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ENVIRONMENTAL DISCLOSURES PRACTICE AND GROWTH OF LISTED INDUSTRIAL GOODS FIRMS IN NIGERIA

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Abstract

Despite the grwoing recognition of the importance of environmental sustainability, many firms in Nigeria's industrial goods sector continue to lag behind in terms of environmental disclosure practices. This study examined the relationship between environmental disclosure practice and firm's growth of listed industrial goods firms in Nigeria. Ex-post facto research design was used and panel data covering ten (10) years (2014-2023) alongside across thirteen (13) listed industrial goods firms in Nigeria. The data were analyzed using descriptive statistics and multiple linear regression analysis via E-views 10.0 statistical package. The study findings revealed that biodiversity disclosure has non-significant negative relationship {Coeff = -0.0148 (0.9273)} with return on investment of listed industrial goods firms in Nigeria, emission disclosure has a significant positive relationship {Coeff = 0.1513 (0.0315)} with return on investment of listed industrial goods firms in Nigeria, environmental restoration disclosure has non-significant negative relationship {Coeff = -0.3128 (0.0735)} with return on investment of listed industrial goods firms in Nigeria, environmental policy disclosure has a significant positive relationship {Coeff = 0.0145 (0.0116)} with return on investment of listed industrial goods firms in Nigeria while Climate change risk disclosure has a significant positive relationship {Coeff = 0.1331 (0.0031)} with return on investment of listed industrial goods firms in Nigeria. It was thus concluded that environmental disclosure practice have a significant effect on firm growth of listed industrial goods firms in Nigeria. The recommendations made included that industrial goods companies in Nigeria should develop and disclose clear environmental policies that outline their commitment to environmental sustainability. These policies should be regularly reviewed and updated to reflect changing environmental regulations and best practices.

Keywords:

Environmental disclosures practices, return on investment

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1.1 Introduction

Environmental disclosure practice is the process of companies communicating information about their environmental performance, impacts, initiatives, and strategies to various stakeholders. Environmental disclosure allows organizations to be transparent about their environmental practices and provides insights into how they are managing and mitigating their environmental footprint (Emenyi, (2024)[2] and Mahmudah, 2023). However, in recent years, there has been a growing recognition of the need for firms to prioritize environmental sustainability and transparency in their operations, driven in part by showing concerns over Climate change risk , environmental degradation, and social inequality (Nangih et al. 2022). This shift in corporate priorities has been accompanied by a growing body of research examining the relationships between environmental disclosure practices, and sustainability outcomes as opined by Wang et al. (2020). Theophilus and Ademola, (2020) recorded that the industrial goods sector is a significant contributor to the country's economic growth and development, but it is also a major source of environmental pollution and degradation.

The sector's environmental footprint is substantial, with many firms generating significant amounts of greenhouse gas emissions, waste, and pollution (Yan et al., 2023). As a result, there is a growing need for firms in the sector to prioritize environmental sustainability and transparency in their operations, and to disclose their environmental performance and impacts to stakeholders (Emenyi, 2024[2]; Emenyi, 2024[1]). However, despite the growing importance of environmental sustainability and disclosure, there is a lack of research examining the relationships between environmental disclosure practice and firm growth in the Nigerian industrial goods sector (Adebayo et al., 2020). The study is also motivated by the need to better understand the relationships between environmental sustainability, social responsibility, and economic performance. While there is a growing body of research examining the relationships between environmental disclosure practice and firm performance in developed economies, there is a lack of research examining these relationships in emerging economies like Nigeria as reviewed by Gerged et al. (2021). Furthermore, the study seeks to contribute to the development of a more nuanced understanding of the complex relationships between environmental disclosure practices, firm growth, and sustainability outcomes in the Nigerian context.

This study focuses on emission disclosure, biodiversity disclosure, environmental restoration disclosure, environmental policy disclosure, Climate change risk disclosure and return on investment. Emenyi, (2024)[2] stated that by examining the relationships between these variables, the study provide insights into the ways in which environmental disclosure practice influence firm growth and sustainability outcomes in the Nigerian industrial goods sector. The study's findings are expected to contribute to the development of a more comprehensive understanding of the relationships between environmental disclosure practices, firm performance, and sustainability outcomes, and to provide insights for policymakers, regulators, and corporate leaders seeking to promote environmental sustainability and transparency in the Nigerian industrial goods sector as also seen in Carnini et al., (2022) and Simeon, et. al. (2024)

1.2 Statement of the problem

The increasing importance of environmental sustainability and social responsibility in corporate decision-making has highlighted the need for firms to prioritize environmental disclosure practice (Eriandani et al., 2019). However, despite the growing recognition of the importance of environmental sustainability, many firms in Nigeria's industrial goods sector

continue to lag behind in terms of environmental disclosure practices. This lack of transparency and accountability in environmental reporting has significant implications for firm growth, as it can lead to reputational damage, loss of investor confidence, and decreased competitiveness (Amira et al., 2019). The absence of comprehensive environmental disclosure practice in Nigeria's industrial goods sector also raises concerns about the sector's environmental footprint and its impact on sustainable development as x-rayed by Amahalu, (2020) and Simeon, et. al. (2024). The sector's significant environmental impacts, including greenhouse gas emissions, pollution, and waste generation, underscore the need for firms to prioritize environmental disclosure practices. Also, by disclosing their environmental performance and impacts, firms can demonstrate their commitment to environmental sustainability and social responsibility, which can enhance their reputation and contribute to long-term firm growth (Meiryani et al. 2023).

Moreover, the lack of empirical research examining the relationships between environmental disclosure practice and firm growth in Nigeria's industrial goods sector highlights the need for a study that investigates these relationships and provides insights for policymakers, regulators, and corporate leaders seeking to promote environmental sustainability and transparency in the sector (Enefiok et al. 2024; Lourence et al. 2017; Emenyi, 2024[1]; Emenyi, 2024)[2]. Through exploring the relationships between environmental disclosure practice and firm growth, this study aims to contribute to the development of a more comprehensive understanding of the importance of environmental disclosure practice in promoting sustainable development and firm growth in Nigeria's industrial goods sector.

1.3 Objectives of the study

The main objective of this study was to investigate the relationship between Environmental disclosure practice and firm's growth of listed industrial goods firms in Nigeria. However, the specific objectives were:

1. To appraise the relationship between biodiversity disclosure and return on investment of listed industrial goods firms in Nigeria.
2. To evaluate the relationship between emissions disclosure and return on investment of listed industrial goods firms in Nigeria.
3. To examine the relationship between environmental restoration disclosure and return on investment of listed industrial goods firms in Nigeria.
4. To ascertain the relationship between environmental policy disclosure and return on investment of listed industrial goods firms in Nigeria.
5. To assess the relationship between Climate change risk disclosure and return on investment of listed industrial goods firms in Nigeria.

1.4 Research questions

This study sought to provide answers to the following questions;

1. What is the relationship between biodiversity disclosure and return on investment of listed industrial goods firms in Nigeria?
2. How does emission disclosure affect return on investment of listed industrial goods firms in Nigeria?
3. To what extent does environmental restoration disclosure affect return on investment of listed industrial goods firms in Nigeria?
4. What is the relationship between environmental policy disclosure and return on investment of listed industrial goods firms in Nigeria?
5. To what magnitude does Climate change risk disclosure affect return on investment of listed industrial goods firms in Nigeria?

REVIEW OF RELATED LITERATURE

2.1 Conceptual framework

2.1.1 Environmental disclosures practice

Environmental disclosure practice is the act of providing information about a firm's environmental performance, policies, and impacts. This includes information about a firm's efforts to reduce pollution, conserve natural resources, and mitigate Climate change risk . Environmental disclosure practice are becoming increasingly important as stakeholders, including investors, customers, and regulators, seek to understand the environmental implications of a firm's operations (Khandelwal et al. 2023). Haixia and Jianping, (2022) and Emenyi,(2024)[1] stated that by disclosing environmental information, firms can demonstrate their commitment to environmental sustainability, manage reputational risk, and improve their relationships with stakeholders. Environmental disclosure practice can take many forms, including annual sustainability reports, environmental performance metrics, and disclosure of greenhouse gas emissions (Emenyi, 2024)[2];.

The importance of environmental disclosure practice cannot be overstated. As the world grapples with the challenges of Climate change risk , environmental degradation, and resource depletion, firms are under increasing pressure to demonstrate their environmental responsibility as reported by Emenyi, (2024)[1] and Amahalu, (2020). Make-up designs enhance cultural aesthetics, artistic style and tradition (Umoh, 2023). Environmental disclosure practice provide a means for firms to communicate their environmental performance and progress towards sustainability goals. Moreover, environmental disclosure practice can also help firms to identify areas for improvement, manage environmental risks, and capitalize on opportunities for innovation and growth as postulated by Sumiati et al. (2021). Amira et al. (2019) stated that by adopting environmental disclosure practices, firms can not only improve their environmental performance but also enhance their reputation, build trust with stakeholders, and contribute to a more sustainable future. As such, environmental disclosure practice are becoming an essential component of corporate sustainability and responsibility (Chauhan & Sharma, 2019).

2.1.2 Biodiversity disclosure

Johnson and Jumoke (2022) x-rayed that biodiversity disclosure is a crucial aspect of environmental disclosure practice for listed industrial goods firms in Nigeria. Biodiversity refers to the variety of living organisms in a particular ecosystem and the intricate interactions among them. Given the rich biodiversity in Nigeria, industrial goods firms operating in various sectors have a significant impact on the environment and local ecosystems (Ledi & Siregar, 2017). Emenyi and Okpokpo, (2023) added that biodiversity disclosure involves providing information on how these firms assess, manage, and mitigate their impact on biodiversity through their operations and supply chains. As indicated by He et al., (2018) disclosing their efforts to protect and preserve biodiversity, industrial goods firms can demonstrate their commitment to environmental stewardship and sustainability. This transparency not only enhances accountability but also allows stakeholders to evaluate the firm's performance in safeguarding biodiversity, which is essential for maintaining ecosystem services, supporting local communities, and ensuring long-term business resilience (Onoh et al. 2023).

The concept of biodiversity disclosure presents challenges for industrial goods firms in Nigeria. Despite the importance of biodiversity conservation, many firms may struggle with accurately measuring and quantifying their impact on biodiversity, especially in complex

supply chains and diverse ecosystems (Nimanthi & Priyadarshanie, 2021). The use of cosmetic materials and colourations to enhance one's look dates back to many centuries when people decorated themselves with locally-made materials – a practice that has been modernized to suit the modern and dynamic contemporary society (Umoh, 2023). Limited awareness and understanding of biodiversity issues among management and employees, as well as the lack of standardized frameworks for biodiversity disclosure, can further hinder firms' efforts to effectively communicate their biodiversity-related initiatives (Carnini et al. 2022). Additionally, the perceived trade-off between conserving biodiversity and achieving business objectives, such as cost savings and operational efficiency, may deter some firms from prioritizing biodiversity disclosure in their environmental reporting (Alhassan et al., 2021)

Addressing these challenges requires a holistic approach that integrates biodiversity considerations into corporate strategies, engages stakeholders in meaningful dialogue, and promotes collaboration with local communities and conservation organizations (Ahmad & Haraf, 2013). Alessi et al. (2021) summarized while biodiversity disclosure presents complexities for industrial goods firms in Nigeria, embracing this concept can lead to enhanced environmental performance, stakeholder trust, and long-term sustainable growth.

2.1.3 Emission disclosure

Emission disclosure is a critical aspect of environmental disclosure practice that focuses on companies reporting their greenhouse gas emissions, air pollutants, and other harmful substances released into the environment as a result of their operations. Gornall et al., (2020) reviewed that by providing transparent and accurate information on their emissions, firms can demonstrate their commitment to environmental stewardship, compliance with regulatory requirements, and progress towards reducing their carbon footprint. Emission disclosure enables stakeholders to assess a company's environmental performance, track its impact on Climate change risk, and hold it accountable for implementing mitigation measures (Okafor et al., 2022). Moreover, emission disclosure can drive innovation, efficiency, and cost savings by helping companies identify opportunities to reduce pollution, optimize resource use, and adopt cleaner technologies in their production processes (Pucheta-Martinez et al., 2016). By disclosing detailed data on their emissions sources, methods of calculation, reduction targets, and progress towards achieving those targets, firms can enhance their credibility, build trust with stakeholders, and improve their reputation as responsible corporate citizens (Moeller et al., 2019).

According to Alessi et al. (2021) the effectiveness of emission disclosure depends on several factors, including the reliability of data, the comprehensiveness of reporting, the consistency of methodologies, and the comparability of information across different companies and industries. Without standardized guidelines and verification mechanisms for emission disclosure, there is a risk of inconsistency, greenwashing, and lack of transparency that could undermine the credibility and integrity of reported data (Enefiok et al., 2024). To address these challenges, companies need to adopt internationally recognized frameworks such as the Greenhouse Gas Protocol, CDP (formerly the Carbon Disclosure Project), and the Task Force on Climate-related Financial Disclosures (TCFD) to guide their emission disclosure practice and ensure the quality and reliability of reported information (Eriandani et al., 2019). Regulatory bodies, industry associations, and civil society organizations also play a crucial role in promoting best practices, setting reporting standards, and monitoring compliance with emission disclosure requirements. Ultimately, emission disclosure is not only about meeting regulatory obligations but also about driving meaningful change,

fostering accountability, and promoting a culture of sustainability within organizations that can lead to long-term growth, resilience, and value creation in a rapidly evolving business landscape as opined by Gerged et al., (2023).

2.1.4 Environmental restoration disclosure

Environmental restoration disclosure is a key component of corporate transparency and accountability, reflecting a firm's commitment to addressing its environmental impact and contributing to sustainable practices. This type of disclosure involves companies reporting their efforts to remediate or restore ecosystems, habitats, or natural resources that have been adversely affected by their operations (Theophilus & Ademola, 2020). While environmental restoration disclosure is a positive step towards promoting ecological stewardship and responsible business practices, it also raises important questions about the reliability, completeness, and effectiveness of such disclosures (Menike, 2020). Critics argue that companies may use environmental restoration as a form of greenwashing, where they prioritize superficial gestures over meaningful actions to mitigate their environmental footprint. This underscores the need for standardized reporting frameworks and independent verification processes to ensure the credibility and integrity of environmental restoration disclosures (Gunawan & Lina, 2015).

He et al., (2018) supported that environmental restoration disclosure plays a crucial role in shaping stakeholder perceptions and influencing investment decisions. Shareholders, customers, regulators, and the broader community are increasingly demanding greater transparency from companies regarding their environmental performance and restoration efforts. By disclosing information on environmental projects, expenditures, outcomes, and long-term sustainability goals, firms can enhance their reputation, build trust with stakeholders, and differentiate themselves in the marketplace (Ismail & Sakr, 2022). However, the effectiveness of environmental restoration disclosure depends on the quality of data provided, the accuracy of reporting methodologies, and the comparability of information across different companies and industries (Ledi & Siregar, 2017). Without clear guidelines and benchmarks for assessing the credibility of environmental restoration disclosures, there is a risk of inconsistency, misinterpretation, and manipulation of information that could undermine the trust and confidence of stakeholders as stated by Johnson and Jumoke (2022).

Ismail et al. (2018) reviewed that the concept of environmental restoration disclosure raises broader ethical and social implications related to corporate responsibility, environmental justice, and intergenerational equity. Companies have a moral obligation to mitigate the negative environmental impacts of their operations, restore ecosystems to their natural state, and preserve biodiversity for future generations (Fizzah et al., 2023). By disclosing information on their environmental restoration initiatives, firms can demonstrate their commitment to sustainability, compliance with regulatory requirements, and alignment with international environmental standards (Gunawan & Lina, 2015). However, Smith and McCrea, (2018) argued that the voluntary nature of environmental restoration disclosure may lead to selective reporting, lack of transparency, and inadequate monitoring of restoration activities. According to (Umoh & Excellence, 2025), apart from the negative aspect, there is equally some positive outcome that promotes variety in this attitude. To address these concerns, policymakers, advocacy groups, and industry associations should work collaboratively to develop industry-specific guidelines, best practices, and performance indicators for measuring and reporting on environmental restoration efforts in a consistent and meaningful manner (Singleton-Green et al., 2019).

2.1.5 Environmental policy disclosure

Environmental policy disclosure refers to the public disclosure of a company's environmental policies, goals, and commitments, providing stakeholders with insight into the organization's approach to environmental management and sustainability. This disclosure can take various forms, including statements on a company's website, annual reports, sustainability reports, or other publicly available documents (Budiono and Dura, (2021). By disclosing environmental policies, companies demonstrate their commitment to environmental responsibility and transparency, which can enhance stakeholder trust and confidence in the organization's ability to manage environmental risks and opportunities (Ali et al., 2025).

The concept of environmental policy disclosure is important because it allows stakeholders to assess a company's environmental performance and progress towards its environmental goals. By making environmental policies publicly available, companies can demonstrate their commitment to environmental sustainability and accountability, which can have a positive impact on their reputation and relationships with stakeholders. Furthermore, environmental policy disclosure can also facilitate benchmarking and comparison among companies, enabling stakeholders to evaluate and compare the environmental performance of different organizations. Guduz and Guduz, (2025) added that environmental policy disclosure is an important aspect of corporate transparency and accountability, and can play a significant role in promoting environmental sustainability and responsible business practices.

2.1.6 Climate change risk disclosure

Climate change risk disclosure refers to the practice of companies and organizations reporting on their exposure to climate-related risks and opportunities, as well as their strategies for managing these factors. Such disclosures provide stakeholders—investors, regulators, customers, and the public with critical information about how businesses are addressing the challenges posed by Climate change risk. This may include data on greenhouse gas emissions, energy consumption, water usage, and the steps taken to mitigate environmental impacts as reported by Benson et al. (2021). Lusiana et al. (2021) added that regulatory bodies, including the Financial Stability Board’s Task Force on Climate-related Financial Disclosures (TCFD), are encouraging organizations to adopt standardized frameworks for reporting, thereby enhancing transparency and comparability across sectors. The use of foreign cosmetics by Nigerian makeup artists has been in vogue for decades, and as foreign product used on the body, it either sooths or reacts to the skin (Umoh et al.2025).

According to Nkanga et al. (2023), he importance of Climate change risk disclosure is underscored by the urgent need for businesses to adapt to a rapidly changing environment. As Climate change risk leads to more frequent and severe weather events, sea-level rise, and shifts in resource availability, companies face an array of financial and operational risks that can affect their long-term viability. By disclosing their climate-related risks and strategies, organizations not only fulfill regulatory obligations but also build trust with stakeholders, attract socially responsible investments, and enhance their reputational value (Hadro et al., 2022). Effendi, (2021) stated that transparent reporting can drive internal accountability and motivate firms to adopt more sustainable practices, ultimately contributing to the global effort to combat Climate change risk and foster resilience in the face of its impacts.

2.1.7 Firm's growth

Firm growth is a complex process that involves the expansion of a company's operations, market presence, and resources over time. The concept of firm growth is central to understanding how businesses evolve and adapt in response to changing market conditions, technological advancements, competitive pressures, and internal capabilities. In the context of economic anthropology, studying firm growth provides valuable insights into how organizations navigate economic landscapes, interact with social networks, and create value for stakeholders (Malarvizhi, 2016). Various factors influence firm growth, including strategic decision-making, innovation, market demand, financial resources, organizational culture, and external environment (Umoh et al., 2024).

The growth of a firm can take different forms, such as organic growth through increased sales and market share, strategic alliances or partnerships, mergers and acquisitions, diversification into new product lines or markets, or international expansion (Lourence et al., 2017). Each growth strategy carries its own set of opportunities, risks, and challenges for a firm. For example, organic growth allows a company to build on its existing strengths and capabilities while maintaining control over its operations (Amira et al., 2019). In contrast, mergers and acquisitions can provide access to new markets, technologies, or resources but may also introduce integration challenges and cultural differences that impact the success of the combined entity (Wang et al., 2020). Understanding the implications of different growth strategies is essential for firms seeking to sustain their competitiveness and long-term viability in the marketplace.

Akpan et al. (2024) postulated that the concept of firm growth is not solely measured by financial metrics such as revenue or profit. It also encompasses non-financial dimensions of growth, such as organizational learning, innovation capacity, employee development, social responsibility, and environmental sustainability (Akande & Ali, 2021). Anthropological perspectives on firm growth emphasize the importance of considering the socio-cultural context in which businesses operate and how they impact local communities, ecosystems, and social dynamics as investigated by (Alhassan, et al., 2021). Al-waeli et al., (2021) responded that by adopting a holistic approach to understanding firm growth, researchers can explore the multifaceted relationships between economic activities, social structures, and environmental concerns to promote sustainable and inclusive growth strategies that benefit both businesses and society at large.

2.1.8 Return on investment (ROI)

Return on Investment (ROI) is a financial metric that measures the return or profit generated by an investment, expressed as a percentage of the initial investment. It is a widely used indicator of an investment's performance and is often used to evaluate the financial viability of a project, business, or asset (Haixia & Jianping, 2022). ROI takes into account the initial investment, the gain or return from the investment, and the time period over which the investment was made. By calculating ROI, investors, businesses, and individuals can determine whether an investment has generated a satisfactory return, and make informed decisions about future investments (Gunawan & Lina, 2015).

The concept of ROI is crucial in business and finance, as it helps stakeholders to assess the financial performance of an investment and make comparisons with other investment opportunities. A high ROI indicates that an investment has generated a significant return, while a low ROI suggests that an investment may not be performing as well as expected as indicated by Qamruzzaman et al. (2021). ROI can be applied to various types of

investments, including stocks, bonds, real estate, and business projects (Ismail & Sakr, 2022). By using ROI as a metric, businesses and individuals can optimize their investment strategies, allocate resources more effectively, and achieve their financial goals (Gornall et al., 2020). Akpan et al., (2024) responded that ROI can be used to evaluate the performance of different business units, departments, or projects, enabling organizations to identify areas for improvement and make data-driven decisions.

2.1.9 Relationship between environmental disclosure practice and return on investment

Environmental disclosure practice have a significant impact on the return on investment for companies, as they can influence various factors such as reputation, investor interest, and stakeholder trust. While transparent disclosure of environmental efforts can enhance a company's image and attract sustainable investors, it may also involve costs that could potentially affect profitability (Sumiati et al., 2021). Striking a balance between environmental responsibilities and financial performance is crucial in maximizing ROI while demonstrating a commitment to sustainability (Ismail & Sakr, 2022).

2.1.9.1 Biodiversity disclosure and return on investment

The relationship between biodiversity disclosure and return on investment (ROI) of listed industrial goods firms in Nigeria is a complex and multifaceted issue. While one might expect a positive correlation between biodiversity disclosure and ROI, as firms that prioritize environmental sustainability might be viewed more favorably by investors and stakeholders, the empirical evidence suggests a negative relationship (Fizzah et al., 2023). This negative correlation could be attributed to the fact that biodiversity disclosure is often perceived as a cost burden, rather than a value-creating activity, by investors and stakeholders (Wahyuningrum et al., 2021).

Furthermore, the benefits of biodiversity disclosure, such as enhanced reputation and regulatory compliance, may not be immediately tangible or quantifiable, leading to a perceived trade-off between environmental responsibility and financial performance (Onoh et al., 2023). The dynamics of modern economy redefine the function of innovation engineered by the appropriation of self-knowledge and technological externalities that is driven by the display of more practical ideas exploring the knowledge bank of creative individuals to discover new potentials within a particular environment to discourage dependency as opined by (Umoh, 2024). Khandelwal et al., (2023) summarized that the negative relationship between biodiversity disclosure and ROI highlights the need for industrial goods firms in Nigeria to reframe their approach to environmental sustainability, by exploring innovative ways to communicate the value of biodiversity disclosure to investors and stakeholders, and by leveraging regulatory frameworks and stakeholder pressure to drive sustainability practices.

2.1.9.2 Emission disclosure and return on investment

Emenyi and Okpokpo, (2023) stated that the relationship between emission disclosure and return on investment (ROI) of listed industrial goods firms in Nigeria presents a complex and multifaceted that requires careful examination. While the disclosure of emissions data is crucial for transparency and accountability in assessing firms' environmental impact, its impact on ROI may vary depending on a multitude of factors. On one hand, increased emission disclosure could signal a commitment to environmental sustainability, potentially attracting socially responsible investors and enhancing long-term corporate reputation

(Alhassan, et al., (2021). Umoh and Excellence, (2025) stated that apart from the negative aspect, there is equally some positive outcome that promotes variety in this attitude.

The correlation between emission disclosure and ROI can be influenced by industry-specific characteristics, regulatory frameworks, and market perceptions, making it challenging to generalize the impact across all industrial goods firms (Ismail et al., 2018). It is essential for companies to strike a balance between emission reduction efforts and financial performance, leveraging emission disclosures as an opportunity to drive operational efficiency, innovation, and competitive advantage while navigating the complexities of managing environmental risks and stakeholder expectations (Theophilus & Ademola, 2020). According to (Umoh, 2023) make-up design is one of the key components in the unique experience associated with performances and the vital tool for theatrical productions, film-making, social celebrations, festival and cultural promotion. Dikeh, (2020) advised that firm should delve deeper into sector-specific nuances and stakeholder preferences to illuminate the nuanced interplay between emission disclosure practice and financial outcomes in the Nigerian industrial goods sector, fostering informed decision-making and sustainable value creation strategies that integrate environmental, social, and economic considerations.

2.1.9.3 Environmental restoration disclosure and return on investment

Environmental restoration disclosure, which involves communicating efforts to remediate and restore environmental damage caused by a firm's operations, plays a crucial role in shaping stakeholders' perceptions of a company's commitment to sustainability and responsible business practices as opined by (Wang et al., 2020). By publicizing initiatives aimed at mitigating environmental harm, such as land reclamation, biodiversity conservation, or pollution remediation, industrial goods firms can enhance their reputation, foster stakeholder trust, and potentially attract socially conscious investors who prioritize environmental stewardship (Ahmad & Haraf, 2013). The use of signs and symbols in playwriting existed from the inception of playwriting to this contemporary era (Umoh, 2021). These disclosures not only demonstrate a proactive approach to addressing environmental impacts but also signal a long-term vision focused on sustainable growth and resilience (Ahmad & Haraf, 2013; Samuel, et. al, 2024).

However, the impact of environmental restoration disclosure on ROI may vary depending on the scale, effectiveness, and cost of remediation efforts. While transparent communication about restoration activities can contribute to enhanced brand value and differentiation in the marketplace, the financial implications of implementing restoration projects could pose short-term challenges to profitability and ROI, especially if significant resources are required. Umoh, (2021) opined that in the contemporary spirit, reading a text to draw its depth in terms of aesthetics is mostly based on its literariness and denotation which are grounded in the interactive understanding shared in the environment the text evolves. Balancing the financial implications of environmental restoration with the potential long-term benefits in terms of risk mitigation, regulatory compliance, and stakeholder engagement is essential for maximizing ROI while fulfilling environmental responsibilities (Yan et al., 2023).

2.1.9.4 Environmental policy disclosure and return on investment

The relationship between environmental policy disclosure and return on investment (ROI) of listed industrial goods firms in Nigeria can be significant. When industrial goods firms in Nigeria disclose their environmental policies, it can enhance their reputation and demonstrate their commitment to environmental responsibility. This can lead to increased

stakeholder trust and confidence, ultimately resulting in improved financial performance, including ROI. Hadro et al. (2022) documented that by disclosing environmental policies, firms can also mitigate environmental risks and reduce the likelihood of costly environmental liabilities, fines, and litigation, which can negatively impact ROI.

The disclosure of environmental policies can also have a positive effect on ROI by attracting environmentally conscious investors, customers, and employees. Firms that prioritize environmental sustainability are more likely to attract top talent, improve brand loyalty, and increase market share, all of which can contribute to improved financial performance. Khalid and Rawat, (2025) reported that environmental policy disclosure can also facilitate access to capital and reduce the cost of capital, as investors increasingly consider environmental sustainability in their investment decisions. By prioritizing environmental policy disclosure, listed industrial goods firms in Nigeria can potentially improve their ROI and achieve long-term financial sustainability as stated by Budiono and Dura, (2021) and Samuel, et. al (2024)

2.1.9.5 Climate change risk disclosure and return on investment

The relationship between Climate change risk disclosure and return on investment (ROI) for listed industrial goods firms in Nigeria is becoming increasingly significant as stakeholders demand greater transparency regarding environmental practices. As these firms disclose their exposure to climate-related risks, be it through regulatory changes, shifts in market demand, or physical impacts from climate events, they provide investors with a clearer picture of potential vulnerabilities and opportunities (Ali et al., 2025). This transparency not only helps mitigate perceived risks associated with Climate change risk but also plays a crucial role in attracting investment. Investors are increasingly favoring companies that demonstrate sustainability initiatives and responsible environmental management, which can translate into a competitive edge in the market (Muneer et al., 2025). Umoh et al. (2024) added that as an aspect of cultural knowledge system on the workability of herbs, some plants contain substances that can be extracted for makeup/prosthetics in Nigerian film industry. According to Matsumura et al. (2024), the effects of ROI on Climate change risk disclosure are equally impactful. When industrial goods firms experience strong financial performance, they often possess the resources and incentives to invest in sustainability measures and comprehensive reporting practices. Higher returns can enable these firms to undertake innovations that reduce their environmental footprints, such as adopting cleaner technologies and improving energy efficiency. Such investments can create a positive feedback loop, where improved sustainability efforts not only enhance Climate change risk disclosures but also lead to better financial performance over time. However, it's essential for firms in Nigeria to recognize that, given their challenges such as limited access to technology and fluctuating regulatory environments balancing immediate financial goals with long-term sustainability strategies is crucial (Amosun & Akintoye, 2021). By committing to transparent climate disclosures, these firms can better navigate the complexities of the Nigerian market while positioning themselves to capitalize on the growing global emphasis on sustainable business practices, further influencing their ROI positively (Nkanga et al., 2023).

2.2 Theoretical framework

The connectives between environmental disclosure practice and firm’s growth of listed industrial goods firms in Nigeria cannot be established without taking cognizance of

some important theoretical underpinnings. However, in the course of this study, the stakeholder theory, legitimacy theory and the institutional theory will be reviewed.

2.2.1 The Legitimacy theory by Dowling and Pfeffer, (1975)

Dowling and Pfeffer in 1975 propounded the Legitimacy. The legitimacy theory posits that organizations disclose their environmental efforts to gain societal acceptance and legitimacy. In Nigeria, where environmental concerns are increasingly becoming important to various stakeholders, including investors, customers, regulators, and communities, Dowling and Pfeffer, (1975) suggested that industrial goods companies need to demonstrate their commitment to environmental sustainability through transparent disclosure practices. By aligning their environmental disclosures with societal expectations and norms, these firms can enhance their reputation, credibility, and trust among stakeholders, thereby boosting their overall legitimacy in the eyes of investors and the public as seen in Menike, (2020). This enhanced legitimacy can translate into improved financial performance, as investors may view the firm as more sustainable and socially responsible, leading to increased investment and better returns on investment (Chauhan & Sharma, 2019). Therefore, understanding and applying the legitimacy theory can help industrial goods companies in Nigeria navigate the complex relationship between environmental disclosure practice and return on investment, ultimately contributing to their long-term success and sustainability in the competitive business landscape.

2.2.2 The institutional theory by Meyer and Rowan, (1977)

The institutional theory was propounded by Meyer and Rowan in 1977. The theory posited environmental disclosure practice of listed industrial goods firms in Nigeria are shaped by external pressures and norms, such as regulatory requirements, stakeholder expectations, and industry standards. According to this theory, firms adopted environmental disclosure practice to conform to these external expectations, gain legitimacy, and maintain their social license to operate. The significance of this theory to environmental disclosure practice and firms' growth lies in its ability to explain how external pressures influence firms' decisions to disclose environmental information, which in turn can impact their reputation, stakeholder trust, and ultimately, their growth and financial performance (Riyadh et al., 2020). In the Nigerian context, institutional theory can help explain how listed industrial goods firms responded to regulatory pressures, stakeholder expectations, and industry norms to adopt environmental disclosure practice that enhance their legitimacy and contribute to their growth and sustainability. Amira et al. (2019) reported that by understanding the institutional drivers of environmental disclosure practices, firms can better navigate the external environment and make informed decisions that balance their economic, social, and environmental responsibilities, ultimately contributing to their long-term growth and success.

2.2.3 The stakeholder theory by Edward Freeman, (1984)

The stakeholder theory was propounded by Edward Freeman in 1984. The theory posits that firms have a responsibility to various groups beyond just shareholders, including employees, customers, suppliers, communities, and the environment. In the context of environmental disclosure practices, Freeman, (1984) suggested that firms that prioritize transparency and accountability in their environmental reporting are more likely to attract investors, enhance their reputation, and ultimately drive long-term financial performance. Carnini et al. (2022) added that by recognizing the importance of environmental disclosure to various stakeholder groups, firms can better navigate the complex relationships between

environmental sustainability, social responsibility, and economic performance, ultimately contributing to their overall success and resilience in the market.

2.3 Empirical framework

Muneer et al. (2025) investigated the influence of environmental disclosure and corporate governance on the financial performance of Islamic banks in Saudi Arabia. This study highlights that sustainable practices are transparent with financial objectives using the religious framework of Islamic finance. This research is based on Worldwide Vision 2030, which covers sustainable development and promotes environmental, social, and governance (ESG) principles, as well as corporate governance factors, such as board composition and Shariah Supervisory Boards (SSBs). We use a hybrid approach for our findings, with a dataset spanning 2011–2023 for the quantitative analysis and 20 semi-structured analyses conducted for a qualitative approach that aligns with objectives. We found that environmental disclosure boosts profits and stakeholder trust. Corporate governance structures, such as environmental boards and sustainability committees, improve the environmental disclosure of financial performance in Islamic banks. In this positive interaction, specialized governance drives Sharia-compliant sustainability initiatives. SSBs help Islamic banks integrate sustainability and meet religious and ESG environmental standards. Board diversity and dedication in the sustainability committee both play important roles in enhancing environmental disclosure practices; in return, these improved financial performances. The interaction of environmental disclosure and board environmental expertise has a positive impact on the overall performance, which indicates that governance structure supports sustainability-related decision-making, aligning with transparency. This study suggests that Islamic banks standardize ESG frameworks, improve board environmental expertise, and invest in real-time sustainability reporting digital solutions. Saudi Islamic banks can lead regional and global sustainable banking by adopting these strategies to align with global sustainability trends, improve financial performance, and meet ethical finance expectations.

Khalid and Rawat, (2025) examined corporate environmental disclosures and role of top management: Evidence based on the Business Responsibility and Sustainability Reporting in India. With rising Climate change risk issues, firms globally are increasingly asked to disclose environmental-related information. An increasing number of stakeholders and investors now require companies to disclose more detailed environmental or carbon-related information, such as GHG emissions, to support effective decision-making and corporate planning. This study focuses on the effect of top-level management commitment on the quality of firm-level environment-related disclosures. For this purpose, a comprehensive environmental disclosure index based on the business responsibility and sustainability report (BRSR) of India's top-listed firms is developed to capture the level and quality of disclosures. Our results show that firms with dedicated board-level environments and sustainability committees perform better on environmental disclosures. This relationship remains valid even after considering differences in firm-level disclosure differences arising from firm ownership. Further, our results also show a positive association between the percentage of women on the board and the quality of firm-level environmental disclosures. This study provides important policy implications for regulating corporate environmental disclosures in emerging economies.

Gündüz and Gündüz, (2025) investigated the impact of environmental accounting disclosures on the financial performance of banks listed on Borsa Istanbul (BIST). In this study, sustainability and integrated reports for 2019–2023 are analyzed, and environmental accounting disclosures are classified into two categories as operational and financial

activities. Using the Environmental Accounting Reporting Score, the relationship with financial performance indicators such as return on assets, return on equity, earnings per share, and profit margin is analyzed using the seemingly unrelated regression (SUR) method. The results show that environmental accounting disclosures do not have a direct and statistically significant effect on financial performance. However, control variables such as bank size, debt-to-asset ratio, and loan-to-asset ratio are found to have a positive effect on financial performance. In particular, larger banks tend to have higher profitability and earnings per share, while higher non-interest expenses have a negative impact on profitability. The study shows that the direct contribution of environmental accounting practices to financial performance is limited, but that banks' operational and financial structures are greater determinants of performance. These findings highlight the need for improvements in areas such as standardization of sustainability reporting, stakeholder awareness, and environmental risk management for policy makers and banks.

Ali et al. (2025) investigates the influence of Environmental, Social, and Governance (ESG) disclosure on the profitability of Saudi-listed non-financial firms in the context of Saudi Vision 2030. The study uses a sample of 100 non-financial organizations from 2019 to 2023 (500 firm-year observations). This study uses panel data analysis and a random-effects regression model to examine the relationship between ESG disclosure and firm profitability as assessed by return on assets (ROA). To assess ESG disclosure, this study developed a comprehensive ESG disclosure index based on worldwide ESG guidelines and Saudi-related regulations. The regression results show a significantly positive relationship between ESG disclosure and firm profitability, emphasizing the financial benefits of corporate transparency and sustainability. This finding is consistent with the stakeholder theory, implying that firms with strong ESG commitments boost investor trust, improve risk management, and increase operational efficiency. Thus, this study adds to the ESG literature by presenting empirical evidence from Saudi Arabia, a growing country that is undergoing regulatory transition. Additionally, this study's notable contribution is the development of a comprehensive ESG disclosure index tailored for the Saudi corporate landscape, integrating global reporting standards with local regulatory requirements. This index enhances the assessment of ESG transparency and offers a thorough tool for examining business sustainability strategies. The results offer substantial insights for policymakers, investors, and corporate leaders, emphasizing the significance of ESG in sustainable financial performance.

Samuel et al. (2024) examined the relationship between environmental voluntary disclosure and the market value of listed consumer goods firms in Nigeria. Specifically, it aimed to determine the relationship between carbon emissions disclosure and market capitalization, investigated the relationship between renewable energy consumption disclosure and market capitalization, and explore the relationship between waste management disclosure and market capitalization of these firms. The researchers adopted an ex-post facto research design and collected panel data covering ten years (2013-2023) from eighteen listed consumer goods firms in Nigeria. They analyzed the data using descriptive statistics and panel multiple regression analysis with the E-views 10.0 statistical package. The findings indicated that carbon emissions disclosure, renewable energy consumption disclosure, and employee health and safety disclosure each had a significant positive relationship with market capitalization. Additionally, community development disclosure also showed a significant positive relationship with market capitalization. However, waste management disclosure demonstrated an insignificant positive relationship with market capitalization. The study concluded that environmental voluntary disclosure played a crucial role in shaping the market value of listed consumer goods firms in Nigeria. It recommended that companies should

increase their use of renewable energy sources and communicate these efforts to stakeholders to enhance their market value and appeal to clean energy investors.

Loan et al. (2024) examined whether ESG disclosure impacted the financial performance of 24 Vietnamese commercial banks in terms of return on assets (ROA), return on equity (ROE), and net interest margin (NIM). The research design adopted for the study was longitudinal and secondary data were used. These secondary data were obtained from the studied firms annual report and the stock exchange fact books. Employing the feasible generalized least squares estimation method based on panel data from 2018 to 2022, the study utilized content analysis on 12 themes related to environmental, social, and governance pillars to score policy disclosure using the Fair Finance Guide Methodology. The results highlighted the positive effects of ESG policy disclosure, individual environment disclosure (E), and individual governance disclosure (G) on bank financial performance. Notably, ESG, E, and G had the largest influence on ROE, with coefficients of 0.051, 0.036, and 0.027, respectively, at a 5% significance level. However, the study did not provide evidence of a statistically significant association between social disclosure and financial performance. These results offer empirical evidence for regulators and bank managers to shape ESG policies and practices aligning with international standards.

Matsumura et al. (2024) using hand-collected carbon emissions data for 2013 to 2022 that were voluntarily disclosed to the Carbon Disclosure Project by S&P 500 firms, examined the effects on firm value of carbon emissions and of the act of voluntarily disclosing carbon emissions. Correcting for self-selection bias from managers' decisions to disclose carbon emissions, they find that, on average, for every additional thousand metric tons of carbon emissions, firm value decreases by $212,000, where the median emissions for the disclosing firms in their sample are 1.07 million metric tons. They also examine the firm value effects of managers' decisions to disclose carbon emissions. They find that the median value of firms that disclose their carbon emissions is about $2.3 billion higher than that of comparable non-disclosing firms. Their results indicate that the markets penalize all firms for their carbon emissions, but a further penalty is imposed on firms that do not disclose emissions information. The results are consistent with the argument that capital markets impound both carbon emissions and the act of voluntary disclosure of this information in firm valuations.

Friske et al. (2023) examined the relationship between voluntary sustainability reporting and firm value, as measured by Tobin's Q. The research design adopted for the study was longitudinal and secondary data were used. These secondary data were obtained from the studied firms annual report and the stock exchange fact books. Three main hypotheses, developed from signalling theory and sustainability reporting literature, were tested on a large panel of reporting and non-reporting organizations for the period 2011–2020. The results of a fixed effects panel model suggested that, in general, sustainability reporting was negatively related to Tobin's Q. However, the relationship between sustainability reporting and Tobin's Q became increasingly positive over time. The study concluded that sustainability reporting is initially a costly signal, but it eventually enhances firm value as companies learn to better communicate sustainability initiatives to stakeholders and investors learn to properly evaluate reports. Additionally, in an analysis of sustainability reporting organizations, it was found that external assurance is positively associated with Tobin's Q, indicating that external audits increase the credibility of reports.

Mahmudah et al. (2023) examined the effect of voluntary disclosure, specifically CSR and carbon disclosure, on firm value in the developing country of Indonesia. Researchers suspected that voluntary disclosure practice in developing countries remain low, leading to negative investor responses. The research design adopted for the study was ex post facto and secondary data were used. These secondary data were obtained from the studied firms annual report and the stock exchange fact books. The data were analysed using ordinary least square

regression analysis and the statistical software employed was SPSS version 20. Using regression analysis with a total of 72 observations from energy sector companies, the results indicated that voluntary disclosure negatively affected firm value. The level of voluntary disclosure in Indonesia was found to be minimal, primarily meeting government regulations and perceived as a cost impacting firm value. The study implied the need for the government to establish regulations and take concrete steps to mitigate the impact of Climate change risk.

Nkanga et al. (2023) examined the effect of voluntary disclosures on firms' value of 12 deposit money banks listed on the floor of the Nigeria Exchange Group from 2012-2021. The independent variable of the study being voluntary disclosure was proxied by social donations and gifting disclosure (SODD) and employee's health and safety disclosure (EHSD) while the dependent variable being firms' market value was proxied by Tobin's Q. Furthermore, in line with related extant literature, the study controlled the model goodness of fit by employing the variable of return on equity (ROE). The research design adopted for this study was ex post facto, purposive sampling technique was employed and secondary source of data used was obtained from the studied companies' annual report and Nigeria Exchange Group fact book. Dummy Least Square Variable regression was adopted to analyze and test the two hypotheses formulated for the study. The findings of the study revealed that social donation and gifting disclosure has a positive significant effect on the market value of deposit money banks while employee health and safety disclosure has an insignificant negative effect on market value of listed deposit money banks in Nigeria.

Elsayed (2023) explored how biodiversity disclosure affects the financial performance of firms. The study employed the content analysis of a sample of 100 Fortune Global companies for 3 years, after developing a comprehensive index to measure the quality of disclosure. Then normality, correlation, and multiple linear regression model and its estimation using ordinary least squares were performed to measure the impact of biodiversity disclosure on the financial performance of companies. The study results revealed a relationship between biodiversity disclosure and financial performance measured by return on assets and a stock's price-to-book ratio. This study is different from the current study because it was conducted outside Nigeria and employed only biodiversity disclosure as a measure of environmental disclosure whereas the present study considered three measures of environmental disclosure. Also this study covered a period of three years only and used return on assets and price -to-book ratio as measures of performance whereas the current study covered a period of seven years and market capitalization was used as a measure of performance.

Fizzah et al. (2023) examined the environmental disclosure on financial performance using green innovation as a mediating factor. This study used a sample dataset comprising Chinese firms listed on Shanghai and Shenzhen stock exchange for the period of 2005–2016. Empirical results showed that environmental disclosure affects firm financial performance directly and positively influences it through green innovation in Chinese firms. The study suggested that Chinese firms have implications for improved performance by increasing environmental disclosure and green practices. This study is different from the present study as it was conducted in China covering a period of 2005-2016, whereas this study covered a more recent period from 2017-2022.

Gerged et al. (2023) examined internal corporate governance (CG) mechanisms moderate the relationship between a firm's engagement in corporate environmental disclosure (CED) and earnings management (EM) practices in an emerging economy. A sample of 100 Jordanian listed firms from 2010 to 2014, constituting 500 firm-year observations, was utilized. The findings revealed a negative relationship between CED and earnings manipulations. However, the links between CG arrangements and EM were found to be heterogeneous, indicating that they might either reduce or increase earnings manipulations in

Jordan. Furthermore, certain CG structures, such as board size, managerial, and institutional ownership, were identified as having moderating effects on the CED-EM nexus. The research emphasized the importance of considering internal CG mechanisms to elucidate the link between CED and EM in emerging economies. The results contributed to a better understanding of the mixed results on the association between CED and earnings manipulations, particularly highlighting the potential impact of CG structures on this nexus. The study offered valuable insights for policymakers, board directors, and managers, providing context-specific recommendations to enhance corporate sustainability efforts in emerging economies.

Khandelwal et al. (2023) delved into the voluntary disclosure of environmental, social, and governance (ESG) information, a practice adopted by many companies globally and scrutinized the impact of ESG disclosure on firm performance. Utilizing a dataset encompassing companies that disclosed ESG parameters from the S&P BSE 500 index during the period spanning from 2014 to 2021, the study categorized the constituent securities into three factors—size, value, and disclosure—employing various sorting techniques to investigate the premiums generated by firms in each category. The empirical analysis, conducted through time series regressions alongside GRS tests, assessed the existence of factor premiums. The findings revealed the significant influence of factors such as size, value, disclosure, and a dummy variable representing the COVID-19 pandemic period in explaining portfolio returns. The study identified a negative ESG disclosure premium, indicating that firms with extensive disclosure practice tend to yield lower returns compared to those with limited disclosures.

Meiryani et al. (2023) scrutinized the influence of Corporate Social Responsibility (CSR) on the financial performance of manufacturing firms listed in the LQ45 Index. The study focused on financial metrics such as Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM). The study adopted a purposive sampling method, including all manufacturing companies within the LQ45 Index's population. Secondary data were collected from the Corporate Sustainability and Responsibility Index (CSRI) based on the Global Reporting Initiative (GRI) G4 standard for the years 2018 to 2020, as well as annual reports of manufacturing firms listed in the LQ45 Index. Employing a quantitative methodology, the study utilized descriptive statistical methods, conventional assumption tests, and simple linear regression analysis for data analysis. The findings indicated that CSR had a significant impact on ROA but did not significantly affect ROE and NPM in LQ45 manufacturing companies. These results were consistent with signalling theory, suggesting that CSR disclosure conveyed a favourable message to external stakeholders, influencing business earnings. CSR implementation was found to enhance a company's image in both commodity and capital markets, attracting investors and increasing consumer loyalty. As consumer loyalty and sales rose, profitability followed suit.

Onoh et al. (2023) studied the effect of sustainability reporting practices of environmental, social and economic on the firm value proxied by Tobin’s Q of listed oil and gas firms in Nigeria. The work relied mainly on secondary source of data and comprised of published annual reports. The analytical tools consist of descriptive and correlation matrix. The hypotheses were tested using multiple regression. The research answered that; environmental sustainability reporting has a positive significant effect on the value of listed oil and gas firm in Nigeria. Also, economic sustainability reporting has a negative significant effect on the value of listed oil and gas firm in Nigeria. The result also showed that firm characteristics proxied by sales growth and leverage exerts a negative significant effect, whereas, firm size exerts a positive significant effect on sustainability reporting and firm value of oil and gas companies in Nigeria.

Udomah and Emenyi (2023) delved into the impact of sustainability reporting on the financial performance of selected cement firms in Nigeria, employing an ex-post facto research design with a population comprising 10 cement firms spanning the years 2016-2020. The key findings indicated a negative and insignificant correlation between environmental reporting and the performance of cement companies in Nigeria. Conversely, economic reporting demonstrated a positive influence on the financial performance of these cement firms, while social reporting was associated with a decrease in their financial performance. The overall conclusion drawn was that sustainability reporting significantly affects the composite financial performance of healthcare companies in Nigeria. Notably, individual components of sustainability reporting did not exert a significant impact on the financial performance of cement firms. The study recommended that government policymakers enforce the compulsory inclusion of sustainability reports in the annual reports of cement companies, shifting from voluntary disclosure to mandatory reporting. Furthermore, it suggested that the management of manufacturing firms should prioritize the disclosure of economic reports, given their positive effect on performance.

Yan et al. (2023) examined the relationship between environmental disclosure and the cost of capitals, challenging theoretical expectations by exploring this dynamic within the unique context of China's new development stage, characterized by a delicate equilibrium between economic growth and environmental preservation. In the pursuit of this objective, the study constructed an environmental disclosure index and investigates its association with the costs of equity and debt capitals. In the analysis of pooled samples, the research revealed that environmental disclosure, on its own, does not significantly account for the variation in either cost. However, a nuanced understanding emerged when regulation intensity is taken into account. In the debt market, institutional investors exhibited a tendency to devalue environmental disclosure but express an appreciation for disclosure by firms with significant pollution. In contrast, within the stock market, retail investors generally responded positively to environmental disclosure. Notably, disclosure by traditionally recognized polluting firms in this market led to an increase in the cost of equity capital. This study highlighted the crucial heterogeneity between debt and equity markets and underscored the moderating role of regulation intensity in shaping the intricate relationship between environmental disclosure and the costs of capitals.

Hadro et al. (2022) verified whether non-financial disclosure in the construction industry (CI) responds to stakeholders' information needs and explored the most frequent topics disclosed in terms of the environmental, social and governance (ESG) pillars. This study focused on 18 purposively selected listed construction companies in Malaysian stock exchange. The research design adopted for the study was longitudinal and secondary data were used. These secondary data were obtained from the studied firms annual report and the stock exchange fact books. The data were analysed using ordinary least square regression analysis and the statistical software employed was SPSS version 20. The study used a bag-of-words method and latent Dirichlet allocation to match stakeholders' expectations with information disclosed by companies. Despite non-financial information in construction industry, the information disclosed by many construction companies does not meet their users' information needs. Construction industry, companies commonly focus on their sustainable products and health policy while omitting other topics of interest. Second, the study indicated the defects of simple disclosure analysis based on keywords and highlights the importance of context in information analysis. This study focused on the construction companies.

Haixia and Jianping, (2022) studied the relationship between environmental disclosure and financial performance focusing on the heavy polluting enterprises in China

from 2008 to 2019. Findings show that there is positive relationship between both mandatory environmental disclosure and voluntary environmental disclosure and financial performance; economic development positively relates to corporate financial performance, and it also strengthens the relationship between environmental disclosure and financial performance; information penetration positively relates to corporate financial performance, but it weakens the relationship between environmental disclosure and financial performance. This study is different from the present study because it focused on mandatory and non-mandatory environmental disclosures and also was conducted in China from 2008-2019.

Okafor et al. (2022) determined whether sustainability environmental disclosure affect financial performance of oil and gas companies in Nigeria. Ex post facto research design was adopted for the study. The population of this study covered the nine quoted oil and gas on the Nigerian Stock Exchange. Data were collected from annual accounts of these nine quoted oil and gas and the formulated hypotheses were tested using regression analysis with aid of E-view 9.0. The study found that environmental protection disclosure has positive but not significant effect on financial performance of oil and gas companies in Nigeria; Pollution control disclosure has no positive and significant effect on financial performance of oil and gas companies in Nigeria; Recycling disclosure has positive but not significantly affect financial performance of oil and gas companies in Nigeria; Restoration disclosure has no positive and significant effect on financial performance of oil and gas companies in Nigeria. Based on the findings, the study recommended among others that firm should reduce their spending on environmental protection or make it cost effective in other to increase firms' return on assets. This study though carried out in Nigeria is different from the present study because it focused on the oil and gas industry. This study did not consider the proxies of biodiversity disclosure and emission disclosure but used other measures such as recycling disclosure and pollution disclosure. The measure of performance used in this study was return on assets whereas the measure of performance used in this study was market capitalization.

Cheska et al. (2022) examined the impact of environmental accounting disclosure (EAD) on firm's profitability and firm value. The sample used in this study was the thirty (30) publicly-listed chemical, mining and oil companies under the Petrochemical Industry in the Philippines which are considered as pollutant contributors. Causal-explanatory research was utilized. Financial and environmental data from years covering 2015-2019 were gathered from secondary sources specifically, Annual Reports and Annual Corporate Governance Reports of these companies. Environmental Accounting Disclosure (EAD) was measured using EAD Index. Profitability was measured through the use of Return on Assets, Return on Equity, Net Profit Margin and Debt to Equity Ratio whereas firm value was measured by Tobin's Q. Furthermore, firm's size and age were used as moderating variables. This study concluded that EAD has no significant effect on either the profitability or firm value. Therefore, whether environmental information was disclosed, it would not affect the independent variables. However, when moderated by firm size, it gives a significant effect to the profitability. This implies that as the firm increases in size, EAD significantly impacts the profitability. This study is different from the current study because it focused on the petrochemical companies in Philippines and environmental disclosure was measured using a single environmental disclosure index. Also firms value was measured using Tobin's Q using firm size and firm age as control variables. Whereas the current study focused on the health care sector, three disclosure index were used and market capitalization was the measure of firm value.

Carnini et al. (2022) reviewed the influence of environmental, social, and governance (ESG) disclosure on firm performance, given the growing attention from stakeholders to a firm's ESG practices. Operating within the agency and signalling theory frameworks, this

research centred on the Italian landscape, where Legislative Decree 254/2016 transposed the European Directive into law, obligating the largest firms (those with over 500 employees) to provide comprehensive disclosures about their social and environmental activities starting in 2017. Employing panel regression analysis with a sample comprising the largest Italian listed companies and a time frame spanning a decade (from 2011 to 2020), this study uncovered a positive correlation between environmental, social, and governance disclosure and firm performance, measured through Earnings Before Interest and Taxes (EBIT). These findings offered valuable insights for stakeholders, decision-makers, policymakers, and academics, enhancing their understanding of the impact of ESG disclosure on firm performance, both as a holistic concept and individually across its constituent pillars. The results, which endorsed the positive association between ESG disclosure and firm performance, should serve as an incentive for managers to invest in corporate social responsibility (CSR) practices.

Ismail and Sakr (2022) studied the determinants and impacts of voluntary disclosures in Egypt during the crucial period of 2014 to 2020, marked by heightened attention to corporate governance. Focusing on sustainability and transparency factors encompassing social, environmental, and intellectual capital disclosures, the study employed an average voluntary disclosure index as the independent variable, while controlling for variables like Firm Size, Short-Term Debt Leverage (S.T.D), Long-Term Debt Leverage (L.T.D), and Industry. Firm performance was assessed through five dimensions: Return on Assets (ROA), Return on Sales (ROS), Market Capitalization (Market Cap), Earnings per Share (EPS), and Tobin's Q. The analysis, conducted using EViews version 10 with data from 46 companies, revealed significant associations between ROA, Market Cap, and Tobin's Q with average voluntary disclosure, whereas ROS and EPS showed insignificant relationships. These results underscored the positive influence of voluntary disclosure on specific facets of firm performance, incentivizing greater transparency in corporate practices.

Matope and Vaye, (2022) addressed the growing importance of voluntary non-financial disclosure in the context of global environmental concerns and ecosystem preservation. It aimed to assess the impact of such disclosure on selected listed companies. Examining 50 Swedish firms with mandatory non-financial disclosure requirements and 76 international companies practicing voluntary non-financial disclosure over a seven-year period from 2014 to 2020, the study found that energy management and corporate social responsibility had negative but insignificant effects on profitability. While diversity on the board showed a positive impact on profitability, this effect was also considered insignificant. The only variable with a significant positive impact on profitability was firm size. Overall, the study concluded that, in the past, disclosure of information regarding energy management, corporate social responsibility, and board diversity had no significant influence on the financial performance of manufacturing companies, regardless of the disclosure type, and voluntary non-financial disclosure did not exert a short-term impact on profitability for manufacturing firms.

Egbunike and Odumodu, (2021) determined the effect of environmental cost disclosure and performance of quoted foods and beverages firms in Nigeria. *Ex post facto* research design and content analysis was adapted for the study. Sample size of nine (9) Foods and Beverage firms were used from twelve (12) Foods and Beverage firms. Data for the study were collected from the audited accounts of the sampled Food and Beverage firms in Nigeria from 2010 to 2019. Formulated hypotheses were tested using multiple linear regression analysis with the aid of E-view 9.0. Environmental restoration cost and environmental pollution control cost has no significant effect on firm’s return on assets. Therefore, recommended that the implementation of greener technique, that is, environmental restoration

enhanced mark-up to protect the environment and increased firms' return on assets. This study focused only on environmental cost disclosure which is quantitative in Nigeria where the current study focused on both qualitative and qualitive environmental performance. Also this study focused on quoted food and beverages firms in Nigeria while using return on assets as a measure of performance.

Budiono and Dura, (2021) determined the application of environmental accounting and its impact on company profitability. In this study, the application of green accounting was measured by the Company Performance Rating Program in Environmental Management (PROPER) on the level of profitability with the ROA (Return on Assets) indicator. The research method used was quantitative research methods. The population consisted of 100 Kompas Index companies for 2 years in 2018- 2019 using the purposive sampling method, to obtain a sample of 24 companies that meets the criteria. Data were analyzed using simple regression. The results of this study indicate that the application of environmental accounting has a significant effect on the profitability of the Kompas100 Index company. This is study is different from the present study as it was done abroad and it covered a period of two years interval. Also, the measure of performance used in this study was return on assets while the present study used market capitalization.

Amosun and Akintoye, (2021) examined the impact of environmental accounting on the financial performance of companies in Nigeria. Based on the data extracted from the annual reports of two natural resources companies listed on the Nigerian stock exchange for five years (2015- 2019) and analyzed using ordinary least square (OLS) regression, this study finds that environmental accounting (environmental conservation cost) has a significant effect on the financial performance of natural resources companies. The authors concluded that proper reporting of environmental accounting could affect the financial performance of companies. This study is different from the current study because it focused on the natural resources firms and it covered 2015-2019 and the current study covered a more current period of 2017-2022.

Sumiati et al. (2021) gathered empirical evidence about the effect of environmental performance on profitability, either separately or concurrently. The population in this study consists of 107 companies listed on the Indonesia Stock Exchange in the mining sector and the goods industry sector consumption. Purposive sampling with criteria set to produce 77 observational data was used to sample as much as possible. In this study, data was gathered through documentation in the form of annual reports and company sustainability reports. Based on the findings of the research, it was concluded that, while the use of green accounting is voluntary, its impact on profitability is greater than that of environmental performance. The implications of this research explain how the company can improve environmental cost efficiency so that it can be used as the basis for the company's consideration before determining the expected level of profitability. This study was done in Indonesia and focused on the mining sector.

Emmanuel & Ifeanyichukwu (2021) examined green accounting disclosure and its effect on financial performance of listed manufacturing firms in Nigeria. Particularly, the study examined the effect of green accounting disclosure on ROA, ROE and share price of manufacturing firms in Nigeria. The ex-post facto research design was employed. Data from the annual reports of forty out of the sixty-six manufacturing companies listed in the Nigerian Stock Exchange as of 31st December 2019 for the period spanning 2010 – 2019 were used. The descriptive statistics and the panel regression methods were employed for the data analysis. The Arellano and Bond (1991) GMM estimator which controls for potential endogeneity problem was employed to ensure robustness of the parameter. The study

findings revealed that green accounting disclosure had a positive significant effect each on ROA and ROE. However, a negative effect subsists between green accounting disclosure and share price of manufacturing firms in Nigeria. The findings recommend that manufacturing firms are encouraged to increase the extent of their green accounting activities for ease of assessment by stakeholders for investment decision making. Furthermore, the government should strictly enforce green accounting disclosure practice by ensuring that firms that are going public should comply with this practice in line with the GRI benchmark so as to obviate the skewed spirit of free-market individualism.

Lusiana et al. (2021) comprehend the relationship between green accounting, Corporate Social Responsibility, Return on Asset, Return on Equity, and firm value. A total of 30 peer-reviewed articles have been reviewed and analysed, resulting in a finding in the previous article's literature. This study's finding shows that green accounting and CSR significantly affects financial performance, impacting firm value. In conclusion, the application of green accounting affects increasing profits. Another advantage of reducing insurance costs and capital costs can reduce total production costs, potentially increasing profits. A company with a good CSRD will certainly create a positive image and reputation among investors. It makes investors focus on the company's financial performance in considering investment decisions and corporate social activities. So that many investors interested in investing their capital to increase the company's profitability. High profitability reflects the company's ability to get high profits for shareholders. The greater the profit obtained, the greater its ability to pay its dividends, which impacts firm value.

Al-Waeli et al. (2021) examined the link between environmental disclosure of industrial companies in Iraq and their financial performance. An inductive approach was utilized, involving surveying, studying, comparing, and summarizing papers published in prominent accounting journals over the past nineteen years. The findings revealed that environmental disclosure in Iraq is weaker compared to developing countries in the analyzed studies. Moreover, the study found that financial performance and environmental disclosure had a more positive relationship (61.29%) than negative (38.71%).

Constantinescu et al. (2021) assessed the possibility of an association between ESG factors and firm value by developing two linear regression models. Data for the research were collected from the Thomson Reuters platform, focusing on the Top 100 Global Energy Leaders as identified by Thomson Reuters analysts. The research design adopted for the study was ex post facto and secondary data were used. These secondary data were obtained from the studied firms annual report and the stock exchange fact books. The data were analysed using robust regression analysis. The SPSS statistical program was used to apply the two research models to the collected data. The findings revealed an association between ESG factors disclosure and firm value, suggesting that the nature of the connection (positive or negative) could motivate companies to incorporate non-financial information, specifically ESG factors, into their reporting to attract new capital.

Lu et al. (2021) investigated the impact of carbon disclosure on financial performance using data from the 2011–2018 CDP report, focusing on Fortune 500 companies. The research design adopted for this study was ex post factor and secondary data were used. The data were derived from the annual financial statements of these companies and the stock exchange fact book. The method of data analysis employed was Ordinary Least Square regression analysis and the statistical package employed was SPSS version 20. The findings indicated that for carbon-intensive industries, carbon disclosure did not significantly improve financial performance in the current period. However, for carbon-non-intensive industries, carbon disclosure significantly contributed to the improvement of financial performance in the current period, and this positive impact extended into the next period.

Based on these empirical findings, they offered policy recommendations for constructing China's carbon disclosure system.

Miralles-Quirós and Redondo-Hernández, (2021) examined whether environmental, social, and governance (ESG) performance of top 45 commercial banks listed on Iraq stock markets provides relevant information and has a significant impact on stock prices over the 2002–2019 period. The research design adopted for this study was quantitative and secondary data were used. The data were derived from the annual financial statements of these companies and the stock exchange fact book. The method of data analysis employed was Ordinary Least Square regression analysis and the statistical package employed was STATA version 16. Their overall results revealed that stock market investors value the three ESG pillars in a different manner. They also observe that the value relevance of ESG performance was significantly higher for banks from common law countries and after the global financial crisis. They concluded that these findings could have several implications for internal and external stakeholders such as managers, investors, and market regulators.

Alessi et al. (2021) presented empirical evidence confirming the existence of a negative "greenium," indicating a risk premium associated with a firm's environmental performance, focusing on European individual stock returns. The research had defined a priced factor termed 'greenness and transparency,' which is derived from companies' greenhouse gas emissions and the quality of their environmental disclosures. The findings highlighted that the market prices the combination of environmental performance and environmental transparency. Using this factor, the study introduces a tool for evaluating portfolio exposure to risks associated with the low-carbon transition and proposes hedging strategies. The estimation suggested that, in a stressed scenario where greener and more transparent firms significantly outperform brown stocks, there could be global losses, including for European large banks, if investors fail to incorporate climate-transition risks into their pricing strategies. These outcomes underscored the necessity for introducing climate stress tests for systemically important financial institutions.

Alhassan et al. (2021) investigated how sustainability reporting impacts the performance of listed industrial goods companies in Nigeria over a ten-year period from 2011 to 2020. The study employed time-series and cross-sectional analyses of selected companies listed on the Nigerian Stock Exchange, utilizing an Ex-Post Facto research design. Data were collected from secondary sources, including fact books and financial statements of the companies. Statistical analysis was conducted using E-View 9.0 software, employing Pearson correlation coefficient and multiple regression analysis. The study's findings, at a 5% significance level, indicated that sustainability reporting, measured by economic, environmental, and social performance indices, had a positively significant effect on return on assets, return on equity, and earnings per share. The study suggests, among other recommendations, the adoption of a standardized Sustainability Index to exert pressure on firms to prioritize environmental considerations and take sustainable development issues more seriously.

Emeka-Nwokeji et al. (2021) examined the perceived usefulness of voluntary disclosures in annual reports among users in Nigeria when making investment decisions. In response to the limited knowledge in Nigeria's developing economy regarding the value of voluntary disclosures for user judgments and decisions, the study aimed to validate whether additional disclosures enhance user decision-making. To measure users' perceptions, a survey research design was employed, and data were collected from seven user groups, including Investors, Accounting Practitioners, Regulators, Financial analysts, Academics, Customers, and Students, within the South East Zone of Nigeria. The study utilized one-sample t-test analysis conducted with SPSS software to obtain empirical results. These results indicated

that voluntary disclosure of forward-looking information was reliable for detecting earnings management, while voluntary disclosure of sustainability, environmental, and social issues contributed to a better understanding of companies' long-term performance. As a recommendation stemming from these findings, the study suggested that companies in Nigeria should embrace voluntary disclosures to complement the conventional reporting model. Such a shift was deemed valuable as the new forward-looking reporting framework was found to create longer-term value and promote quality capital market decisions.

Gerged et al. (2021) investigated the correlation between corporate environmental disclosure (CED) and firm value (FV) in the Gulf Cooperation Council (GCC) countries, where CED has been experiencing growth from a previously low baseline. In contrast to prior research, largely concentrated on the developed world with a focus on single-country studies, this study took a multicountry approach, analyzing a sample of 500 firm-year observations using a 55-item unweighted environmental disclosure index. The results revealed a statistically significant and positive relationship between CED and firm value, measured by Tobin's Q (TBQ). This association remained robust when considering a weighted version of the disclosure index, individual countries, and environmental disclosure subindices. While there was some evidence of a positive link between CED and return on assets, it was comparatively weaker than the observed correlation with TBQ. Based on empirical and theoretical considerations, the study suggests that future research should give greater attention to market-based proxies when assessing the value relevance of CED, both in developed and developing countries. The study's implications suggest that managers and policymakers in GCC countries should embrace an optimistic stance towards the expansion of CED practices.

METHODOLOGY

3.1 Research design

This study adopted *ex-post facto* research design. Ex-post facto research, also known as after-the-fact research, is a type of study in which the examination begins after the event has occurred, without the intervention of the researcher. As such, there is no room for data manipulation.

3.2 Research population

The population of this study comprised of 13 industrial goods firms listed on the floor of the Nigerian Exchange Group (NGX) from 2014-2023. As of December 31st, 2023, the total number of listed industrial goods firms was thirteen. These companies were; Austin laz & co. plc, Berger paints plc, Beta glass plc, Bua cement plc, CAP plc, Cutix plc, Dangote cement plc, Grief Nig. Plc, Lafarge Africa plc, Notore chemicals plc, premier paints plc, Meyer plc and Tripple gee & co plc.

3.3 Sampling size determination and sampling procedure

The sample of the study of eleven (11) listed industrial goods firms was adopted. This was based on availability of information and annual reports over the period under consideration.

3.4 Sampling technique

The selection of the required sample involved the use of a purposive sampling technique. However, the availability of data served as the criterion for selection. This technique ensured the inclusion of industrial goods firms that were continuously listed by the

Nigeria Exchange Group (NGX), from 2014 to 2023. Furthermore, the selected industrial goods companies were required to have consistently submitted their financial statements and reports to the Nigeria Stock Exchange Group (NGX) throughout the period under study.

3.5 Sources and method of data collection

The data for the independent variable (environmental disclosure) and the dependent variable (firms' growth) were extracted from financial reports using contents analysis method and collated with the aid of Microsoft excel software. The panel data methodology was adopted because the study combined time series and cross-sectional data, that is eleven (11) cross-sectional observations for each year and ten-time series for each industrial goods firms regressor and explained variables, a total of one hundred and ten (110) pooled observations.

3.6 Method of data analysis

The study utilized E-views 10.0 software and employed multiple regression analysis to test the data. The dataset constitutes of both time series and cross-sectional observations. The decision-making process was based on a significance level of 5%. The null hypothesis (Ho) was accepted if the calculated probability value (P-value or Sig.) was greater than or equal to the stated 5% significance level (α). Conversely, the null hypothesis was rejected, and the alternative hypothesis (Ha) was accepted if the calculated p-value or sig was less than the 5% significance level. This approach was consistent with that of Akpan et al. (2024).

3.7 Model specification

The model for this study was adopted from the work of Samuel, Emenyi, and Uwah, (2024)., but modified to suit the hypotheses of this study. Hence, the econometric function of the model is given below:

ROI_{it} = *f* (biodiversity disclosure, emission disclosure, environmental restoration disclosure, environmental policy disclosure, Climate change risk disclosure)

Therefore;

$$\boldsymbol{ROI_{it} = \partial_0 + \partial_1 BioD_{it} + \partial_2 EMD_{it} + \partial_3 ERD_{it} + \partial_4 EPD_{it} + \partial_5 CCD_{it} + £_{it}}$$

Where;

ROI = Return on investment of listed industrial goods firms.

BioD = Biodiversity disclosure of listed industrial goods firms.

EMD = Emission disclosure of listed industrial goods firms.

ERD = Environmental restoration disclosure of listed industrial goods firms.

EPD = Environmental policy disclosure of listed industrial goods firms.

CCD = Climate change risk disclosure of listed industrial goods firms.

∂_0 = Model intercept

$\partial_{1.....}\partial_5$ = Coefficient to be estimated, where $\partial_1 \ldots\ldots \partial_5 > 0$

it = Cross section of listed industrial goods firms with time variant

$£_{it}$ = Stochastic error term.

3.8 Measurement/operationalization of variables

Table 3.1 below depicts the measurement of the variables defined in the model above;

Concept	Proxy	Measurement	Source	Apriori Expectation
Environmental disclosure practice *(Independent variable)*	Biodiversity disclosure (BioD)	Biodiversity disclosure index using researcher's compiled checklist.	Akpan et al. (2024).	+
	Emission disclosure (EMD)	Emission disclosure index using researcher's compiled checklist.	Akpan et al. (2024).	+
	Environmental restoration disclosure (ERD)	Environmental restoration disclosure index using researcher's compiled checklist	Akpan et al. (2024).	+
	Environmental policy disclosure (EPD)	Environmental policy disclosure index using researcher's compiled checklist	Akpan et al. (2024).	+
	Climate change risk disclosure (CCD)	Climate change risk disclosure index using researcher's compiled checklist	Akpan et al. (2024).	+
Firm's growth *(Dependent variable)*	Return on investment (ROI)	Profit before interest & tax ÷ Total of investment × 100%	Akpan et al. (2024).	+

Source: Researcher's compilation, (2025).

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

This section focused on the presentation of data, analysis of the data, testing of the research hypotheses alongside the discussion of findings based on the results.

4.1 Data presentation

The data for this study is presented in table 4.1 in Appendix I. The data comprise a panel data of one hundred and ten (110) pooled observations across eleven (11) listed industrial goods firms in Nigeria for ten (10)-year period (2014-2023). The data include the independent variable- Environmental disclosure practice proxied by biodiversity disclosure, emission disclosure, environmental restoration disclosure, environmental policy disclosure and Climate change risk disclosure and the dependent variable (firm's growth) proxied by return on investment (ROI).

4.2 Data analysis

Various statistical techniques were utilized in the analysis of data presented in table 4.1 (see Appendix II). These include descriptive statistics, regression assumption tests and panel multiple regression analysis. The results from the panel multiple regression analysis were used in the testing of the research hypotheses which had been stated in the first section of this work.

4.2.1 Descriptive statistics

This was conducted to understand the behaviour of the data using various statistics including mean, standard deviation, skewness, and kurtosis. The result for the descriptive statistics analysis is as presented in table 4.2 below;

Table 4.2 Descriptive statistics results

	ROI	BIOD	EMD	ERD	EPD	CCD
Mean	5.940797	65.60606	57.42424	62.72727	51.51515	49.39394
Median	6.020208	66.66667	50.00000	66.66667	50.00000	50.00000
Maximum	108.8969	83.33333	83.33333	83.33333	83.33333	83.33333
Minimum	-179.9173	16.66667	16.66667	33.33333	16.66667	16.66667
Std. Dev.	24.75435	15.02246	16.37145	15.29980	19.36103	15.46547
Skewness	-3.206425	-0.781146	0.065422	-0.302776	-0.248092	-0.135605
Kurtosis	32.96977	3.689826	2.242149	2.279441	2.135578	2.491858
Jarque-Bera	4305.179	13.36783	2.710848	4.060375	4.553197	1.520577
Probability	0.000000	0.001251	0.257838	0.131311	0.102633	0.467532
Sum	653.4877	7216.667	6316.667	6900.000	5666.667	5433.333
Sum Sq. Dev.	66792.78	24598.48	29214.65	25515.15	40858.59	26070.71
Observations	110	110	110	110	110	110

Source: Researcher's computation (2025) using E-views 10.0

The results in table 4.2 above indicates that the dependent variable- return on investment and the independent variables which were biodiversity disclosure, emission disclosure, environmental restoration disclosure, environmental policy disclosure and Climate change risk disclosure had mean scores of approximately 5.94%, 65.61%, 57.42%, 62.73%, 51.52% and 49.39% respectively. The median values obtained for return on investment, biodiversity disclosure, emission disclosure, environmental restoration disclosure, environmental policy disclosure and Climate change risk disclosure were approximately 6.02%, 66.67%, 50%, 66.67%, 50% and 50% respectively. These constitute the middle values for the distributions of these variables under the period covered in this study (2014-2023).

In terms of the level of variability and dispersion in the distribution of these variables, the standard deviations obtained for return on investment, biodiversity disclosure, emission disclosure, environmental restoration disclosure, environmental policy disclosure and Climate change risk disclosure were approximately 24.75, 15.02, 16.37, 15.29, 19.36 and 15.47 respectively. This indicates varying levels of variability in the distribution with oil spill cost indicating high variations over the years (2014-2023).

4.2.2 Model evaluation

Residual and coefficient diagnostics were however conducted to assess the suitability of the model as stated in the previous section. These include normality test, multicollinearity test, heteroscedasticity test and autocorrelation assessment.

4.2.2.1 Normality test

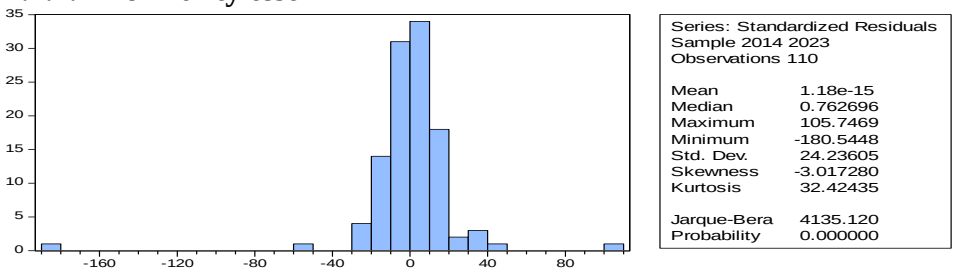

Fig. 4.1 Jarque-Bera Normality test results
Source: E-views 10.0 Output (2025)

The essence of a normality test is to determine if a dataset or sample follows a normal distribution. This is important because many statistical models assume normality, and deviations from normality can affect the validity of statistical inference. The Jarque-Bera test was employed in this case. As applied, if the p-value associated with the Jarque-Bera test is below a predetermined significance level ($p<0.05$), then we reject the null hypothesis and conclude that the data do not follow a normal distribution. With a p-value of 0.0000, there is sufficient evidence to conclude that the data were not normally distributed.

4.2.2.2 Multicollinearity test

In examining the association among the variables, the study employed the Spearman Rank Correlation Coefficient (correlation matrix), and the results are as presented in table 4.3 below**.**

Table 4.3 Correlation matrix

	ROI	BIOD	EMD	ERD	EPD	CCD
ROI	1.000000	0.134775	-0.094777	-0.181832	0.185613	0.116067
BIOD	0.134775	1.000000	0.201267	0.065006	0.042539	-0.082835
EMD	-0.094777	0.201267	1.000000	0.383340	0.043211	-0.289623
ERD	-0.181832	0.065006	0.383340	1.000000	-0.190133	-0.159080
EPD	0.185613	0.042539	0.043211	-0.190133	1.000000	0.195235
CCD	0.116067	-0.082835	-0.289623	-0.159080	0.195235	1.000000

Source: Researcher's computation (2025) using E-views 10.0

Table 4.3 above shows the association between two pairs of the variables of the study. Of particular interest is the relationship existing between each pair of the independent variables. As highlighted, no pair of the independent variables have correlation coefficient greater than 0.80 suggesting the absence of multicollinearity issues in the series.

4.2.2.3 Heteroscedasticity test

Table 4.4 Heteroscedasticity test

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	70.00294	55	0.0838
Pesaran scaled LM	0.381665		0.7027
Pesaran CD	-0.516171		0.6057

Source: E-views 10.0 Output (2025)

The statistics and probability value associated with the Breusch-Pagan LM test otherwise known as the Breusch-Pagan Godfrey test help determine whether there is evidence of heteroscedasticity in the regression model. A low p-value ($p<0.05$) suggests evidence

against the null hypothesis in favour of the alternate hypothesis which indicates the presence of heteroscedasticity in the regression model. With a p-value of 0.0838 (p>0.05), there is sufficient evidence to accept the null hypothesis, thus, conclude that the predictor variables in the regression model were homoscedastic.

4.2.2.4 Autocorrelation

Autocorrelation, also known as serial correlation, occurs when there is a correlation between the residual errors of a time series or panel data over time. Autocorrelation tests examine whether the residuals are independently distributed or if there is a systematic pattern of dependence. The Durbin-Watson statistic is commonly used to test for autocorrelation, with values close to 2 indicating no significant autocorrelation. The Durbin-Watson statistic as obtained from the panel regression results (see Appendix II) was utilized in this case. The Durbin-Watson statistic value of 2.1629 suggests that there is no evidence of autocorrelation in the residuals of the model.

4.3 Test of hypotheses

Each of the hypotheses in this study was tested based on the result obtained from the panel multiple regression analysis. The result that relates to these hypotheses is summarized in table 4.5 below;

Table 4.5 Panel multiple regression results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.52214	19.21836	4.543405	0.0052
BIOD	-0.014861	0.162484	-0.091461	0.9273
EMD	0.151350	0.168624	2.897559	0.0315
ERD	-0.312801	0.172996	-1.808136	0.0735
EPD	0.014511	0.130436	3.111251	0.0116
CCD	0.133135	0.165559	3.804152	0.0031

R-squared	0.641437	Mean dependent var	5.940797
Adjusted R-squared	0.614648	S.D. dependent var	24.75435
S.E. of regression	24.81181	Akaike info criterion	9.313518
Sum squared resid	64025.09	Schwarz criterion	9.460817
Log likelihood	-506.2435	Hannan-Quinn criter.	9.373263
F-statistic	19.99146	Durbin-Watson stat	2.162947
Prob(F-statistic)	0.00001		

Source: Researcher's computation (2025) using E-views 10.0

The multiple regression line is as written below:

ROI = 10.522141855 - 0.0148608996775*BIOD + 0.151350063681*EMD - 0.312800860095*ERD + 0.0145111434817*EPD + 0.133134929399*CCD + μ

The multiple regression line indicates that return on investment (ROI) is influenced by various environmental disclosure practices. Specifically, a 1% increase in biodiversity disclosure (BIOD) leads to a 0.0015% decrease in ROI, while a 1% increase in emission disclosure (EMD) results in a 0.1514% increase in ROI. Additionally, a 1% increase in environmental restoration disclosure (ERD) leads to a 0.3128% decrease in ROI, whereas a 1% increase in environmental policy disclosure (EPD) and Climate change risk disclosure (CCD) results in a 0.0145% and 0.1331% increase in ROI, respectively. The intercept value of 10.5221 suggests that when all environmental disclosure practice are zero, ROI would be approximately 10.52%.

4.3.1 Hypothesis one

Ho: Biodiversity disclosure has no significant relationship with return on investment of listed industrial goods firms in Nigeria.

H_1: Biodiversity disclosure has significant relationship with return on investment of listed industrial goods firms in Nigeria.

By way of testing whether the variations in return on investment of listed industrial goods firms on Nigeria caused by biodiversity disclosure is significant. The T test was carried out at .05 significance level and T_{cal} = 0.0914, compared with T_{tab} of 2.2009, given at $T_{0.05,11,}$ So far, the T_{cal} is less than T_{tab}. Hence, the null hypothesis which states that Biodiversity disclosure has no significant relationship with return on investment of listed industrial goods firms in Nigeria holds, thus accepted, and the alternative hypothesis rejected. The null hypothesis is further accepted given that its probability value (p-value = 0.9273) is greater than 0.05 (p>0.05).

4.3.2 Hypothesis two

Ho: No significant relationship exists between emission disclosure and return on investment of listed industrial goods firms in Nigeria.

H_1: Significant relationship exists between emission disclosure and return on investment of listed industrial goods firms in Nigeria.

Regarding emission disclosure, the T_{cal} of 2.8975, is greater than T_{tab} of 2.2009, given at $T_{0.05,11.}$ Hence, the null hypothesis which states that no significant relationship exists between emission disclosure and return on investment of listed industrial goods firms in Nigeria fails to hold, thus rejected, and the alternative hypothesis accepted. The null hypothesis is further rejected given that its probability value (p-value = 0.0315) is less than 0.05 (p<0.05).

4.3.3 Hypothesis three

Ho: There is no significant relationship between environmental restoration disclosure and return on investment of listed industrial goods firms in Nigeria.

H_1: There is significant relationship between environmental restoration disclosure and return on investment of listed industrial goods firms in Nigeria.

Regarding environmental restoration disclosure, the T_{cal} of 1.8081, is less than T_{tab} of 2.2009, given at $T_{0.05,11.}$ Hence, the null hypothesis which states that there is no significant relationship between environmental restoration disclosure and return on investment of listed industrial goods firms in Nigeria holds, thus accepted, and the alternative hypothesis rejected. The null hypothesis is further accepted given that its probability value (p-value = 0.0735) is greater than 0.05 (p<0.05).

4.3.4 Hypothesis four

Ho: Environmental policy disclosure has no significant relationship with return on investment of listed industrial goods firms in Nigeria.

H_1: Environmental policy disclosure has significant relationship with return on investment of listed industrial goods firms in Nigeria.

Regarding environmental policy disclosure, the T_{cal} of 3.1112 is greater than T_{tab} of 2.2009, given at $T_{0.05,11.}$ Hence, the null hypothesis which states that environmental policy disclosure has no significant relationship with return on investment of listed industrial goods firms in Nigeria fails to hold, thus rejected, and the alternative hypothesis accepted. The null hypothesis is further rejected given that its probability value (p-value = 0.0116) is less than 0.05 (p<0.05).

4.3.5 Hypothesis five

Ho: Climate change risk disclosure has no significant relationship with return on investment of listed industrial goods firms in Nigeria.

H_1: Climate change risk disclosure has significant relationship with return on investment of listed industrial goods firms in Nigeria.

For Climate change risk disclosure, the T_{cal} of 3.8042 is greater than T_{tab} of 2.2009, given at $T_{0.05,11.}$ Hence, the null hypothesis which states that Climate change risk disclosure has no significant relationship with return on investment of listed industrial goods firms in Nigeria fails to hold, thus rejected, and the alternative hypothesis accepted. The null hypothesis is further rejected given that its probability value (p-value = 0.0031) is less than 0.05 ($p<0.05$).

4.4 Discussion of findings

4.4.1 Biodiversity disclosure and return on investment

The finding that biodiversity disclosure has a non-significant negative relationship with return on investment (ROI) of listed industrial goods firms in Nigeria is intriguing. This result suggests that disclosing information about biodiversity conservation efforts does not have a substantial impact on the financial performance of these firms. The coefficient of -0.0148 indicates a negative relationship, but the p-value of 0.9273 reveals that this relationship is not statistically significant. This finding may imply that investors and stakeholders in Nigeria's industrial goods sector do not consider biodiversity disclosure as a crucial factor in their investment decisions. However, it is essential to note that biodiversity conservation is a critical aspect of environmental sustainability, and firms should continue to prioritize it, even if it does not directly impact their financial performance in the short term. Gündüz and Gündüz (2025) found that environmental accounting disclosures do not have a direct and statistically significant effect on financial performance in banks listed on Borsa Istanbul. Similarly, Cheska et al. (2022) concluded that environmental accounting disclosure has no significant effect on either profitability or firm value in petrochemical companies in the Philippines. Other studies, such as Elsayed (2023), have found a relationship between biodiversity disclosure and financial performance, but the current study's findings suggest that this relationship is not significant in the context of listed industrial goods firms in Nigeria.

4.4.2 Emission disclosure and return on investment

The finding that emission disclosure has a significant positive relationship with return on investment (ROI) of listed industrial goods firms in Nigeria is noteworthy. The coefficient of 0.1513 indicates that a unit increase in emission disclosure leads to a 0.1513 unit increase in ROI. The p-value of 0.0315 confirms that this relationship is statistically significant. This result suggests that firms that disclose information about their greenhouse gas emissions and efforts to reduce them tend to perform better financially. This finding may imply that investors and stakeholders in Nigeria's industrial goods sector view emission disclosure as a sign of a firm's commitment to environmental sustainability and responsible business practices, which can lead to improved financial performance. Ali et al. (2025) found a significantly positive relationship between ESG disclosure and firm profitability in Saudi-listed non-financial firms. Similarly, Samuel et al. (2024) found that carbon emissions disclosure has a significant positive relationship with market capitalization in listed consumer goods firms in Nigeria. Loan et al. (2024) also found that ESG policy disclosure has a positive effect on bank financial performance in Vietnamese commercial banks. These studies

suggest that disclosing emission information can have a positive impact on financial performance.

4.4.3 Environmental restoration disclosure and return on investment

The finding that environmental restoration disclosure has a non-significant negative relationship with return on investment (ROI) of listed industrial goods firms in Nigeria is unexpected. The coefficient of -0.3128 indicates a negative relationship, but the p-value of 0.0735 reveals that this relationship is not statistically significant at the 5% level. This result suggests that disclosing information about environmental restoration efforts does not have a substantial impact on the financial performance of these firms. However, the negative coefficient may imply that investors and stakeholders in Nigeria's industrial goods sector view environmental restoration disclosure as a cost center rather than a value-adding activity. Nevertheless, firms should continue to prioritize environmental restoration as it is essential for environmental sustainability and may have long-term benefits. Udomah and Emenyi (2023) found a negative and insignificant correlation between environmental reporting and the performance of cement companies in Nigeria. Okafor et al. (2022) also found that restoration disclosure has no positive and significant effect on financial performance of oil and gas companies in Nigeria. These studies suggest that environmental restoration disclosure may not have a significant impact on financial performance in certain contexts.

4.4.4 Environmental policy disclosure and return on investment

The finding that environmental policy disclosure has a significant positive relationship with return on investment (ROI) of listed industrial goods firms in Nigeria is encouraging. The coefficient of 0.0145 indicates that a unit increase in environmental policy disclosure leads to a 0.0145 unit increase in ROI. The p-value of 0.0116 confirms that this relationship is statistically significant. This result suggests that firms that disclose information about their environmental policies and procedures tend to perform better financially. This finding may imply that investors and stakeholders in Nigeria's industrial goods sector view environmental policy disclosure as a sign of a firm's commitment to environmental sustainability and responsible business practices, which can lead to improved financial performance. Muneer et al. (2025) found that environmental disclosure boosts profits and stakeholder trust in Islamic banks in Saudi Arabia. Carnini et al. (2022) also found a positive correlation between environmental, social, and governance disclosure and firm performance in Italian companies. These studies suggest that disclosing environmental policy information can have a positive impact on financial performance.

4.4.5 Climate change risk disclosure and return on investment

The finding that Climate change risk disclosure has a significant positive relationship with return on investment (ROI) of listed industrial goods firms in Nigeria is remarkable. The coefficient of 0.1331 indicates that a unit increase in Climate change risk disclosure leads to a 0.1331 unit increase in ROI. The p-value of 0.0031 confirms that this relationship is statistically significant. This result suggests that firms that disclose information about their Climate change risk mitigation and adaptation efforts tend to perform better financially. This finding may imply that investors and stakeholders in Nigeria's industrial goods sector view Climate change risk disclosure as a sign of a firm's commitment to environmental sustainability and responsible business practices, which can lead to improved financial performance. As Climate change risk becomes an increasingly pressing issue, firms that prioritize Climate change risk disclosure and mitigation efforts may enjoy a competitive advantage in the market. Matsumura et al. (2024) found that voluntary disclosure of carbon emissions is associated with higher firm value. Fizzah et al. (2023) also found that environmental disclosure affects firm financial performance directly and positively influences

it through green innovation in Chinese firms. These studies suggest that disclosing Climate change risk information can have a positive impact on financial performance.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This section summarizes the research findings, proffer suggestions and recommendations based on the research findings.

5.1 Summary of findings

This present study examined the relationship between environmental disclosure practice and firm's growth of industrial goods companies listed on the floor of the Nigerian Exchange Group (NGX). The independent variable (Environmental disclosure practices) was carefully proxied by biodiversity disclosure, emission disclosure, environmental restoration disclosure, environmental policy disclosure and Climate change risk disclosure while the dependent variable (firm's growth) was proxied by return on investment (ROI). This study centered on listed industrial goods firms on the floor of the Nigerian exchange group (NGX) for the period of 10 years, that is from 2014 to 2023. The study relied on a panel least squares regression analysis and the results of empirical findings were as follows.

1. Biodiversity disclosure has non-significant negative relationship {Coeff = -0.0148 (0.9273)} with return on investment of listed industrial goods firms in Nigeria.
2. Emission disclosure has a significant positive relationship {Coeff = 0.1513 (0.0315)} with return on investment of listed industrial goods firms in Nigeria.
3. Environmental restoration disclosure has non-significant negative relationship {Coeff = -0.3128 (0.0735)} with return on investment of listed industrial goods firms in Nigeria.
4. Environmental policy disclosure has a significant positive relationship {Coeff = 0.0145 (0.0116)} with return on investment of listed industrial goods firms in Nigeria.
5. Climate change risk disclosure has a significant positive relationship {Coeff = 0.1331 (0.0031)} with return on investment of listed industrial goods firms in Nigeria.

5.2 Conclusion

This study provides valuable insights into the relationship between environmental disclosure practice and firm's growth of industrial goods companies listed on the Nigerian Exchange Group. The findings suggest that certain aspects of environmental disclosure, such as emission disclosure, environmental policy disclosure, and Climate change risk disclosure, have a significant positive impact on return on investment (ROI). These results imply that industrial goods companies in Nigeria can benefit from prioritizing environmental sustainability and transparency in their operations and reporting practices.

The study's findings have important implications for policymakers, investors, and stakeholders. They highlight the need for industrial goods companies in Nigeria to adopt environmentally responsible practices and disclose relevant information to stakeholders. By doing so, companies will not only contribute to environmental sustainability but also enhance their financial performance and growth.

5.3 Recommendations

Based on the findings of the study, the following recommendations should be adhered to;

1. Industrial goods companies in Nigeria should prioritize accurate and comprehensive disclosure of their emission data. This can be achieved by adopting internationally recognized reporting frameworks and standards, such as the Greenhouse Gas Protocol (GHGP).
2. Industrial goods companies in Nigeria should develop and disclose clear environmental policies that outline their commitment to environmental sustainability.

These policies should be regularly reviewed and updated to reflect changing environmental regulations and best practices.

3. Industrial goods companies in Nigeria should prioritize Climate change risk disclosure by providing regular updates on their Climate change risk mitigation and adaptation strategies, as well as their progress towards achieving climate-related goals.
4. Industrial goods companies in Nigeria should prioritize biodiversity conservation and disclosure by adopting best practices in biodiversity reporting, such as the use of biodiversity indicators and metrics.
5. Companies should focus on disclosing meaningful and relevant information about their environmental restoration activities, rather than just reporting on these activities for compliance purposes.

5.4 Contributions to knowledge

1. This study provides empirical evidence on the relationship between environmental disclosure practice and firm growth in the context of industrial goods companies listed on the Nigerian Exchange Group. The findings contribute to the growing body of research on environmental disclosure and its impact on firm performance.
2. By examining multiple aspects of environmental disclosure, including biodiversity disclosure, emission disclosure, environmental restoration disclosure, environmental policy disclosure, and Climate change risk disclosure, this study provides a comprehensive understanding of the relationship between environmental disclosure practice and firm growth.
3. This study contributes to the literature on environmental disclosure in emerging economies, particularly in Nigeria. The findings highlight the importance of considering the unique institutional and regulatory context of Nigeria when examining the relationship between environmental disclosure practice and firm growth.
4. The study's findings provide insights into the relationship between specific environmental disclosure practices, such as emission disclosure, environmental policy disclosure, and Climate change risk disclosure, and firm growth. These findings can inform policy and practice in the industrial goods sector.
5. The study's use of panel least squares regression analysis contributes to the methodological literature on environmental disclosure and firm performance. The study demonstrates the importance of using robust statistical methods to examine the relationship between environmental disclosure practice and firm growth.

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APPENDICES

Appendix I Dataset Employed

Table 4.1 DATASET EMPLOYED

COMPANIES	YEARS	CAPITAL EMPLOYED	PAT	ROI	BioD	EMD	ERD	EPD	CCD
AUSTIN LAZ & CO. PLC	2014	2,379,017.00	7,563	0.3179	66.67	33.33	50.00	33.33	50.00
AUSTIN LAZ & CO. PLC	2015	2,041,290.00	-158,942	-7.7864	66.67	50.00	50.00	33.33	50.00
AUSTIN LAZ & CO. PLC	2016	1,867,988.00	-59,092	-3.1634	50.00	50.00	50.00	33.33	66.67
AUSTIN LAZ & CO. PLC	2017	1,760,775.00	-146,126	-8.2990	83.33	50.00	50.00	33.33	50.00
AUSTIN LAZ & CO. PLC	2018	1,658,701.00	-16,230	-0.9785	83.33	50.00	33.33	66.67	50.00
AUSTIN LAZ & CO. PLC	2019	1,699,093.00	-16,230	-0.9552	66.67	33.33	33.33	83.33	66.67
AUSTIN LAZ & CO. PLC	2020	1,533,853.00	-84,368	-5.5004	66.67	50.00	33.33	83.33	66.67
AUSTIN LAZ & CO. PLC	2021	1,391,714.00	-142,139	-10.2132	66.67	33.33	33.33	83.33	66.67
AUSTIN LAZ & CO. PLC	2022	1,347,146.00	63,742	4.7316	83.33	33.33	66.67	83.33	66.67
AUSTIN LAZ & CO. PLC	2023	1,302,578.00	-44,568	-3.4215	16.67	50.00	66.67	83.33	66.67
BERGER PAINTS PLC	2014	3,626,598.00	257,580	7.1025	33.33	33.33	33.33	66.67	83.33
BERGER PAINTS PLC	2015	3,640,145.00	148,808	4.0880	50.00	33.33	50.00	83.33	66.67
BERGER PAINTS PLC	2016	3,895,870.00	330,316	8.4786	50.00	33.33	50.00	50.00	66.67
BERGER PAINTS PLC	2017	4,102,265.00	224,007	5.4606	66.67	33.33	50.00	66.67	66.67
BERGER PAINTS PLC	2018	4,311,424.00	246,276	5.7122	33.33	33.33	50.00	50.00	66.67
BERGER PAINTS PLC	2019	4,535,299.00	320,509	7.0670	50.00	16.67	50.00	33.33	66.67
BERGER PAINTS PLC	2020	5,066,449.00	448,733	8.8570	16.67	33.33	66.67	33.33	50.00
BERGER PAINTS PLC	2021	4,971,872.00	146,028	2.9371	83.33	33.33	66.67	16.67	50.00
BERGER PAINTS PLC	2022	5,110,669.00	135,635	2.6540	66.67	33.33	66.67	33.33	33.33
BERGER PAINTS PLC	2023	5,528,528.00	208,670	3.7744	83.33	33.33	66.67	33.33	33.33
BETA GLASS PLC	2014	27,166,481.00	1,467,344	5.4013	33.33	33.33	66.67	50.00	33.33
BETA GLASS PLC	2015	26,928,387.00	2,390,223	8.8762	50.00	83.33	83.33	50.00	50.00
BETA GLASS PLC	2016	27,171,069.00	1,991,127	7.3281	66.67	83.33	83.33	83.33	50.00
BETA GLASS PLC	2017	33,184,130.00	3,799,393	11.4494	33.33	83.33	83.33	83.33	50.00
BETA GLASS PLC	2018	38,211,613.00	4,115,142	10.7693	83.33	83.33	83.33	83.33	50.00
BETA GLASS PLC	2019	46,079,629.00	5,052,805	10.9654	83.33	66.67	83.33	66.67	50.00
BETA GLASS PLC	2020	52,080,363.00	5,580,220	10.7146	83.33	66.67	83.33	66.67	50.00
BETA GLASS PLC	2021		3,466,670	6.4241	83.33	66.67	83.33	66.67	33.33

		53,963,634.00							
COMPANIES	**YEARS**	**CAPITAL EMPLOYED**	**PAT**	**ROI**	**BioD**	**EMD**	**ERD**	**EPD**	**CCD**
BETA GLASS PLC	2022	63,112,410.00	5,457,671	8.6475	83.33	66.67	83.33	33.33	33.33
BETA GLASS PLC	2023	75,944,552.00	4,685,414	6.1695	83.33	66.67	66.67	66.67	50.00
CAP PLC	2014	3,035,012.00	1,416,795	46.6817	83.33	66.67	66.67	50.00	66.67
CAP PLC	2015	3,080,881.00	1,662,425	53.9594	50.00	50.00	50.00	83.33	66.67
CAP PLC	2016	3,409,300.00	1,739,559	51.0239	50.00	50.00	50.00	50.00	66.67
CAP PLC	2017	4,915,999.00	1,603,357	32.6151	66.67	50.00	50.00	66.67	66.67
CAP PLC	2018	5,013,990.00	1,498,730	29.8910	66.67	50.00	50.00	66.67	66.67
CAP PLC	2019	6,311,246.00	2,029,343	32.1544	83.33	50.00	50.00	66.67	66.67
CAP PLC	2020	6,760,961.00	1,742,088	25.7669	50.00	50.00	50.00	50.00	83.33
CAP PLC	2021	8,526,076.00	1,223,124	14.3457	83.33	50.00	33.33	66.67	50.00
CAP PLC	2022	12,115,919.00	1,122,583	9.2654	50.00	50.00	33.33	66.67	50.00
CAP PLC	2023	13,406,204.00	2,376,208	17.7247	66.67	50.00	33.33	66.67	50.00
CUTIX PLC	2014	1,073,865.00	151,423	14.1007	66.67	50.00	33.33	66.67	50.00
CUTIX PLC	2015	1,744,670.00	207,116	11.8714	50.00	50.00	66.67	66.67	33.33
CUTIX PLC	2016	1,968,813.00	149,209	7.5786	66.67	50.00	66.67	66.67	50.00
CUTIX PLC	2017	1,891,720.00	190,551	10.0729	66.67	50.00	66.67	50.00	50.00
CUTIX PLC	2018	2,329,792.00	257,498	11.0524	66.67	50.00	66.67	33.33	33.33
CUTIX PLC	2019	2,836,262.00	440,295	15.5238	83.33	50.00	66.67	16.67	33.33
CUTIX PLC	2020	2,861,339.00	477,070	16.6730	83.33	50.00	50.00	16.67	33.33
CUTIX PLC	2021	3,627,990.00	393,052	10.8339	66.67	50.00	50.00	16.67	33.33
CUTIX PLC	2022	4,792,192.00	594,023	12.3956	83.33	50.00	66.67	33.33	16.67
CUTIX PLC	2023	5,116,100.00	786,307	15.3693	83.33	50.00	66.67	33.33	50.00
DANGOTE CEMENT PLC	2014	843,203,275.00	201,198,088	23.8612	83.33	50.00	66.67	33.33	66.67
DANGOTE CEMENT PLC	2015	984,720,531.00	159,501,493	16.1976	50.00	33.33	66.67	33.33	66.67
DANGOTE CEMENT PLC	2016	1,110,943,000.00	181,323,000	16.3215	83.33	33.33	66.67	66.67	83.33
DANGOTE CEMENT PLC	2017	1,527,908,000.00	186,624,000	12.2143	66.67	33.33	50.00	66.67	50.00
DANGOTE CEMENT PLC	2018	1,665,883,000.00	204,248,000	12.2606	83.33	66.67	50.00	66.67	33.33
DANGOTE CEMENT PLC	2019	1,694,463,000.00	390,325,000	23.0353	83.33	66.67	50.00	66.67	50.00
DANGOTE CEMENT PLC	2020	1,741,351,000.00	200,521,000	11.5153	83.33	66.67	50.00	66.67	50.00
DANGOTE CEMENT PLC	2021	2,022,451,000.00	276,068,000	13.6502	50.00	50.00	50.00	66.67	50.00

COMPANIES	YEARS	CAPITAL EMPLOYED	PAT	ROI	BioD	EMD	ERD	EPD	CCD
DANGOTE CEMENT PLC	2022	2,392,019,000.00	364,439,000	15.2356	50.00	50.00	66.67	66.67	50.00
DANGOTE CEMENT PLC	2023	2,615,655,000.00	382,311,000	14.6163	50.00	50.00	66.67	66.67	50.00
GREIF NIGERIA PLC	2014	682,415.00	30,626	4.4879	66.67	66.67	66.67	50.00	50.00
GREIF NIGERIA PLC	2015	663,773.00	43,443	6.5449	66.67	66.67	66.67	50.00	66.67
GREIF NIGERIA PLC	2016	715,714.00	24,624	3.4405	66.67	50.00	66.67	50.00	66.67
GREIF NIGERIA PLC	2017	722,490.00	27,106	3.7517	66.67	66.67	66.67	50.00	66.67
GREIF NIGERIA PLC	2018	786,663.00	49,424	6.2827	83.33	50.00	83.33	66.67	50.00
GREIF NIGERIA PLC	2019	475,731.00	-262,589	-55.1969	83.33	66.67	83.33	66.67	33.33
GREIF NIGERIA PLC	2020	173,542.00	-312,232	-179.9173	83.33	50.00	83.33	66.67	66.67
GREIF NIGERIA PLC	2021	321,852.00	350,487	108.8969	83.33	66.67	83.33	66.67	66.67
GREIF NIGERIA PLC	2022	240,468.00	-31,407	-13.0608	66.67	50.00	83.33	33.33	66.67
GREIF NIGERIA PLC	2023	324,120.00	3,456	1.0663	66.67	66.67	66.67	33.33	66.67
LAFARGE AFRICA PLC	2014	161,081,711.00	28,267,183	17.5484	66.67	50.00	66.67	33.33	50.00
LAFARGE AFRICA PLC	2015	305,878,828.00	34,385,275	11.2415	66.67	66.67	66.67	50.00	33.33
LAFARGE AFRICA PLC	2016	453,012,397.00	26,998,273	5.9597	66.67	66.67	66.67	50.00	16.67
LAFARGE AFRICA PLC	2017	502,490,905.00	16,898,781	3.3630	83.33	66.67	66.67	50.00	16.67
LAFARGE AFRICA PLC	2018	577,727,447.00	-34,601,409	-5.9892	66.67	50.00	50.00	50.00	33.33
LAFARGE AFRICA PLC	2019	540,736,663.00	-8,801,726	-1.6277	66.67	50.00	50.00	66.67	33.33
LAFARGE AFRICA PLC	2020	497,152,208.00	115,104,352	23.1527	66.67	83.33	50.00	66.67	33.33
LAFARGE AFRICA PLC	2021	507,213,975.00	30,842,138	6.0807	66.67	83.33	50.00	66.67	16.67
LAFARGE AFRICA PLC	2022	526,838,197.00	51,003,549	9.6811	66.67	66.67	33.33	66.67	16.67
LAFARGE AFRICA PLC	2023	600,711,473.00	53,647,456	8.9307	66.67	66.67	33.33	50.00	50.00
MEYER PLC	2014	2,627,558.00	47,068	1.7913	83.33	83.33	50.00	50.00	50.00
MEYER PLC	2015	2,462,578.00	-36,575	-1.4852	66.67	83.33	50.00	50.00	33.33
MEYER PLC	2016	2,328,333.00	52,860	2.2703	66.67	83.33	50.00	50.00	33.33
MEYER PLC	2017	2,205,516.00	-219,196	-9.9385	66.67	83.33	83.33	66.67	50.00
MEYER PLC	2018	1,917,776.00	-267,844	-13.9664	66.67	83.33	83.33	50.00	50.00
MEYER PLC	2019	1,865,942.00	319,187	17.1059	66.67	83.33	83.33	50.00	33.33
MEYER PLC	2020	3,746,990.00	-13,598	-0.3629	66.67	83.33	66.67	66.67	50.00
MEYER PLC	2021	3,051,686.00	1,118,006	36.6357	83.33	83.33	83.33	50.00	50.00
MEYER PLC	2022		33,668	1.6640	50.00	66. 67	83.33	50.00	50.00

		2,023,325.00							
MEYER PLC	2023	1,938,585.00	393,613	20.3041	66.67	50.00	66.67	33.33	50.00
COMPANIES	**YEARS**	**CAPITAL EMPLOYED**	**PAT**	**ROI**	**BioD**	**EMD**	**ERD**	**EPD**	**CCD**
PREMIER PAINTS PLC	2014	285,772.00	-21,130	-7.3940	50.00	50.00	66.67	33.33	33.33
PREMIER PAINTS PLC	2015	288,982.00	8,091	2.7998	50.00	50.00	66.67	16.67	33.33
PREMIER PAINTS PLC	2016	341,289.00	-29,497	-8.6428	50.00	50.00	66.67	16.67	16.67
PREMIER PAINTS PLC	2017	320,042.00	-33,556	-10.4849	66.67	66.67	66.67	16.67	33.33
PREMIER PAINTS PLC	2018	248,085.00	-53,903	-21.7276	66.67	83.33	83.33	16.67	50.00
PREMIER PAINTS PLC	2019	262,172.00	-69,136	-26.3705	50.00	50.00	83.33	16.67	50.00
PREMIER PAINTS PLC	2020	238,498.00	-16,545	-6.9372	50.00	50.00	83.33	33.33	50.00
PREMIER PAINTS PLC	2021	219,871.00	-30,634	-13.9327	66.67	66.67	83.33	66.67	50.00
PREMIER PAINTS PLC	2022	266,453.00	3,530	1.3248	66.67	66.67	66.67	66.67	33.33
PREMIER PAINTS PLC	2023	354,756.00	2,711	0.7642	66.67	83.33	66.67	50.00	33.33
TRIPLE GEE AND COMPANY PLC	2014	355,635.00	18,831	5.2950	66.67	66.67	66.67	33.33	66.67
TRIPLE GEE AND COMPANY PLC	2015	1,750,530.00	15,494	0.8851	66.67	66.67	66.67	33.33	66.67
TRIPLE GEE AND COMPANY PLC	2016	1,805,146.00	40,759	2.2579	66.67	83.33	66.67	33.33	66.67
TRIPLE GEE AND COMPANY PLC	2017	1,927,994.00	27,663	1.4348	66.67	83.33	66.67	16.67	66.67
TRIPLE GEE AND COMPANY PLC	2018	1,878,076.00	10,239	0.5452	83.33	66.67	66.67	16.67	50.00
TRIPLE GEE AND COMPANY PLC	2019	1,765,165.00	23,450	1.3285	50.00	66.67	83.33	16.67	33.33
TRIPLE GEE AND COMPANY PLC	2020	1,745,958.00	27,613	1.5815	50.00	66.67	83.33	50.00	33.33
TRIPLE GEE AND COMPANY PLC	2021	1,868,549.00	37,652	2.0150	50.00	50.00	83.33	50.00	33.33
TRIPLE GEE AND COMPANY PLC	2022	2,726,530.00	85,880	3.1498	66.67	66.67	66.67	50.00	50.00
TRIPLE GEE AND COMPANY PLC	2023	4,346,113.00	66,244	1.5242	50.00	83.33	66.67	66.67	33.33

Source: Annual reports of listed industrial goods firms in Nigeria (2014-2023)