, C. (2013). Evaluation of the environmental, social and governance information disclosed by Spanish listed companies. *Social Responsibility Journal*, *9*(2), 220–240. https://doi.org/10.1108/SRJ-08-2011-0065

Deegan, C. (2001). *Financial Accounting Theory Roseville*. NSW: MCGraw-Hill Book Company Australia Pty Limited.

Deegan, C. (2002). Introduction: The legitimising effect of social and environmental disclosures – a theoretical foundation. *Accounting, Auditing & Accountability Journal*, *15*(3), 282–311.

https://doi.org/10.1108/09513570210435852
Dhaliwal, D. S., Li, O. Z., Tsang, A., & Yang, Y. G. (2011). Voluntary Nonfinancial Disclosure and the Cost of Equity Capital: The Initiation of Corporate Social Responsibility Reporting. *Accounting Review*, *86*(1).
Dibia, N. O., & Onwuchekwa, J. C. (2015). Determinants of Environmental Disclosures in Nigeria : A Case Study of Oil and Gas Companies. *International Journal of Finance and Accounting*, *4*(3), 145–152. https://doi.org/10.5923/j.ijfa.20150403.01
Dixon, R., Mousa, G. A., & Woodhead, A. (2005). The Role of Environmental Initiatives in Encouraging Companies to Engage in Environmental Reporting. *European Management Journal*, *23*(6), 702–716. https://doi.org/10.1016/j.emj.2005.10.014
Dowling, J., & Pfeffer, J. (1975). Organizational Legitimacy: Social Values and Organizational Behavior. *Pacific Sociological Review*, *18*(1), 122–136. https://doi.org/10.2307/1388226
Du, S., & Vieira, E. T. (2012). Striving for Legitimacy Through Corporate Social Responsibility : Insights from Oil Companies Striving for Legitimacy Through Corporate Social Responsibility : Insights from Oil Companies. *Journal of Business Ethics*, *110*, 413–427. https://doi.org/10.1007/s10551-012-1490-4
Dutta, P., & Bose, S. (2008). Corporate Environmental Reporting on the Internet in Bangladesh : An International Review of Business Research Papers Corporate Environmental Reporting on the Internet in Bangladesh : An Exploratory Study. *International Review of Business Research Papers*, *4*(3), 138–150.
Ebiringa, O. T., Yadirichukwu, E., Chigbu, E. E., & Ogochukwu, O. J. (2013). Effect of Firm Size and Profitability on Corporate Social Disclosures : The Nigerian Oil and Gas sector in Focus. *British Journal of Economics, Management & Trade*, *3*(4), 563–574. https://doi.org/10.9734/BJEMT/2013/5147
Eljayash, K. M., James, K., & Kong, E. (2012). The Quantity and Quality of Environmental Disclosure in Annual Reports of National Oil and Gas Companies in Middle East and North Africa. *International Journal of Economics and Finance*, *4*(10), 201–217. https://doi.org/10.5539/ijef.v4n10p201
Faccio, M. (2006). Politically Connected Firms. *American Economic Review*, *96*(1), 369–386. https://doi.org/10.1257/000282806776157704
Faccio, M. (2010). Differences between Politically Connected and Nonconnected Firms: A Cross-Country Analysis. *Financial Management*, *39*(3), 905–928. https://doi.org/10.1111/j.1755-053X.2010.01099.x
Feng, Y., Lai, K., & Zhu, Q. (2020). Legitimacy in operations: How sustainability certification announcements by Chinese listed enterprises influence their market value? *International Journal of Production Economics*, *224*, 107563. https://doi.org/10.1016/j.ijpe.2019.107563
Foyeke, O. I., Odianonsen, I. F., & Aanu, O. S. (2015). Firm Size and Financial Performance: A Determinant of Corporate Governance Disclosure Practices of Nigerian Companies. *Journal of Accounting and Auditing: Research & Practice*, *2015*, 1–8. https://doi.org/10.5171/2015.467294
Freedman, M., & Jaggi, B. (2005). Global warming , commitment to the Kyoto protocol , and accounting disclosures by the largest global public firms from polluting industries. *The International Journal of Accounting*, *40*, 215–232. https://doi.org/10.1016/j.intacc.2005.06.004
Freeman, R. E. (1984). *A Stakeholder Approach to Strategic Management*. Cambridge University Press.
Freeman, R. E., & Reed, D. L. (1983). Stockholders and Stakeholders: A New Perspective on Corporate Governance. *California Management Review*, *25*(3), 88–106. https://doi.org/10.2307/41165018
GRI Standards. (2016). *Global Reporting Standards: Global Reporting Initiative*.
Griffin, J. M., Liu, C., & Shu, T. (2021). Is the Chinese Anti-Corruption Campaign Authentic? Evidence from Corporate Investigations. *29th Annual Conference on Financial Economics & Accounting 2018 Finance Down Under 2019 Building on the Best from the Cellars of Finance Paris December 2018 Finance Meeting EUROFIDAI - AFFI PBCSF-NIFR Research Paper*.
Hackston, D., & Milne, M. J. (1996). Some determinants of social and environmental disclosures in New Zealand companies. *Accounting, Auditing & Accountability Journal*, *9*(1), 77–108. https://doi.org/10.1108/09513579610109987
Hassan, N. T. (2010). *Corporate Social Responsibility disclosure: an examination of framework of determinants and consequences*. Durham University.
Hasseldine, J., Salama, A. I., & Toms, J. S. (2005). Quantity versus quality: the impact of environmental disclosures on the reputations of UK Plcs. *The British Accounting Review*, *37*(2), 231–248. https://doi.org/10.1016/j.bar.2004.10.003
Henderson, S., & Pierson, G. (2004). *Issues in financial accounting French forest*. Pearson Education Australia.
Ho, L.-C. J., & Taylor, M. E. (2007). An Empirical Analysis of Triple Bottom-Line Reporting and its

Determinants: Evidence from the United States and Japan. *Journal of International Financial Management & Accounting*, *18*(2), 123–150. https://doi.org/10.1111/j.1467-646X.2007.01010.x
Iredele, O. O. (2020). Measuring performance in corporate environmental reporting in Nigeria. *Measuring Business Excellence*, *24*(2), 183–195. https://doi.org/10.1108/MBE-05-2019-0040
Ishak, R. (2010). Factors Influencing Environmental Reporting in Developing Economies. *Journal of Environmental Management*, *25*(3), 112–127.
Kassinis, G., & Vafeas, N. (2006). Stakeholder Pressures And Environmental Performance. *Academy of Management Journal*, *49*(1), 145–159. https://doi.org/10.5465/amj.2006.20785799
Kaur, M. (2015). Checking the Item wise Variation in the Environmental Reporting Practices of Indian Companies. *The Macrotheme Review: A Multidisciplinary Journal of Global Macro Trends*, *4*(1), 10–30.
Lindblom, C. K. (1994). The implications of organizational legitimacy for corporate social performance and disclosure. *Critical Perspectives on Accounting Conference*.
Liu, F., Lin, H., & Wu, H. (2018). Political Connections and Firm Value in China: An Event Study. *Journal of Business Ethics*, *152*(2), 551–571. https://doi.org/10.1007/s10551-016-3316-2
Lodhia, S. K. (2004). Corporate Environmental Reporting Media: A Case for the World Wide Web. *Electronic Green Journal*, *20*. https://doi.org/10.5070/G312010553
López, J. G., Sterner, T., López, J. G., Sterner, T., & Afsah, S. (2004). *Public Disclosure of Industrial Pollution : The PROPER Approach for Indonesia ? Public Disclosure of Industrial Pollution : The PROPER Approach for Indonesia ?* (Issue October). Resources for the Future.
Marquis, C., & Qian, C. (2013). Corporate Social Responsibility Reporting in China: Symbol or Substance? *Organization Science*, *25*(1), 127–148. https://doi.org/10.1287/orsc.2013.0837
Michelon, G., Pilonato, S., & Ricceri, F. (2015). CSR reporting practices and the quality of disclosure: An empirical analysis. *Critical Perspectives on Accounting*, *33*, 59–78. https://doi.org/10.1016/j.cpa.2014.10.003
Mitchell, C. G., & Hill, T. (2009). Corporate social and environmental reporting and the impact of internal environmental policy in South Africa. *Corporate Social Responsibility and Environmental Management*, *16*(1), 48–60. https://doi.org/10.1002/csr.179
Mpofu, T., & Karedza, G. (2013). Views on Corporate Social Responsibility. *European Journal of Business and Management*, *5*(26), 36–40.
Muttakin, M. B., Mihret, D. G., & Khan, A. (2018). Corporate political connection and corporate social responsibility disclosures. *Accounting, Auditing & Accountability Journal*, *31*(2), 725–744. https://doi.org/10.1108/AAAJ-06-2015-2078
Naser, K., Al-Hussaini, A., Al-Kwari, D., & Nuseibeh, R. (2006). Determinants of Corporate Social Disclosure in Developing Countries: The Case of Qatar. *Advances in International Accounting*, *19*, 1–23. https://doi.org/10.1016/S0897-3660(06)19001-7
National Academy of Sciences. (2014). *Climate Change Evidence & Causes*. The National Academies Press. https://doi.org/10.17226/18730
Newson, M., & Deegan, C. (2002). Global expectations and their association with corporate social disclosure practices in Australia, Singapore, and South Korea. *The International Journal of Accounting*, *37*(2), 183–213. https://doi.org/10.1016/S0020-7063(02)00151-6
Ohidoa, T., Omokhudu, O. O., & Oserogho, I. A. F. (2016). Determinants of environmental disclosure. *IInternational Journal of Advanced Academic Research | Social & Management Sciences*, *2*(8), 49–58.
Oluseyi-sowunmi, S. O., Owolabi, A. A., Iyoha, F. O., & Uwuigbe, O. R. (2019). Corporate ethical standard and the quality of sustainability reporting : empirical evidence from commercial banks in nigeria Corporate ethical standard and the quality of sustainability reporting : empirical evidence from commercial banks in nigeria. *IOP Conf. Series: Earth and Environmental Science*, 012067. https://doi.org/10.1088/1755-1315/331/1/012067
Pahuja, S. (2009). Relationship between environmental disclosures and corporate characteristics: a study of large manufacturing companies in India. *Social Responsibility Journal*, *5*(2), 227–244. https://doi.org/10.1108/17471110910964504
Parker, A. (1986). Landfill gas – a potential environmental hazard. *Disasters*, *10*(1), 65–69. https://doi.org/10.1111/j.1467-7717.1986.tb00569.x
Parmigiani, A., & Holloway, S. S. (2011). Actions Speak Louder than Modes: Antecedents and Implication of Parent Implementation Capabilities on Business Unit Performance. *Strategic Management Journal*, *32*(5), 457–485. http://www.jstor.org/stable/27975915
Pástor, Ľ., & Veronesi, P. (2013). Political uncertainty and risk premia. *Journal of Financial Economics*,

110(3), 520–545. https://doi.org/10.1016/j.jfineco.2013.08.007
Patten, D. M. (1992). Intra-industry environmental disclosures in response to the Alaskan oil spill: A note on legitimacy theory. *Accounting, Organizations and Society*, *17*(5), 471–475. https://doi.org/10.1016/0361-3682(92)90042-Q
Paul, K. C., & Pal, B. (2001). Corporate environmental reporting in India. *Indian Accounting Review*, *5*(2), 27–45.
Peng, M. W., & Luo, Y. (2000). Managerial Ties and Firm Performance in a Transition Economy: The Nature of a Micro-Macro Link. *The Academy of Management Journal*, *43*(3), 486–501. https://doi.org/10.2307/1556406
Pramanik, A. K., Shil, N. C., & Das, B. (2007). Environmental accounting and reporting With special reference to India. *The Cost and Management*, *3*, 16–28.
Roberts, R. W. (1992). Determinants of corporate social responsibility disclosure: An application of stakeholder theory. *Accounting, Organizations and Society*, *17*(6), 595–612. https://doi.org/10.1016/0361-3682(92)90015-K
Rupley, K. H., Brown, D., & Marshall, R. S. (2012). J . Account . Public Policy Governance , media and the quality of environmental disclosure. *Journal of Accounting and Public Policy*, *31*(6), 610–640. https://doi.org/10.1016/j.jaccpubpol.2012.09.002
Sahay, A. (2004). Environmental reporting by Indian corporations. *Corporate Social Responsibility and Environmental Management*, *11*(1), 12–22. https://doi.org/10.1002/csr.51
Said, R., Omar, N., & Nailah Abdullah, W. (2013). Empirical investigations on boards, business characteristics, human capital and environmental reporting. *Social Responsibility Journal*, *9*(4), 534–553. https://doi.org/10.1108/SRJ-02-2012-0019
Sarumpaet, S. (2005). The relationship between environmental performance and financial performance of Indonesia. *Urnal Akuntansi Dan Keuangan*, *7*(2), 89–98. https://doi.org/10.9744/jak.7.2.pp. 89-98
Shil, N. C., & Iqbal, M. (2005). Environmental disclosure – a Bangladesh perspective. *The Cost and Management*, *3*, 85–93.
Stray, S., & Ballantine, J. (2000). A sectoral comparison of corporate environmental reporting and disclosure. *Eco-Management and Auditing*, *7*(4), 165–177. https://doi.org/10.1002/1099-0925(200012)7:4<165::AID-EMA138>3.0.CO;2-2
Sulaiman, M., Abdullah, N., & Fatima, A. H. (2014). Determinants of environmental reporting quality in Malaysia. *International Journal of Economics, Management and Accounting*, *22*(1), 63–90. https://doi.org/10.31436/ijema.v22i1.253
Sumiani, Y., Haslinda, Y., & Lehman, G. (2007). Environmental reporting in a developing country: a case study on status and implementation in Malaysia. *Journal of Cleaner Production*, *15*(10), 895–901. https://doi.org/10.1016/j.jclepro.2006.01.012
Tsai, W.-C., Wang, W.-Y., Ho, P.-H., & Lin, C.-Y. (2016). Bank Loan Supply in the Financial Crisis: Evidence from the Role of Political Connection. *Emerging Markets Finance and Trade*, *52*(2), 487–497. https://doi.org/10.1080/1540496X.2016.1110466
Uwalomwa, U. (2011). *Corporate Environmental Reporting Practices: A Comparative Study of Nigerian and South African Firms*. Covenant University.
Valavanidis, A. (2019). Current Environmental Issues and Emerging Global Challenges in the 21 st Century for Environmental Protection and Sustainable Development. *Scientific Review*, 1–52.
Vollero, A., Conte, F., Siano, A., & Covucci, C. (2019). Corporate social responsibility information and involvement strategies in controversial industries. *Corporate Social Responsibility and Environmental Management*, *26*(1), 141–151. https://doi.org/10.1002/csr.1666
Wang, H., & Qian, C. (2011). Corporate Philanthropy and Corporate Financial Performance: The Roles of Stakeholder Response and Political Access. *Academy of Management Journal*, *54*(6), 1159–1181. https://doi.org/10.5465/amj.2009.0548
Wheeler, D., & Sillanpa¨a¨, M. (1998). Including the stakeholders: The business case. *Long Range Planning*, *31*, 201–210. https://api.semanticscholar.org/CorpusID:154412650
Wu, W., Johan, S. A., & Rui, O. M. (2016). Institutional Investors, Political Connections, and the Incidence of Regulatory Enforcement Against Corporate Fraud. *Journal of Business Ethics*, *134*(4), 709–726. https://doi.org/10.1007/s10551-014-2392-4
Yao, S. (2011). Political connections, environmental information disclosure and environmental performance: Based on Data from Listed Companies in China. *Finance and Trade Research*, *4*, 78–85.
Yu, X., & Zheng, Y. (2019). The value of political ties for firms experiencing enforcement actions: Evidence

from China. *The British Accounting Review*, *51*(1), 24–45. https://doi.org/10.1016/j.bar.2018.08.001
Yusoff, H., & Lehman, G. (2006). International Differences in Corporate Environmental Disclosure Practices: A Comparison between Malaysia and Australia. *Journal of Management and Public POlicy*, *5*(1), 51–79.
Zakimi, F., & Hamid, A. (2004). Corporate Social Disclosure by Banks and Finance Companies: Malaysian Evidence. *Corporate Ownership & Control*, *1*(4), 118–130.