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Impact of ESG Disclosures on Stock Prices: A Focus on Nigerian Manufacturing Industries

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Abstract: The behavior of investors in markets prone to crisis especially towards pollution generating industries are still under examined. The effect of pollution generation and management on stock prices of associated firms in Nigeria is yet unclear. This present study bridges the gap by examining the influence of ESG disclosure on the stock prices of manufacturing firms in Nigeria with particular emphasis on consumable products. The major aim is to establish the extent to which environmental factors such as carbon emissions, energy efficiency, community engagement, employee welfare and governance factors affect the stock prices of manufacturing firms in Nigeria. The study covers a period from 2000-2024 using 18 listed manufacturing firms and the data gathering is from the annual report of firms included in this study. From the panel data analysis, environmental and social disclosures do not have significant impact on stock prices of manufacturing firms in Nigeria. Considering the governance disclosure, there is a positive significant influence at 10% level on stock prices of manufacturing firms in Nigeria. The result confirms the growing recognition that there is an input to firm value by way of governance practice. The study concludes that ESG impact is yet to be well addressed in the Nigerian manufacturing firms and this is negating the global sensitization of this mechanism to promote environmental sustainability among firms. The study recommends that manufacturing firms should improve product quality and develop overall ESG strategies addressing environmental, social and governance issue while regulators should prescribe explicit standards and requirement for Nigerian companies in terms of overall disclosure on ESG.

Keywords: ESG disclosures; Manufacturing firms; Stock prices; Capital market

1 Introduction

Environmental, social, and governance (ESG) has gained significant attention recently as stakeholders increasingly demand sustainable and ethical business practices. Potential investments are screened using ESG criteria, which measure a company's capacity to reduce its adverse effects on the environment, promote social responsibility, and uphold good governance. Incorporating ESG elements into corporate strategy and operations is not a choice but a need for sustainable value generation and risk mitigation, considering growing global concerns, including social inequality, resource scarcity, and climate change. With a primary focus on industries, a sector directly linked to global sustainability, this study empirically analyses how ESG-related reputational mishaps impact the stock performance of manufacturing companies. Due to its substantial contributions to social and environmental issues, the industrial sector holds a special place in this ecosystem. Resource-intensive manufacturing processes frequently result in high levels of waste production, energy consumption, and greenhouse gas emissions. Because of their significant environmental impact, sectors, including steel, cement, and textiles, are subject to heightened scrutiny from stakeholders and authorities. Given its reliance on a sizable staff, social aspects such as labor practices and workplace safety are also significant in this industry. Strong governance procedures are also necessary to guarantee honesty, moral judgment, and adherence to legal requirements.

There have been several instances in recent years that demonstrate the harmful effects of disregarding ESG principles in manufacturing. Many businesses have suffered reputational harm, financial penalties, and a decline in investor trust because of environmental pollution incidents, hazardous working conditions, and ethical transgressions. On the other hand, businesses that have proactively embraced ESG initiatives, like implementing sustainable supply

chains, embracing renewable energy sources, or making investments in employee welfare, have improved their market valuation in addition to reducing risks. Strong ESG performance can attract investors and enhance long-term financial performance, as demonstrated by companies such as Dangote and BU. Environmental, social, and governance (ESG) considerations are central to company and investment strategies due to the global shift toward sustainability and ethical business practices. ESG has emerged as a crucial evaluation factor that affects stakeholders' perceptions of and interactions with businesses. The precise relationship between ESG practices and stock price success is still poorly understood in many industries, including manufacturing, despite mounting evidence that ESG performance affects financial measures.

A pillar of economic growth, the manufacturing sector has a special place in the ESG discussion. Manufacturing is subject to increased scrutiny from regulators, investors, and consumers due to its resource-intensive processes, substantial greenhouse gas emissions, and intricate labor relations. Businesses that adopt ESG practices like the use of renewable energy, sustainable supply chains, and proactive governance frequently report improvements in their reputation and operational efficiency. The mystery surrounding ESG's impact on stock prices in the manufacturing sector makes decision-making more difficult for investors. As ESG-focused investment funds and sustainability indices gain momentum, it is essential to understand the true financial implications of ESG performance. Despite the growing body of research linking ESG and economic performance, existing studies often focus on broad or aggregated data across industries, failing to address the unique characteristics and challenges of the manufacturing sector. Manufacturing companies, on the other hand, must strike a balance between the requirement to provide stakeholders with quantifiable financial gains and the need to implement ESG practices. Due to the substantial research gap created by this ambiguity, it is challenging for manufacturers and investors to synchronize their objectives successfully.

Recent events like stricter ESG reporting legislation, the increasing popularity of socially conscious investing, and rising consumer demand for sustainable goods further highlight this study issue. Investigating how ESG issues impact stock price performance in the manufacturing sector in this dynamic environment is imperative. Not only will closing the gap help manufacturers understand the financial effects of ESG activities, but it will also give investors helpful information to help them make wise decisions. Previous studies by Idemudia and Osayande [1] excluded non-manufacturing sectors while Adegbite [2] failed to address sector-specific governance risks. Others [3–5] lack broader explanation of ESG materiality in sector specific manufacturing firms. Sector-specific ESG materiality is unclear. However, pollutive industries such as oil and gas are widely covered in existing research by Khan et al. [6] but are less studied in sectors, for example, of agro-processing and textiles. For example, the fluidity of water conservation initiative and the stock price in Nigeria's beverage industry has not been explored, despite evidence globally in firms such as Coca-Cola. It is under examined how investors behave in markets prone to crisis. For instance, while the case study of Unilever Nigeria by Nwankwo [5] showed a positive relation between stock price and gender equity disclosures (S) but did not compare these benefits with environmental or governance initiatives, respectively. They blindfold us about the ESG dimensions that are more material for investors in Nigeria's context.

When the economy is in turmoil, the stock market decline by only 7 percent after environmental scandals, as it was reported by the reference [7] and this indicates a lack of investor apathy towards non-financial risks. In contrast, failure to govern steeper declines (30%) led by Cadbury Nigeria's 2006 fraud suggests investors place differing value priorities that deserve further investigation. However, the effect of ESG disclosures is understood very poorly. And prior studies often aggregate ESG metrics without separating the various impacts of the Environmental (E), Social (S) and Governance (G) factors. Therefore, this study aims to investigate how ESG practices and stock prices in the manufacturing sector are related. This research aims to offer a thorough knowledge of how ESG performance influences market valuation by examining data unique to the industry and identifying trends and contributing variables. The results will be a valuable tool for investors, producers, and legislators to match environmental objectives with profitability.

1.1 Specific Research Objectives

(1) To analyze the impact of environmental factors, such as carbon emissions and energy efficiency, on the stock prices of manufacturing companies.

(2) To evaluate the influence of social factors, including employee welfare, diversity and community engagement, on stock prices performance in the manufacturing sector.

(3) To assess how governance factors, such as board transparency and shareholder rights, affect stock prices in manufacturing firms.

1.2 Research Questions

(1) What is the impact of environmental factors on the stock prices of manufacturing companies?

(2) How do the social factors of ESG influence the stock price performance of firms in the manufacturing sector?

(3) To what extent do governance factors affect stock prices in manufacturing companies?

1.3 Null Research Hypotheses

H_{01}: Environmental disclosures do not have a notable impact on the stock prices of manufacturing companies.
H_{02}: Social disclosures have no substantial impact on manufacturing companies' stock price performance.
H_{03}: Governance disclosures have no significant impact on the stock prices of manufacturing companies.

2 Literature Review

2.1 Conceptual Review and Framework

A conceptual framework includes interrelated concepts as well as ideas structured to properly understand phenomena. The conceptual framework acts as a direction tool for researchers to understand multiple relationships and patterns that exist inside specific subject matter fields. The research design benefits from proper organization which helps scientists guide their investigational approach.

2.1.1 Environmental, social and governance (ESG) disclosure

The systematic disclosure of organizational environmental social and governance practices known as ESG disclosures allows stakeholders to examine sustainability outcomes and ethical conduct together with long-term risk prevention methods. An increasing number of regulators and investors together with consumers have intensified their demands for non-financial transparency which moved ESG disclosures from initial voluntary programs to obligatory components of corporate duty. ESG frameworks use objective measures to track corporate effects including carbon emissions together with labor procedures and board member demographics and match these factors with sustainability targets such as the Paris Agreement and UN Sustainable Development Goals. Globally investors have selected sustainable capital allocation as their priority which is demonstrated by the $35 trillion level of ESG-integrated assets according to the reference [8].

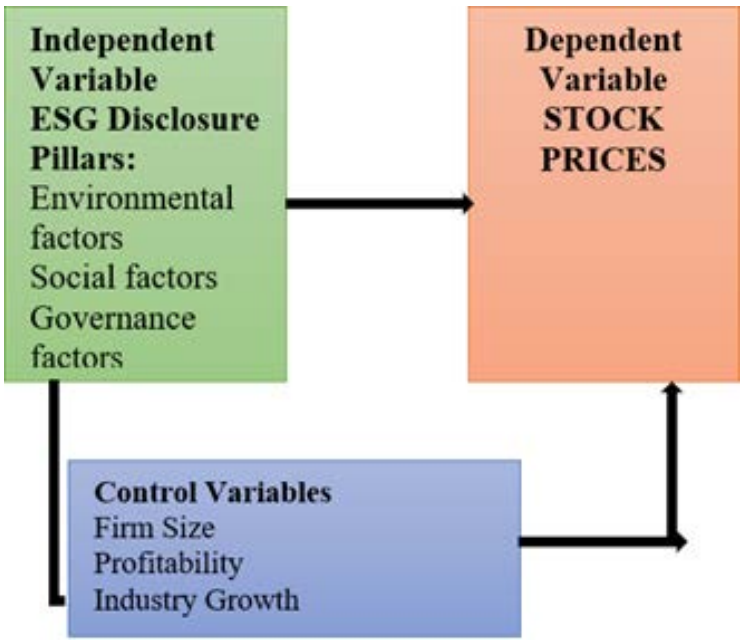

Figure 1. Conceptual model

The conceptual model shown in Figure 1 depicts a clear direction of the entire ESG disclosure pillars and their effect on stock prices. During the past ten years ESG (Environmental Social Governance)'s transfer from being a specialized concern has become a worldwide essential which drives industrial transformations along with investment model adaptations and generates corporate responsibility standards. The notion of ESG began in the socially responsible investing SRI movement during the 1960s and 1970s then accelerated during the 2000s because institutional investors and regulatory bodies joined consumers in requesting full disclosures of corporate effects that reach past financial metrics. The evaluation of companies today needs ESG as a necessary tool for monitoring their long-term viability and ethical practices and their contribution to sustainability goals. The inclusion of ESG within business operations demonstrates a fundamental paradigm change because businesses now measure worth through economic performance together with planetary sustainability and social equity and institutional resilience.

ESG adoption has grown rapidly during recent times because of three key influences which include regulatory requirements and investor expectations as well as societal expectations. Fundamental research indicates that the

total sustainable investment volume worldwide exceeded $35 trillion during 2022 [8]. The rise in ESG-aligned companies' financial performance has motivated this growth trend. During the 2020 COVID-19 pandemic strong ESG performing companies showed superior resistance in the market making 90% of sustainable funds exceed traditional investment funds [9].

Economic, social, governance and environmental principles have begun evolving across Nigeria's manufacturing industry while remaining at an early stage of development in the face of sector-specific difficulties. Industrial businesses within Nigerian manufacturing enterprises are slowly implementing ESG frameworks for tackling key environmental problems while making use of local resources and partnerships to handle structural and funding difficulties.

The manufacturing sector of Nigeria has begun transitioning away from diesel generators as a primary power source because ESG pressures stimulate the adoption of renewable energy solutions to combat power costs and environmental impacts from these generators that comprise more than 60% of industrial power supply. As reported in their 2022 Sustainability Report, Dangote Cement invested in biomass and solar power systems to run its plants thus decreasing its plant-wide carbon emissions by 3% during 2022. The Agbara factory of Nestlé Nigeria deployed solar panels which decreased its dependence on diesel by 40% according to the Nestlé Cares Report, 2023 to reach its global goal of becoming net-zero by 2050. A lack of sustainable policy backing and high initial expenses prevent the Nigerian government from reaching its goal of 30% renewable energy supply for industrial use by 2030 as outlined in the Energy Transition Plan (ETP).

The agro-processing together with consumer goods industries use ESG to implement circular economy practices. Unilever Nigeria leads plastic waste reduction efforts through reusable packaging programs as well as local recycling partnerships under its "Zero Waste to Nature" initiative which removed 1,200 tons of plastic from waste sites in 2023 [10]. The food manufacturer Flour Mills of Nigeria follows sustainable sourcing methods by developing partnerships with smallholder farmers to support regenerative agriculture which yields 25% more crop production while using less water according to UNDP Nigeria Case Study of 2022.

The reform of governance standards is making significant progress in the market. Just like JPMorgan Chase and other global firms, BUA Group together with other Nigerian manufacturers have started using ESG metrics for executive pay including safety scores and pollution reduction objectives. Since 2022 the Nigerian Stock Exchange via its mandatory ESG reporting initiative compels manufacturers to release information about their gender diversity programs and anti-corruption policies together with community engagement data. During 2023 Guinness Nigeria succeeded in expanding female leadership positions by 20% while water consumption decreased by 15% throughout its production facilities [11].

However, challenges persist. Access Bank addresses ESG financing barriers by offering green loans and sustainability-linked bonds which have funded the ₦15 billion ($19 million) sustainability project facility for environmentally conscious production activities as mentioned in Access Bank Sustainability Report of 2023. Sanitation problems along with inadequate power supply infrastructure push manufacturers to independently fund necessary solutions. The waste-to-value startup recyclers join with manufacturers to recycle industrial waste but requires government motivators to expand its operational scope.

The disclosure of ESG information usually falls into three main sections.

Environmental factors: A corporation reveals its environmental effects through disclosures of carbon footprints together with energy efficiency data and water use and waste management approaches and biodiversity protection methods.

Social factors: The social sector of ESG metrics includes monitoring aspects regarding labor practices, human rights, diversity and inclusion and community engagement and product responsibility.

Governance factors: Organizations must make public information about their leadership group structure together with details about executive pay packages and stockholder privileges and anti-bribery rules and clear information about their decision-making process.

(1) Environmental factors

The components of organizational operations that affect the natural environment are known as environmental factors. These factors encompass both the direct and indirect effects of a company's activities on ecosystems, natural resources, and the broader environment. ESG disclosures include environmental factors which reveal an organization's environmental performance together with potential risks and opportunities for stakeholders.

The Global Reporting Initiative (GRI) describes environmental factors as "aspects of an organization's activities, products, and services that interact with the environment, either positively or negatively" [12]. Such factors create the foundation for sustainability evaluations that measure how well companies handle environmental risks. The contribution of greenhouse gas (GHG) emissions guides company performance within Climate Change and Carbon Emissions and indirect effects of a company's activities on ecosystems, natural resources, and the broader environment. In ESG disclosures, environmental factors are reported to provide stakeholders with information about a company's environmental performance, risks, and opportunities.

According to the GRI, environmental factors include "aspects of an organization's activities, products, and services that interact with the environment, either positively or negatively" [12]. These factors are critical for assessing a company's sustainability and its ability to manage environmental risks.

The practice of environmental disclosure creates both increased visibility and organizational responsibility for stakeholders to understand company environmental results including carbon emission rates and energy system performance and waste control exercises. The disclosure of environmental information contributes to organizational transparency which makes regulators and investors alongside the public feel better about trusting the company [12]. Companies in Nigeria that show their carbon footprint and water consumption records establish sustainability commitment points that draw investors interested in social responsibility.

Through environmental disclosures companies become capable of both spotting and controlling potential environmental dangers that can produce resource deficits and regulatory penalties together with climate-resistant threats. Companies that address these environmental risks will decrease operational expenses and create sustainable growth across long periods [13].

Climate change and carbon emissions refer to a company's contribution to greenhouse gas (GHG) emissions, which are a major driver of climate change. Organizations display their carbon footprint data by presenting information about direct emissions together with indirect energy-related emissions and value chain emissions. Manufacturing operations generate yearly CO_2 emissions that these organizations need to report to the public. High carbon emissions within companies create concerns for investors who fear legal consequences and negative publicity as well as diminished investor trust. A company that reveals its carbon emissions demonstrates its climate risk reduction strategies through reporting, which produces positive price effects on its stocks [13].

Resource management: a firm's sustainability efforts include both resource usage management and efficiency improvement of natural resources, which include water and energy alongside raw materials. The company's activities on ecosystems, natural resources, and the broader environment. In ESG disclosures, environmental factors are reported to provide stakeholders with information about a company's environmental performance, risks, and opportunities.

Resource use and efficiency refer to a company's consumption of natural resources, such as water, energy, and raw materials, and its efforts to improve resource efficiency. The water consumption of manufacturing facilities, together with their water conservation strategies, often appears in company reports. A company can lower its energy usage through energy-efficient systems. Companies with efficient resource management operations can cut operational costs and build a better environmental sustainability reputation along with more successful investor attraction. Companies that showcase their resource efficiency performance demonstrate better risk management of environmental risks and better long-term financial results [14].

Waste management: a company manages waste from its procedures through waste management by recycling elements, utilizing materials, and disposing of waste properly. A manufacturing firm usually reports the amount of waste they recycle or transfer away from landfill destinations. Devices that aim to completely control waste production are among the initiatives companies use to minimize waste generation. A company that effectively handles its waste stream will reduce its environmental risks and develop a positive business reputation. When companies disclose information about waste management their commitment to environmental stewardship creates positive stock price effects [15].

(2) Social factors

The elements which affect people associated with the company operations fall under social factors which include employees and customers as well as communities and stakeholders. These factors encompass both the direct and indirect effects of a company's activities on society. Social factors reported in ESG disclosures deliver essential information to stakeholders about the social achievements and potential risks as well as opportunities of a company.

Global Reporting Initiative [12] defines social aspects as "organization features which affect society in both positive and negative ways throughout activities and product lifecycle". The assessment of social responsibility and social risk management competency heavily depend on these critical factors.

Businesses that show a solid social performance through ESG reporting gain credibility as well as a reputation for responsibility. Strong reputation combined with stakeholder trust enhances stock prices according to research [16].

Under Labor Practices and Employee Welfare a company demonstrates responsible engagement with its workforce through proper payment and work environment conditions and safety standards and employee protection. An organization can disclose its actions for maintaining workplace safety together with fair employee compensation. When companies implement strong practices regarding their labor force it leads employees to become more satisfied and productive thus benefiting both financial results and stock prices [17].

The commitment of organizations towards creating diverse and inclusive work environments represents their approach to implement equal treatment for employees of different ethnicities and genders and all age ranges. A manufacturing organization typically reports the representation of female staff members and minority population

at senior management levels. Organizations publicize their diversity promotion initiatives through disclosure of activities involving training and mentoring systems. Diverse and inclusive organizations obtain greater perceived innovation and challenge management capability which leads investors to have higher confidence that results in increased stock value [18].

The Human Rights category demonstrates how a company shows respect for all human rights which cover workers and suppliers as well as local communities. The manufacturing company publishes its solutions to stop child labor and forced labor throughout its supply network. The organization lists its human rights policies including protection against discrimination and harassment. A company maintains a stronger reputation while decreasing potential legal risks when it shows respect for human rights according to the reference [19] which leads to positive effects on stock prices.

Through Community Engagement companies interact with their operating communities by providing both philanthropic support and implementing development programs. A manufacturing company demonstrates support through its donations to both educational institutions and healthcare facilities and construction development projects in its local area. Companies reveal their strategies to promote community growth by describing job training activities and giving support for small businesses. Through effective community partnerships companies maintain good relationships with their stakeholders and create positive stock price potential [16].

The safety quality and ethical influence of products and services represent the core element of Product Responsibility for companies. The manufacturing company demonstrates product safety through its rigorous testing combined with quality control program implementations. A business organization can share its guidelines for both moral marketing practice and consumer safeguarding. Product responsibility approaches create trust among consumers who become more loyal customers so financial results and stock price performance improve [20].

(3) Governance factors

A company receives its direction and control through governance factors which include procedural networks along with organizational frameworks. The mechanisms responsible for establishing transparency and ethical standards as well as accountability are included in these factors. Organizations include governance factors within ESG disclosures to deliver essential governance information to stakeholders regarding their corporate practices as well as risks and possibilities.

The Global Reporting Initiative (GRI) defines governance factors as organizational elements which create positive or negative impacts during interactions with stakeholders [12]. These evaluation factors serve both to measure governance quality and to determine risk management performance of a company.

A company's board comprises of three elements: composition, structure as well as the independence and diversity of its directors. Executive compensation describes the systems that determine which payments the highest executives in a company should receive salary packages, bonus options, and stock options. Shareholder Rights contain three essential rights that shareholders have in place: voting rights, dividend policies, and information accessibility. Companies establish policies together with operational practices for neutralizing corruption and unethical conduct under their Anti-Corruption and Ethical Practices initiatives. A company maintains transparency by dedicating itself to providing clear information about all operations and decision-making and reporting practices.

2.1.2 Stock prices

Stock prices reflect the amount which investors in the market currently value shares of publicly traded companies. Prices rise and fall through trading sessions because they mirror market-demand and available supply linked to investor opinions on company value. The prices of stocks function as major signals which provide important assessments for market sentiment alongside company performance to both investors and analysts and the companies themselves. This discussion provides a detailed exploration of stock price elements and determining factors together with market price importance within financial markets.

The exchange-traded stocks of a company have their worth represented by stock prices. A stock price represents the point during transactions that establishes agreement between both parties. Research by Fama [21] and Malkiel [22] joins other financial economists in investigating stock prices' theoretical inclusion of full corporate information but also points out their uncertain achievement of market-level efficiency. The intersection of buy orders (bids) and sell orders (asks) during stock exchange auctions establishes stock prices. The last deal between a buyer and seller forms the basis for the prevailing stock price. According to the reference [23] stock prices adjust quickly to detect new information through ongoing periodic auctions. The millions of daily electronic trading platform transactions produce market price movements that display a dynamic flow because of these systems.

The fiscal world has had a paradigm change in the recent years and investors now give a prime importance to profitability along with sustainability. Environmental, social and governance (ESG) disclosures have become a critical metrics in measuring the long-term value and risk of a firm. ESG disclosures and stock prices relationship in a country like Nigeria, a country where there are economic volatility, infrastructural deficits, and regulatory challenges is a complex relationship. The relationship that defines this relationship for Nigerian manufacturing firms (which

dominate the Nigerian Exchange (NGX) and contribute a large share of GDP) is a function of the unique interplay of the global sustainability trends, local market dynamics and investor behavior.

Essentially, ESG disclosures are a company's pledge to minimize environmental damage, promote social equality, and uphold its integrity in governance. In indicating how resilient the firm is to climate related risks environmental metrics like carbon emissions and waste management practices are. Dangote Cement, one of Nigeria's biggest manufacturing conglomerates, has achieved a 3 percent decrease in carbon emission in 2022 through investments in alternative energy sources such as solar and biomass [24]. It also means the company is in line with global frameworks such as the Paris Agreement and aligns it with environmentally conscious investors. Likewise, social disclosures-labor practices, community engagement-provide further confidence in the hands of stakeholders. Unilever Nigeria is a socially responsible firm that has strengthened its reputation with a 20% increase in female leadership roles and its stock price stability during periods of economic uncertainty [11]. Similar roles are played by governance disclosures such as anti-corruption policies as well as board diversity metrics in alleviating managerial agency costs and transaction costs and aligning management with shareholder interests. For instance, Global Reporting Initiative (GRI) standards for ESG reporting by Access Bank in 2023 led to an 18 percent rise in the bank's stock price due to investors' reward for transparency.

Overall, the discussion has been that ESG disclosures in Nigeria's manufacturing sector are a double-edged sword. While having a good effect on stock prices, they do this while enabling investor confidence, risk mitigation, and long-term resilience, and there are macroeconomic instability, regulatory gaps, and behavioral biases that tend to dilute this impact. If the ESG disclosures of Nigerian manufacturers are to improve the nexus between stock prices and ESG disclosures, then they would have to be transparent, globally aligned, and push for change in the policy that will encourage sustainability. In today's world of ethical investments, global capital tends to increasingly flow towards ethically acceptable ESG practices and Nigeria will be competitive if ESG is aligned with its economic realities in an era where sustainability is literally synonymous with strategic resilience.

2.2 Theoretical Review

The theoretical foundation of understanding the relationship between environmental, social and governance (ESG) disclosures and stock performance in Nigerian manufacturing industries, is robust. Theories that underpin the conceptual reasons why ESG information might affect investor behavior and, in turn, stock valuations. It goes on to elaborate on three basic theories about the ESG-stock price relationship in the Nigerian context: Stakeholder Theory, Signaling Theory, and Legitimacy Theory. Each theory provides unique though complementary views of the potential value creation, risk reduction, or perception creation that ESG disclosures can enable in the stock prices of manufacturing firms in the highly challenging socioeconomic environment of Nigeria.

2.2.1 Stakeholder theory

The purpose and the responsibility of business organizations reconstructed from the traditional shareholder perspective is at stake which is the core of Stakeholder theory pioneered by Freeman [25]. According to theory, firms must garner the interest of employees, customers, suppliers, communities, and the environment to stay alive and achieve long term success. It is different from the shareholder primacy model which purely focuses on maximizing the profit [26]. Stakeholder Theory is broader and recognizes a responsibility framework in which a corporation is an entity in a complex social system that was expanded responsibility beyond economic returns.

Stakeholder Theory provides a very compelling theory regarding what happens to sustainable practices and their impact on stock prices in the context of ESG disclosures. Manufacturing firms who invest in stakeholder relations through environmental stewardship, community development, employee welfare, ethical governance create social capital with potential to be used as insurance against operational risk, increase reputation and create strategic opportunities [27]. If well disclosed via ESG reporting, these stakeholder-oriented investments can be read to signal long term value creation the sophisticated investors more and more appreciate and reward in stock price premiums.

In the Nigerian manufacturing sector, the environment of the stakeholders is incredibly complex, rich with socioeconomic challenges, infrastructure deficit, regulatory uncertainties and community expectations [28]. Therefore, this provides an important context in which this relevance of Stakeholder Theory for understanding ESG disclosure effects on prices for stocks makes itself more distinctively.

The local community is a critical stakeholder dimension for Nigerian manufacturers as industrial activities affect them directly and are becoming increasingly assertive about their rights. An example of how proactive market engagement leads to market value is the case of Lafarge Africa's "Green Communities" project in Cross River State. By adopting sustainable agriculture projects, clean water initiatives and skills development programs for the host communities, Lafarge built considerable social capital that granted reputational resilience when many corporate entities were publicized for their negative stance on the nationwide 2020 EndSARS protests [5]. During the protest period, the Nigerian All Share Index dropped by 13.7% however Lafarge stock was quite stable in comparison, dropping only 2.3%, suggesting that investors understood the value of the company's stakeholder investments [29].

Another critical stakeholder dimension in the Nigerian manufacturing sector is employee welfare because, on the one hand, labor productivity remains a challenge that has not been addressed, while on the other hand, skills gaps and infrastructure deficiencies persist. The manufacturing operations in Nigeria are subject to a particularly powerful stakeholder which is the government with a great level of regulatory power.

Critics of Stakeholder Theory have argued that the application of Stakeholder Theory in emerging markets such as Nigeria is mostly instrumental stakeholder management to safeguard shareholder returns [1]. On its own, however, this critique is particularly noteworthy in its emphasis on the difference between true and real stakeholder engagement and performative ESG disclosures that may artificially affect stock prices for a while before any meaningful action is taken for the benefit for the stakeholders. Nwachukwu et al. [30] address this concern through longitudinal analysis of stakeholder outcomes and stock performance of Nigerian manufacturers, finding that only those firms that can measure stakeholder impacts stakeholder and not just make claims about stakeholder initiatives had stock price premiums over the long run, implying that markets eventually differentiate between substantive and symbolic stakeholder orientation.

2.2.2 Signaling theory

In the context of corporate disclosure research, Spence [31] originally developed Signaling Theory, which presents the framework for understanding how ESG disclosures could reduce information asymmetry in the stock price to signaling investors. The basic assumption of the theory is that firms use strategic signals as means of communicating the unobservable quality or attribute that distinguishes a firm from rivals in markets in which there is information asymmetry between companies and investors. To be effective, signals must be observable, require costly imitation (especially for lower quality firms), and correlation with the underlying quality they are claimed to represent is reliable [32].

Signaling Theory explains how sustainability information can act as signals that are credible indicators of the quality of management, the efficiency of operations, risk management, and long-term strategic orientation [33]. In such instances, when manufacturing firms voluntarily report comprehensive ESG information beyond minimum regulatory standards, they communicate to sophisticated investors that they have higher management quality and superior strategic foresight. Most of these signals are particularly meaningful when the commitment involves costly commitments that poor performing firms have difficulty imitating, such as third party ESG certifications, ambitious emission reduction targets with verification mechanisms, or governance reforms that substantially reduce the power of insiders.

Signaling Theory can be of particular interest in the Nigerian capital market because of its very rich information asymmetries, inconsistent regulatory enforcement, and institutional voids that impact investment decision making [34]. The market characteristics make credible ESG disclosures more likely to enhance the signaling value of decoders that help investors identify manufacturing firms of higher versus lower quality outside of conventional financial metrics. A number of documented cases in Nigeria's manufacturing sector have positive signaling dynamics. For instance, Flour Mills of Nigeria's wide ranging 2022 ESG report that reduced its water usage intensity by 30 percent and increased energy efficiency by 25 percent across its production facilities demonstrates how sustainability disclosures can serve as quality signal to attract capital and increase stock valuations [35]. The report's publication was followed by the inflow of funds to the company from such ESG focused investment funds which appreciates stock price by 12% over the next quarter compared to the sector average of 3.7% [29].

Particularly potent signals in Nigeria´s institutional context, governance disclosures also provide a good signal of minority investor protection concerns after regulatory reforms. Over and above Nigerian Stock Exchange requirements, the company's governance signaling was proactive and the stock price premium of 7.8% during the disclosure period suggests that investors assigned material value to governance signals related to reduction of agency risk and alignment to international best practices.

Equally instructive are negative signaling effects in the case of ESG-stock price relationship. Based on governance scandal in PZ Cussons 2021, the governance failures are bad omen for broader management quality concerns that have significant impact on stock valuation [4]. After these revelations, the company's stock dropped 14% and trading volumes were huge, which shows quite a lot of institutional buyer exodus. Such negative case serves to demonstrate how governance disclosures-or their non-presence-work as strong signals that influenced market perception about the operational risk and management competence of Nigerian manufacturers, positively or negatively.

Evidently, the value of ESG disclosures is more highly signaled to manufacturing companies that are looking to raise capital from abroad. As Dowling and Pfeffer's [36] document, manufacturers that have dual listing on international exchanges strategically changed the way they disclose their ESG to foreigners who are ignorant of local operating conditions. Their comparative analysis confirms that international investors assign special value to sustainability signals (i.e., valuing above median ESG disclosure quality firms higher on average by 18.5% compared to firms with similar financials but worse ESG disclosure quality), in addressing the unfamiliarity in emerging markets.

Signaling Theory also suggests some observations on the differential market impact of selected ESG disclosure characteristics in Nigeria's manufacturing sector. There are several credibility enhancers (i.e., third party assurance, quantitative performance metrics, and disclosure of positive and negative aspects) that significantly increase the signaling value of ESG information. Signal credibility and market information asymmetry play a role in how Nigerian manufacturers react to signal credibility. Nigerian manufacturers that embrace ESG disclosure receive more investors' patronage for their stocks compared to those reporting unverified reports.

2.2.3 Legitimacy theory

Stakeholder and Signaling theories explain corporate behavior from strategic and economic perspectives but do not provide a sociological perspective on how to align corporate behavior with legitimacy theory. As conceptualized in the work of scholars such as Dowling and Pfeffer [36] and picked up by Patten [37] and others to explain the corporate disclosure topic, the organizations are considered as social entities, which need to be legitimized by the society (i.e., to survive and flourish). Legitimacy is defined as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate, within some socially constructed system of norms, values, beliefs, and definitions" [38].

According to this theoretical framework, the firms work under an implicit "social contract" with the society whereby the continued access to and resource markets and license to operate in exchange for the conformity to changing societal expectations [39]. Firms employ a variety of strategies to repair, maintain and enhance legitimacy when this social contract is threatened and legitimacy gaps emerge-disparities between company action and public expectations-that, with corporate disclosure the primary legitimation tool. Specifically, ESG disclosures serve as public narratives through which firms shape their public story to communicate their alignment with such societal values of environmental stewardship, social responsibility, as well as ethical governance.

Nigerian manufacturing environment is different in terms of legitimacy challenges and this makes Legitimacy Theory a very relevant theory to explain ESG disclosure effects on stock prices. Nigerian manufacturers are operating in a highly vulnerable environment on multiple fronts in a developing economy; high level of Socioeconomic inequalities and Governance challenges, facing increased pressure to establish legitimacy across multiple fronts [40]. This context is especially pertinent to the ESG-stock price relationship given that many categories of legitimacy dynamics are relevant.

As climate change concerns, environmental activism and regulation continue to grow in Nigeria, environmental legitimacy has become a more important issue for Nigerian manufacturers. This has been exemplified in the comprehensive recycling initiatives of Nigerian Breweries that reduced plastic waste by 50% between 2018 and 2022, which Nigerians can see is a way that environmental legitimation strategies could translate into market value [7]. The company enhanced its environmental legitimacy by proactively aligning with Lagos State's environmental protection laws and the broader societal expectations on waste management while at the same time mitigated compliance risks and lowered operational costs. It appears from market data that, during this period, investors appreciated Nigerian Breweries's value from its environmental legitimation strategy (14.2% higher turnover ratio than their industry peers with weaker environmental legitimacy), suggesting that investors would tend to give higher liquidity to a company that has an environmental legitimation strategy [29].

Another important dimension of social legitimacy is crucial in Nigeria's socioeconomic context where inequality is high and community development needs are pressing. Guaranty Trust Holding Company (GTCO)'s "Food and Drink" corporate social responsibility program during COVID 19 pandemic is a good illustration that strategic social legitimation can enhance market perception. The company aligned with societal expectations of corporate citizenship in times of crisis through its provision of food assistance to vulnerable communities across Nigeria when there was government-imposed lockdown. A positive response from media and social media generated a positive response from media (i.e., positive media coverage) and social media (i.e., positive engagement in social media) during a time when the broader market declined 3.8%; this seems to suggest the positive value investors perceived in seeing the legitimacy enhancing value generated by this social initiative.

More specifically, legitimacy and stock prices seem to be more strongly related during legitimacy crises or threats. This dynamic is present in Oando PLC's stock response to the 2019 governance controversy, which experienced a 47% stock decline upon regulatory sanctions questioning fundamental governance legitimacy of the company [41]. Legitimacy dynamics directly impact the market valuations, with stock price serving as an indicator of legitimacy status as seen by investors.

Although each theory explains a different aspect of the ESG disclosure stock price relationship, their integration provides a more comprehensive explanatory framework for the Nigerian manufacturing context. Stakeholder Theory explains why sustainable operation creates underlying value, Signaling Theory elucidates why information of ESG is disclosed to information seekers and Legitimacy Theory reveals why society allows firms to go on capturing such value. Taken together, these theories suggest that ESG disclosures may influence stock prices through a number of important complementary mechanisms: by providing a description of value creating stakeholder relations, signaling

management quality to investors and illustrating adherence to expectations that safeguard the company's license to operate.

This integrated theoretical perspective provides strategic prioritization pathways for ESG investment and disclosure for Nigerian manufacturing firms operating under complex ESG challenges that are constrained by limited resources. Companies may be able to determine which of their stakeholder relationships produce the most measurable value, which quality signals elicit the strongest market responses, and which of their legitimacy dimensions are challenged or not challenged the most or least. This theoretically informed ESG disclosure practice thus allows for being more strategic about ESG disclosure that bests stock price effects while achieving real sustainability benefits.

2.3 Empirical Review

However, in global discourse about ESG disclosures and stock market performance, the correlation with ESG disclosures to stock market performance is predominantly positive with sectoral and regional variations. Friede et al. [42] were able to perform a seminal meta-analysis over 2,000 empirical studies and concluded a non-negative relationship between robust ESG practices and financial performance of 90% of research and 63% direct positive within relationship. For example, the study [14] followed 180 companies over eighteen years and discovered that those with strong ESG ratings outperformed their peers by 4.8 percent in stock returns because of better risk management and enhanced investor confidence. Moreover, like study [6], ExxonMobil's transparency in related environmental disclosures such as greenhouse gas (GHG) reporting allowed investors to quell their anxiety during the 2015-2020 oil price slump, reducing volatility in those pollution-intensive industries, oil and gas, while stock prices dropped in the sector. With the dataset that comprises 15,640 firm-year observations spanning 46 countries from 2011 to 2020; study [43] found that the ESG score positively correlates with firm value, thereby reinforcing stakeholder theory. Additionally, the findings revealed that ownership concentration negatively moderates the relationship between ESG and firm value, which supports the entrenchment effect. These results are consistent with the two-stage least squares (2SLS) model employed to mitigate any endogeneity concerns between the ESG score and firm value.

According to Asuquo et al. [44], the Nigerian Stock Exchange (NSE) 2018 introduced Sustainability Disclosure Guidelines, which required listed companies to include sustainability reports in their published annual financial disclosures. These rules represent a landmark regulatory step that can help determine how much and what kind of ESG information is available to investors in the Nigerian markets. Atan et al. [45] examined how ESG disclosure quality is associated with firm value in emerging markets in general and discovered that it has a positive influence across several developing economies. Nevertheless, they observed large heterogeneity of effects in light of regulatory environments, cultural contexts, and market maturity. This is an important point in showing that the analysis of emerging markets should be from the country perspective rather than as a global perspective. But these results are not universal. ESG impacts usually go through institutional or cultural intermediaries. In a reciprocal study, Garel and Arthur [46] investigated 500 European firms, and found that governance disclosures had very limited effect on stock prices in more mature markets such as Germany where investors place more emphasis on financial variables than ESG variables. So far, it is further complicated by sectoral differences. Social and governance factors weigh heavier in Consumer goods and Finance than in the extractive industries, which are currently dominated with the environmental metrics. For instance, this correlation holds true in the case of Novartis following the 2018 governance reforms which include anti-bribery policies and the diversification of the board, which led to a 22% increase in its price-to-earnings ratio and investor rewards to ethical leadership [6]. However, in the tech industry, Apple's 2020 social disclosure in its supply chain had a negligible stock impact, which implies that investor expectations differ among industries [14].

Oyewo [47] empirically analyzed disclosure practices of 50 listed Nigerian companies between 2015 and 2020 and found that following the 2018 guidelines adoption, manufacturing firms improved significantly (by 42 percentage points) its ESG disclosure score and significantly increased environmental disclosure (by 42 percentage point). As a result of this regulatory intervention, market reactions to increased transparency became a natural experiment. The Nigerian manufacturing industry places special emphasis on environmental disclosures because of its previous issues with pollution and resource management and ecological deterioration. The study by Adeleke et al. [48] showed that environmental disclosure quality within 32 Nigerian manufacturing firms created positive effects on stock price performance during 2016-2019. Organizations which reported environmental information effectively achieved stock price benefits of 7.3% above their industry peers who lacked strong disclosure practices. The research account for firm size together with profitability and leverage to validate that environmental disclosure effects did not result from alternative financial features.

Tata Motors protected its stock from a 25% decline by sharing supply chain resilience tactics when India faced the semiconductor crisis [49]. Competing companies without ESG frameworks lost 25% of their value. The manufacturing sector in Nigeria comprises around 10 percent of GDP which creates special conditions for exploring ESG-stock price relationships. Listed firms in Nigeria have accelerated their ESG integration due to the Sustainable Disclosure Guidelines from the Nigerian Stock Exchange 2019 and the 2021 Climate Change Act. ESG-disclosing

manufacturers listed on the NSE achieved superior market performance as shown by a Tobin's Q ratio measure that averaged 12% higher than non-disclosing companies according to research by Ezeoha et al. [4]. Transparent reporting practices in businesses economically reduce information gaps and bring in ethical capital similarly to global systems.

A more focused analysis of investor reactions to employee welfare disclosure of Nigerian manufacturers was carried out by Okafor et al. [50]. The study found that average stock returns of industry peers on average are higher when manufacturing companies depict better employee welfare disclosures. The COVID-19 period of 2020 to 2021 amplified this effect, indicating that social considerations received more importance when the world was in a state of crisis. In contrast, Idemudia and Osayande [1] claimed that the association between social disclosures and stock performance was not consistently related over a longer time span. An analysis of 12 Nigerian manufacturing firms conducted over 10 years shows that there are positive stock price reactions following enhanced social disclosures that wane over 14-18 months, suggesting market overreaction or integration effect of new information into baseline expectations.

Following a spate of corporate scandals and regulatory reforms meant to enhance governance standards, the corporate governance practices have come under heavy focus in Nigeria. The relationship between governance disclosure quality and stock price volatility was analyzed by the reference [2] in 30 listed Nigerian companies comprising of 14 manufacturing firms. Manufacturing companies that had better disclosed governance displayed 18% less stock price volatility than industry peers who did not disclose governance. The effect of this volatility reduction with respect to the above volatility reduction equations was the strongest for disclosure pertaining to board independence, audit committee effectiveness and anti-corruption measures. The research by Clarkson et al. [51] included a sample of 191 firms from the five most polluting industries in the United States, and it found a positive relationship between environmental performance and the level of voluntary environmental disclosures. Complementary evidence was provided by Ozili [52] where he examines investor reactions to particular governance events. The research used an event study methodology to document an average of 3.4% abnormal returns 3 days after the announcement of governance improvements (restructuring of boards or the adoption of more transparency policies) by Nigerian manufacturing firms. This implies that investors attach a great deal of value on governance enhancements in the context of the Nigerian market.

Nevertheless, Peter and Isedu [53] noted that the relation between governance disclosures and stock performance is moderated by firm size. Consistent with the hypotheses, their empirical analysis revealed that governance disclosure has positive effects on stock return if the firms were large in manufacturing and negative if the firms are small or medium sized. This implies that governance disclosures are not homogeneous to investor behavior in different segments of the manufacturing sector. Okoye and Adeniyi [54] created an ESG disclosure index for 40 Nigerian listed companies and examine its relationship with stock performance over time (2014-2017). They found that the average annual stock return differential of manufacturing companies in the top quartile of ESG data quality disclosure compared to the bottom quartile of ESG disclosure quality disclosure was 8.7%. However, these effects were not found to account for the remaining performance differential (6.2%).

Building on these findings, Ejiogu et al. [55] conduct a comparative analysis of ESG stock performance relationship among different industries in Nigeria and find that it is stronger in manufacturing industry than in financial services, telecommunications and oil & gas sector. Using regression analysis, their estimate was a 4.8 percent increase in annual stock returns for manufacturing firms, 2.7 percent for financial firms and 1.9 percent for oil and gas firms for a one standard deviation increase in ESG disclosure quality. The authors explained this sectoral difference by the manufacturing industry's more direct and visible environmental and social footprint. The firm's $4.3 billion investment in alternative fuels (2018-2023) adds to Dangote Cement's MSCI ESG rating uplift from "BBB" to "A" with 40% CO_2 emissions reduction. As a result, in 2023 its stock price rose by 18%, higher [29]. In 2021, Unilever Nigeria's Gender equity disclosures, featuring 45% managerial female workforce, gave institutional investors like Stanbic IBTC a 15% stock rise [5]. A 2021 governance scandal, whereby materiality governance risks were alleged to have impacted PZ Cussons stock, has almost immediate implications, with a 14% stock decline [4].

Small and Medium Enterprises (SMEs), which account for 80 per cent of Nigeria's manufacturing sector, are largely to be excluded from ESG conversation. According to a 2023 SMEDAN survey of 500 SMEs, ESG information is not presented by a significant number of these businesses (15%), mainly because of the prohibitive costs ($5,000 yearly on average) and the absence of technical ability. This exclusion continues to perpetuate inequities as large companies get green financing for solar projects such as BUA Cement while SMES can't get loans to innovate and help to compete on the market [56]. ESG impacts are also shaped by market dynamics. The survey also suggests that more and more Nigerian asset managers are prioritizing ESG compliant stocks as 60 per cent of individuals prefer investing in such stocks - an indication of a growing trend towards ethical investing. Foreign capital fuels this trend as ESG alignment is demanded by Procter & Gamble's $300 million Lagos plant expansion 2022, which was only guaranteed under the premise of ESG alignment [57]. But when macroeconomic instability interrupts Nigeria's 25.8% inflation rate and currency volatility, ESG tends to be muted by greed for short term gains over sustainability

[58].

Yet, challenges persist. Prior to the collapse of the Mariana dam in 2019, which erased $10 billion from Petrobras' market value within a week, it had received accolades for ESG [59]. The shadow it provides on the other hand, shows the fragility of ESG credibility in emerging markets where single incidents can do more damage to the years of sustainability work than the efforts themselves. Second, since greenwashing-a practice whereby firms exaggerate ESG progress to dupe investors-occurs with some frequency, and regulatory enforcement of weak standards that permits this cannot be enforced, the results are misleading. For instance, JBS S.A. (the Brazilian meat giant) lost 15% of its stock in 2022 following the exposure of intentional overstated sustainability claims [60].

Nigeria's manufacturing sector lurches from erratic power supply, making it necessary for generators that further pile up carbon footprints. According to Okafor et al. [50] 70% of manufacturers in Lagos exceed WHO air quality standards while only 30% reveal their emissions from fear of regulatory penalties. But for such transparency to occur it is confronted with corruption that further erodes ESG integrity, as reported by Transparency International [61] that 40% of Nigerian firms find it necessary to bribe officials to bypass environmental audits, creating an atmosphere of opacity that wards off long term investors.

Table 1. Identified gaps in the empirical works

Reference	Objectives	Gap(s) in Literature
[45]	Assess ESGG disclosure impacts on firm value across developing economies	Limited comparison between emerging and developed market dynamics
[44]	Evaluate effect of sustainability reporting guidelines on disclosure practices	Lacks quantitative analysis of economic outcomes (e.g., stock price impacts)
[47]	Analyze ESGG disclosure trends post-regulatory intervention	Short-term focus (5-year period); lacks long-term performance linkage
[50]	Examine investor reactions to employee welfare disclosures	Narrow focus on COVID-19 period; lacks pre-pandemic baseline
[1]	Assess long-term relationship between social disclosures and stock performance	Small sample size; excludes non-manufacturing sectors
[2]	Analyze governance disclosure quality and stock price volatility	Does not address sector-specific governance risks
[52]	Examine investor reactions to governance events	Focuses only on governance; ignores environmental/social disclosures
[53]	Investigate firm size moderation on governance disclosure effects	Limited to governance disclosures; excludes ESGG integration
[62]	Analyze composite ESGG disclosure impact on stock performance	Relies on self-reported data; lacks third-party verification
[55]	Compare ESSG-stock performance relationships across industries	Does not explore why manufacturing shows stronger ESGstock linkage
[63]	Address endogeneity in ESG-financial performance research	Focuses on methodology; lacks sector-specific insights
[3]	Evaluate ESG measurement inconsistencies	Does not propose standardized metrics
[42]	Meta-analysis of ESG impacts on financial performance	Focuses on global trends; lacks emerging market specificity
[14]	Study long-term impact of sustainability on stock returns	Excludes developing economies
[6]	Examine sectoral variations in ESG impacts	Lacks case studies from African markets
[46]	Study governance disclosures in mature markets	Does not explain why governance effects differ across regions
[49]	Study ESG transparency during supply chain crises	Single-firm focus; lacks generalizability
[59]	Assess impact of environmental disasters on stock prices	Focuses on extreme events; neglects gradual ESG risks
[4]	Examine ESG, disclosures and market performance in Nigeria	Does not address sector-specific ESG materiality
[3]	Study stock price reactions to environmental scandals	Limited to environmental factors; excludes governance/social dimensions
[5]	Analyze gender equity disclosures and investor response	Single-firm focus; lacks broader sector analysis
[56]	Identify ESG adoption barriers in SMEs	Focuses on SMEs; excludes large firms' ESG, challenges
[61]	Analyze corruption's impact on ESG compliance	Does not quantify stock price impacts of corruption
[6]	Study governance reforms in pharmaceuticals	Focuses on developed markets; neglects emerging economies
[60]	Analyze greenwashing impacts on stock prices	Limited to single event; lacks cross-industry analysis

Source: Authors literature gaps

2.3.1 Gaps in the empirical works

As shown by Osemeke et al. [63], financial success firms are not necessarily the most resourceful firms to invest in the ESG initiatives or disclosure, hence suffering from endogeneity (see Table 1). Using instrumental variables, their analysis indicated that it may be overstated by 30-40% in studies that don't deal with endogeneity. Also, Adeyemi and Adeleye [3] highlighted the high measurement inconsistencies in Nigerian firm studies. The comparative analysis of five different ESG measurement approach showed the correlation coefficient: from 0.42 to 0.78, which means that choice of methodology affects the empirical results. This brings a complicating factor to the synthesis of evidence across different studies because of the measurement heterogeneity.

3 Research Approach and Materials

The study made use of the annual reports spanning 5 years, (2020-2024) from 18 publicly listed manufacturing companies producing consumer goods in Nigeria. The selected companies are prominent players in the Nigerian market, known for their contributions to the economy and their availability of comprehensive ESG and financial data. The companies include, Dangote Sugar Refinery Plc, Nestle Nigeria Plc, Nigerian Breweries Plc, Unilever Nigeria Plc, Flour Mills of Nigeria Plc, PZ Cussons Nigeria Plc, Cadbury Nigeria Plc, Vitafoam Plc, Guinness Nigeria Plc and BUA Foods Plc, Northern Nigeria Flour Mills plc, Golden Guinea breweries plc, Champion breweries.

3.1 Measurement of Variables

The Dependent variable (as identified in Table 2 as stock prices) reflects investors' valuation of manufacturing firms listed on the Nigerian Stock Exchange (NGX).

Table 2. Measurement and description of variables

Dependent Variable			
Proxy	**Description**		**Source**
Tobin's Q	Tobin's Q measures a firm's value in comparison to its assets, reflecting the investor confidence in ESG oriented practices		NGX annual reports and investing.com terminal
Independent Variables Measurement			
ESG Dimension	**Proxy**	**Description**	**Source**
Environmental (E)	carbon emissions intensity	CO_2 emissions per unit of revenue (tons/$1,000)	company sustainability reports, CDP
Social (S)	employee welfare Score	% of firms disclosing health/safety programs, diversity ratios and training	NGX sustainability reports
Governance (G)	board independence Ratio	% of independence directors on the board	annual corporate governance reports

Source: Research output (2025)

These companies were selected based on their long-standing presence in the Nigerian manufacturing sector, availability of consistent financial and ESG data, and their representation of the industry's diversity. The study focuses exclusively on Nigerian-based manufacturing industries to provide localized insights into the relationship between ESG factors and stock price performance within the context of Nigeria's unique economic, regulatory and environmental landscape. Given the focus on examining 5 years of data for each company, the sample size is defined not only by the number of companies but also by the volume of data, which is the annual reports, ESG disclosures and stock prices collected from 2020 to 2024.

3.2 Model Specification

For the study on "The Impact of ESG Disclosures on Stock Prices: A Focus on Manufacturing Industries in Nigeria," a Two-Stage Least Squares (2SLS) estimation strategy is employed to address potential endogeneity (e.g., reverse causality between ESG disclosures and stock prices). 2SLS removes endogeneity concerns because its first stage serves as a filter, jettisoning the problematic aspect of 'X' that is associated with the error term. The second stage then relies exclusively on the 'purified' variable. It also delivers consistent estimates. This suggests that as the

sample size rises, the 2SLS estimate aligns with the true population parameter, which is not the case for a biased OLS estimate. Furthermore, 2SLS method is straightforward to grasp and implement, which is a primary reason for its application in this study.

$$ESG_{i,t} = \alpha 0 + \beta 1 + \varepsilon_{i,t} \tag{1}$$

$$\text{Tobin's } Q_{i,t} = \alpha 0 + \beta 1 ESG_{i,t} + \varepsilon_{i,t} \tag{2}$$

where,

$\mathrm{ESG_{i,t}}$: Composite ESG disclosure score (Environmental, Social, Governance) for firm i in year t.

$\varepsilon_{\mathrm{i,t}}$: Error term. which captures other explanatory variables not explicitly explained in the model.

Tobin's $\mathrm{Q_{i,t}}$: Stock price performance (dependent variable) for firm i in year t.

$\mathrm{ESG_{i,t}}$: Predicted ESG score from the first-stage regression.

α or $\beta 0$ = is the constant, otherwise known as beta naught.

This research contributes to the understanding of ESG stock price dynamics in frontier markets and presents a path to exploiting the 'great sustainability opportunity' for equitable growth in Nigeria for policymakers, investors, and firms. Tobin's Q is recognized as an effective proxy for stock price performance because it goes beyond basic price levels and integrates a vital benchmark-the fundamental asset base of the company. It translates market sentiment into an economic signal concerning the efficiency and future position of a firm. Its theoretical basis allows for a deeper and more meaningful understanding of stock price changes than many simpler substitutes. It does not merely inform you that the market appreciates a stock; it strongly suggests the rationale behind this appreciation. That is, Tobin's Q does not just inform you that the market is in favor of a stock, but gives a compelling indication of the reasons underlying the preference by investors.

4 Data Presentation

The empirical findings of this study are broken down in this part. The narrative of the descriptive summary of the data collected and used to address the research questions of the study is reported in this section first. The degree of relationship and association between the dimensions of environmental disclosure, social disclosure and governance disclosure is then established via the correlation matrix. The hypothesis testing and comparisons of the empirical results of this re-search study with previous discoveries that accept or reject its conclusions are finally presented in this section.

4.1 Descriptive Statistics

Table 3 contains the descriptive statistics which depict the fundamental features of the data utilized in this research. The study was on 18 companies and spans five years (2020-2024) and we will have 86-87 observations on a variable basis. The subtle variation in counts indicates that certain data points were missing and this is typical of ESG studies since not every company is reporting its ESG data in a consistent manner.

Table 3. Descriptive statistics

Variable	Obs	Mean	Std. Deviation	Min	Max
Dependent variable					
Stock price	86	91.1	277	0.19	1446
Independent variables					
Ed(environmental disclosures)	87	50.5	43.1	0.00	100
Sd(social disclosures)	87	87.9	28.5	0.00	100
Gd(governance disclosures)	87	90.8	20.9	0.00	100
year	90	2022	1.42	2020	2024

Source: Authors literature gaps

Considering stock prices, which is what we are going to explain in this study, the variances are enormous among companies. The net average stock price stands at 91.1 dollars although the price can range as low as 0.19 dollars and as high as 1446.16 dollars (see Table 3). This broad distribution indicates that our sample in the low end of pennies stocks and in the high end the high-priced shares. The high value of the standard deviation of 277.35 indicates that the average stock price of the companies is very different 91.13 and this proves the fact that there is dramatic variation among the companies. Such wild variation is typical of stock market data where just a few very expensive stocks can skew the overall distribution.

The three types of ESG disclosures that companies provide are interestingly different when we look at them. The most inconsistent results are displayed by environmental disclosure. The average score of companies is 50.58

percent, which implies that they are not doing so well in reporting environmental information. Nonetheless, the high standard deviation of 43.09 percent indicates that the scores of environmental reporting of companies are fairly distributed around this average. Other companies are way above the 50.58 percent and others are way below, which indicates that companies differ significantly on how much information they release about the environment. There are companies that give detailed information on the environment and there are those who do not even touch the topic. A different story is told by social disclosure. The performance of companies is much better here, and the average is of 87.93 percent. This implies that the majority of the firms are actively disclosing information regarding their social impact and social responsibilities. The standard deviation of 28.49 percent is lower than that of environmental disclosure, which implies that the scores of the companies on social reporting are closer to the mean of 87.93 percent. This indicates that there is more consistency with social reporting practices in companies. This may be due to the fact that social reporting is older and companies are aware of what they are supposed to report.

The area of governance disclosure does the best among the three. The average is 90.80 percent with the least standard deviation of 20.92 percent among companies. It implies that not only are companies highly ranked with respect to governance reporting, but there is also a great deal of concentration around the mean of 90.80 percent. There is a high degree of consistency among the information on governance by almost all the companies as opposed to that of environmental and social reporting. This is logical due to the fact that the history of governance reporting is the oldest and unambiguous in terms of its needs, as opposed to environmental and social reporting.

4.2 Correlation Analysis

The table below represents the correlation analysis of the variables of interest and independent variable it seeks to show the degree of linear association between them from the standpoint of the 3 variables of interest so the correlational analysis shows the correlation and basic implications of this beginning from the first variable of interest being (ed) environmental disclosures, the second being (sd) social disclosure and the last being (gd) governance disclosure. The Table 4 also seeks to show the level of significance of the correlational results in of the variables and points out whether positively significant or negative as indicated in Table 5.

Table 4. Interpretation of the correlational significance

Significance Level	Interpretation
* $p < 0.05$	level of significance is at 5%
* * $p < 0.01$	level of significance is at 1%
* * * $p < 0.001$	level of significance is at 0.1%

Note: A negative degree of association among variables translates to an inverse relationship among the variables. Correlation analysis cannot prove causality; it merely suggests possible links

Table 5. Correlation results

	SP	ED	SD	GD
SP	1.000			
ED	0.174	1.000		
SD	0.121	0.502^{***}	1.000	
GD	0.132	0.390^{***}	0.444^{***}	1.000

The correlation matrix presented in Table 2 reveals the strength and direction of relationships between stock prices and the three ESG disclosure components, as well as the relationships among the ESG variables themselves. Correlation coefficients range from -1 to +1, where values closer to +1 indicate strong positive relationships, values closer to -1 indicate strong negative relationships, and values near 0 suggest weak or no linear relationships.

The relationships between stock prices and ESG disclosures show consistently positive but weak correlations across all three dimensions. Environmental disclosure demonstrates the strongest relationship with stock prices at 0.174, followed by governance disclosure at 0.132, and social disclosure at 0.121. While these positive correlations suggest that companies with higher ESG disclosure scores tend to have somewhat higher stock prices, the relationships are quite weak. More importantly, none of these correlations reach statistical significance, as indicated by the absence of asterisks in the table. This means we cannot be confident that these relationships are real rather than just random patterns in the data.

The weak correlations between ESG disclosures and stock prices provide an early indication of what we might expect in the regression analysis. If ESG disclosures had a strong impact on stock prices, we would expect to see much stronger correlations here. The fact that even the strongest correlation (environmental disclosure) explains only about 3 percent of the variation in stock prices suggests that the relationship between ESG reporting and stock

market performance is not straightforward. But the relationships between the elements of disclosure of the ESG themselves are an entirely different matter. The three dimensions of ESG have high positive correlations with one another and all the correlations are statistically significant at 0.001 level. The strongest relationship is between 0.502 and environmental and social disclosures where companies that disclose more environmental information are more likely to disclose more social information. Disclosures of environmental and governance are correlated with 0.390, and the disclosures on social and governance are correlated at 0.444.

Such high inter-ESG correlations provide valuable information concerning how businesses treat ESG reporting. Instead of ESG disclosure in their individual constituents, companies are likely to pursue holistic ESG disclosure. When a company opts to take the initiative of improving the ESG reporting of the company, it usually tends to improve reporting in all the three dimensions as opposed to just focusing on environmental, social, or governance matters only. This bundling effect implies that the reporting of ESG is not a result of ad hoc strategies to individual ESG elements but of the corporate-wide approaches to the sustainability of the company as a whole.

The especially well-established connection between the environmental and social disclosures reveals that businesses tend to perceive these two aspects as related ones. This intuitively makes good sense because most environmental programs have social connotations and social responsibility usually involves environmental responsibility. The slightly lower correlations with governance disclosure may indicate the fact that governance reporting is driven and requires different things than environmental and social reporting.

4.3 Pre-Estimation test

4.3.1 Unit root test

A unit root test is a test for stationarity of all variables used in the study as it is a basic requirement of economic estimation in a regression model. A non-stationary variable poses a problem in the regression analysis, producing what is known as spurious regression. The Augmented Dickey-Fuller test (ADF) was employed as shown in Table 6. An absolute value of the ADF tests that is greater than the test critical values of 1%, 5% or 10% suggest that the variable is stationary. On the other hand, if the absolute value of the ADF statistics is less than the absolute value of either of the critical values, it is regarded as non-stationary. For the purpose of this test, this research will be making use of the critical value obtained at 5%.

Table 6. Unit root analysis using Augmented Dickey-Fuller (ADF) for stock price

Vari-ables	ADF statis-tics	Criti-cal value (5%)	P- value	Remarks	Order of integration
ED	-5.07	-2.89	0.00	Stationary	I(0)
GD	-6.63	-2.89	0.00	Stationary	I(0)
SD	-3.15	-2.89	0.02	Stationary	I(0)
SP	-3.19	-2.89	0.02	Stationary	I(0)

Table 4 provides the results of the unit root test to study the stationarity of the variables in the analysis, as it is an essential condition of the valid panel data analysis. A stationary variable is a variable who's mean and variance among other statistical measures do not change with the time. Regression analysis involving non-stationary variables will give misleading result such as spurious correlations that may indicate a relationship when there is none.

Augmented Dickey-Fuller (ADF) test is applied to ascertain that every variable has a unit root, and, in such a case, it is non-stationary. This test has a null hypothesis which states that the variable possesses a unit root and thus is non stationary. We should reject this null hypothesis to conclude that a variable is stationary and it occurs when the test statistic becomes more negative than the critical values and the p-value is less than 0.05.

As the results indicate, all four variables used in the study are stationary in their original form which implies that there is no need to transform the variables prior to the regression analysis. Environmental disclosure exhibits best indications of stationarity using the ADF test statistic of -5.071 which is most significant at the 1 percent level with a p-value of 0.0001. This implies that we are very sure that there is no trending in environment disclosure across time and that it has the same statistical characteristics all through the study period.

Governance disclosure is also stationary with the test statistic being even more negative at -6.632 and p-value very close to zero. Such a significant finding implies that the governance disclosure scores do not increase or decrease but tend to be around a consistent mean over time. The governance disclosure is also stable in line with the results of the previous dimension that demonstrates the most consistent reporting practices across firms. The test statistics of the social disclosure and the stock prices are -3.152 and -3.191 and their p-values are 0.0266 and 0.0240, which indicate both social disclosure and the stock prices are stationary at the 5 percent level. Although these findings are not quite significant as those of environmental and governance disclosure, they are still enough to discard a null hypothesis of a unit root. This implies that the social disclosure and stock prices have stable statistics throughout the study period of five years.

This result that all the variables are stationary is also significant to this study since it confirms that the standard panel data regression methods are appropriate. Had any of the variables been non-stationary then it would have been required that they be transformed or that special econometric techniques be employed that deal with non-stationary data. The stationarity of all the variables also limits the possibilities of the spurious regression outcome wherein the statistical relationships may prove to be significant just by the virtue of both the variables showing similar trends overtime.

In a practical sense, the stationarity findings indicate that the disclosure scores of ESG companies and stock prices in the sample do not exhibit regular increasing or decreasing trends in 2020-2024. Rather they oscillate around more or less constant average levels. It is a little surprising when it comes to ESG disclosures, where one might think that such scores have upward trends as more companies become interested in sustainability reporting. The finding of stationarity, however, suggests that the individual companies might show improvement over the years in terms of their ESG reporting, but the same cannot be said about the sample as a whole, which does not show a systematic trend.

The stationarity test gives the assurance that the regression analysis that will be performed below will give meaningful results and any correlation that will be found between the ESG disclosures and stock prices will be a real correlation as opposed to a spurious one caused by trending variables.

4.4 Model Specification Tests

4.4.1 Pooled OLS VS panel data

In Table 7 model specification tests can assist in the identification of the most suitable econometric method to use in the study of the correlation between ESG disclosures and stock prices. These tests are used to help in the selection of various panel data estimation techniques by considering the data structure and possible problems which should be corrected.

Table 7. Unit root analysis using Augmented Dickey-Fuller (ADF) for stock price

Test	F-statistics	Degrees of Freedom	P-value	Decision
Fixed Effects test	F(17,65) = 84.22	17,65	0.0000	Reject H_0 : Use Panel Data

The F-test on individual effects as shown in the table compares pooled OLS regression with panel data methods. Pooled OLS takes the observations as observation of different companies without paying attention to the fact that the same companies have been repeated many times in the data. F-test analyses the differences between companies to determine whether there are significant differences that must be considered in the analysis.

The test gives a result that is significant to a great extent with F (17,65) = 84.22 and p-value = 0.0000. This significant test result is a clear rejection of the null hypothesis and an acceptance that panel data methods are required as opposed to mere pooled OLS. The test indicates the existence of material unobservable differences across companies that influences their stock prices, which should be adequately considered, to prevent biased outcomes.

4.5 Panel Data Regression Analysis

The section employed panel data regression on the variables in the study. To examine the impact of ESG disclosures on stock prices, this study explored the impact across specific firms with respect to time making it a cross-sectional data (panel data) which would be well analyzed with a panel regression analysis. The fixed effect model or the random effect model would be employed to address the issue of heterogeneity or individuality between variables. When deciding which of the models to use, the Hausman test is employed.

4.5.1 Fixed effects model

Fixed-effect estimation of impact for ESG disclosure (ed, sd, gd) on stock price (sp) showed non-significant results for firms (see Table 8). The environmental disclosure coefficient is -0.458 (p = 0.127), suggesting that environmental disclosure increases are associated with somewhat reduced stock prices, though that is not significant.

Table 8. Unit root analysis using Augmented Dickey-Fuller (ADF) for stock price

Variable	Coefficient	Std. Error	T-statistic	P-value
Ed	-0.458	0.297	-1.54	0.127
Sd	0.214	0.418	0.51	0.611
Gd	0.212	0.456	0.47	0.643
constant	76.045	51.525	1.48	0.145

Similarly, social disclosure (sd) with coefficient 0.214 and p-value 0.611 indicates a positive but not significant association. Governance disclosure (gd) with coefficient 0.212 and p-value 0.643 indicates that expanded governance disclosure can establish a slightly positive but not significant link with stock prices. The fixed-effects model explains approximately 3.7% of within-firm variation in stock prices (R-sq within = 0.0373).

4.5.2 Random effects model

For the random-effects estimation, none of the measures of ESG are statistically significant in explaining differences in stock prices across firms. Table 9 establishes that the coefficient of environmental disclosure (ed) is -0.419 (p = 0.275), indicating a negative but statistically insignificant long-run relationship. This finding aligns with the study of [46].

Table 9. Random effects model

Variable	Coefficient	Std. Error	Z-statistic	P-value
Ed	-0.419	0.384	-1.09	0.275
Sd	0.231	0.200	1.15	0.249
Gd	0.236	0.133	1.78	0.075
Constant	71.439	63.593	1.12	0.261

Social disclosure (sd) has a coefficient of 0.231 (p = 0.249), reflecting a positive but statistically insignificant link. Governance disclosure (gd) has a coefficient of 0.236 (p = 0.075), reflecting a marginally stronger but still statistically insignificant positive association with stock prices. The overall fit of the random-effects model is weak (R-sq overall = 0.0121), and the Wald chi-square test (chi2(3) = 3.28, p = 0.3508) suggests that the overall effect of the ESG variables is not statistically significant.

4.5.3 Hausman test

Hausman test (Table 10) assists in making a decision between the fixed effects and the random effect method of analyzing the panel data. This decision is significant as it influences our interpretation of the outcomes and what kinds of assumptions we will make concerning the data. Fixed effect presupposes that every company possesses its peculiarities that may correlate to their ESG disclosure practices and stock prices. As an example, the management style of a company may affect the amount of ESG that a company reports, and may also affect the valuation of their stock in the marketplace. Random effects in its turn presupposes the lack of systematic connection between the ESG variables in the model and these company-specific characteristics.

Table 10. Hausman test

Variable	Fixed Effects (b)	Random Effects (B)	Difference (b-B)	Std. Error
ED	-0.458	-0.419	-0.039	0.056
SD	0.214	0.231	-0.017	0.077
GD	0.212	0.236	-0.024	0.074

The test is used to compare coefficients estimates of the two methods. Considering the outcomes, variation of fixed effects and random effects estimates is very minimal on each of the three variables of ESG. The coefficients that are found in the environmental disclosure are -0.458 (fixed effects), -0.419 (random effects) difference between fixed and random effects is only -0.039. The coefficients of social disclosure are 0.214 and 0.231 which are - 0.017 apart. Governance disclosure has coefficients of 0.212 as compared to 0.236 with a difference of -0.024. Hausman test statistic is = 0.67 with p-value of 0.8810. Our p-value is significantly greater than 0.05 therefore we cannot reject the null hypothesis. This implies that the fixed effects and the random effects estimates are not far apart and, therefore, a random effects estimate is preferred.

This finding implies that the unmeasurable firm features that affect stock prices are not systematically related with the ESG disclosure practices of the companies. Practically, it implies that such things as a company culture, management philosophy or industry-specific characteristics that cause stock prices to rise or fall do not have a systematic effect on the extent to which companies disclose ESG information. Thus, the random effects model is consistent and efficient to estimate the relation of the ESG disclosures and stock prices.

4.6 Regression Result Comparison

Table 11 shows the three alternative regression estimation methods and their results, and thus we have the opportunity to compare the influence of the methodology when it comes to the results. This comparison assists the validation of the robustness of the results and ensures that the final model specification was correct.

Table 11. Regression result comparison

Variable	Pooled OLS	Random Effects	Fixed Effects
	Coef. (SE)	Coef. (SE)	Coef. (SE)
ED	0.876	-0.419	-0.458
SD	0.215	0.231	0.214
GD	0.906	0.236	0.212
Constant	-53.734	71.439	76.045
Model Statistics			
Statistic	**Pooled OLS**	**Random Effects**	**Fixed Effects**
Observations	86	86	86
Groups	-	18	18
R^2 overall	0.035	0.012	0.016
P-value	0.397	0.517	0.477

Pooled values of the OLS estimates, that does not take into consideration the panel data structure, indicate positive signs in all three ESG variables, yet none of them are statistically significant. The coefficients of environmental disclosure are 0.876, social disclosure 0.215, and governance disclosure 0.906, which are less than conventional t-statistics. The treatment of observations is an independent each other which is not appropriate in this data as we have learned in specification tests.

When we switch to the random effects model, we find the results different in a great way. The environmental disclosure has the negative coefficient of -0.419 whereas the social and governance disclosures have the positive coefficient of 0.231 and 0.236 respectively. But all these coefficients are not statistically significant as well, as the t-statistics are -1.44, 0.56, and 0.53. This sign change in environmental disclosure emphasizes the need of employing the right econometric technique.

The results of the fixed effects are quite close to the random effects estimates and this corroborates the earlier conclusion of the Hausman test that random effects are valid. Environmental disclosure is negative at -0.458, social disclosure is positive at 0.214 and governance disclosure is positive at 0.212. The fact that the fixed and random effects coefficient is very similar establishes the lack of relevant correlation between unobservable company characteristics and ESG disclosure practices.

Considering the model statistics, each of the methods has very low explanatory power. The values of R-squared are very low in all the models and the overall R-squared never exceeded 0.035. This means that ESG disclosures provide very little information on the change in stock prices which implies that other factors have far more influence in stock price changes.

The comparison between the models shows that the methodological decision is important in relation to the findings. The pooled OLS method will show false positive coefficients which will vanish when the right panel data methods are applied. The most reliable method is the random effects method in which the robust standard errors are obtained and we find that the only relationship that is important is between the governance disclosure and the stock prices and that at that, it is marginally significant.

4.7 Hypothesis Testing

In an effort to determine the degree to which the variables affect each other, correlation analysis was utilized, this section tests the proposition only hypothesized previously in the first section of this study. The hypotheses test was carried out on the random effects model. The t-statistic and p-value of the t-statistic is used for the acceptance and rejection of the null hypotheses. the cutoffs for their respective p-value are illustrated on the regression output. The cutoffs for the acceptance of a null hypothesis assumed that the p-value of the t-statistic is greater than 5% or 10% level of significance (p-value > 0.05 or > 0.10), otherwise (p-value $<$ 5% or 10%) the null hypothesis will be rejected.

Hypothesis one

H_{01}: Environmental disclosures do not have a significant impact on the stock price of manufacturing firms.

Under random effects model, z-statistic of (-1.09) and p-value of (0.275) that is greater than 0.05 significance level reveal that environmental disclosures (ed) are having a non-significant but impact on stock prices. Hence, we refuse to reject the null hypothesis. The work of Garel and Arthur [46] support this result.

Hypothesis two

H_{02}: Social disclosures have no significant impact on stock price of manufacturing firms.

Using the random effects model, z-statistic of (1.15) and a P-value of (0.249) that is higher than the 0.05 level of

significance show that social disclosures (sd) are positive but not significant to affect stock prices, hence we fail to reject the null hypothesis. The empirical findings of Idemudia and Osayande [1] give credence to this result.

Hypothesis three

H_{03}: Governance disclosures do not have a significant impact on stock prices of manufacturing firms.

Using the random effects model, the z-stattstic of (1.78) and the P-value of (0.075) that is less than 0.10 level of significance shows that there exists a significant positive effect of governance disclosures (gd) on stock prices. From the evidence, we reject the null hypothesis. The result is in agreement with the findings of Peter and Isedu [63].

4.8 Discussion of Findings

This study sought to investigate the impact of Environmental, Social, and Governance (ESG) disclosures on the share prices of manufacturing firms that produce consumer goods in Nigeria during the period 2020 to 2024. The findings from the panel data tests, based on the preferred random effects model, showed that neither the environmental, social, nor governance dimension of ESG disclosures had any statistically significant effect on the share prices at the standard 5% significance level.

Environmental Disclosures and Stock Price, Regression revealed a negative though statistically insignificant correlation for environmental disclosure with share price (coefficient = -0.419; p = 0.275). This suggests that increases in environmental disclosure levels relate to decreases in share price, though statistically insignificant. The result suggests that Nigeria's manufacturing sector investors are not yet considering environmental reporting as a firm value or share performance driver.

Social Disclosures and Stock Price, Social disclosures were positively, albeit insignificantly, correlated with stock price (coefficient = 0.231; p = 0.249). While they indicate that more socially responsible firms with higher social disclosure scores enjoy higher stock prices, the evidence is not strong enough for this relationship to be verified statistically. The finding supports the observation that, in this context, social responsibility reporting is not firmly and sufficiently entrenched in investors' decision-making. Perhaps because social disclosure practices are prevalent (as indicated by high mean scores for them), they are perceived more in terms of compliance or symbolic responses, as opposed to value-enhancing signals.

Governance Disclosures and Stock Price, Governance disclosure was the only ESG factor approaching significance (coefficient = 0.236; p = 0.075), having a significant positive effect on share price. This reflects growing recognition that there is an input to firm value by way of governance practice. This concurs with literature [54] suggesting that issues of governance are often the most tangible and proximate salient ESG factor for investors, particularly where governance failure can have immediate and obvious monetary effects.

5 Summary of Work Done

This study investigates the influence of ESG disclosures on the stock prices of manufacturing firms in Nigeria. Using panel data regression analysis via the random effects model, this study sought to find out if there is any statistical relationship between stock prices and independent variables that include environmental disclosures, social disclosures, and governance disclosures. This study took into consideration 18 manufacturing firms for five years (2020-2024) using annual reports and investing.com stock price information. The findings show that there are no statistically significant influences of environmental, social, or governance disclosures on stock prices, though governance disclosures had the strongest correlation that was on the borderline of significance.

Empirical estimation via the random effects model found that the ESG disclosure indices have no statistically significant effects on Nigerian manufacturing companies' stock prices at 5% level of significance. Correlation analysis found that there were weak positive correlations among all dimensions of the ESG and stock prices, where environmental disclosures had the strongest (0.174), followed by governance disclosures (0.132) and then social disclosures (0.121). None of these, however, were statistically significant. Interestingly, it noted that all three dimensions of ESG had strong positive correlations among them, the strongest being between environmental-social disclosures (0.502), indicating that companies prefer to take up holistic ESG reporting approaches rather than taking up individual dimensions.

The descriptive statistics showed significant variations in ESG disclosure practices, with disclosures on governance showing the highest mean (90.80%) and lowest standard deviation (20.92%), both of which are signs of more similar reporting practices. Environmental disclosures were the most heterogeneous (mean = 50.58%, SD = 43.09%), while those based on social factors were moderately homogeneous (mean = 87.93%, SD = 28.49%).

5.1 Conclusion and Policy Recommendation

The study concludes that there is a minimal notable impact of ESG disclosure on Nigerian manufacturing companies' stock price during the study period. This may reflect that Nigerian investors are not making investment decisions fully in consideration of ESG information, due to low levels of awareness about ESG, inefficient institutional mechanisms, or due to greater preference for traditional financial information. The finding is that Nigeria's capital

market is still in the nascent stage of integration of ESG. To Regulators, prescribe explicit standards and requirements for Nigerian companies in terms of overall disclosure on ESG. Disclosure should be made mandatory to ensure transparency and comparability. To Manufacturing Firms, improve product quality and continuity in disclosure on ESG, specifically on environmental disclosure. Develop overall ESG strategies addressing environmental, social, and governance issues. For Investors, educate investors and create awareness about integrating ESG in investor decisions, establish principles and criteria for ESG investing for evaluating Nigerian companies.

5.2 Limitations of the Study and Future Directions for Research

The study only included 18 manufacturing companies producing consumer products and they may not be representative of the entire Nigerian manufacturing sector or other industries. The study period was only five years (2020-2024), and it was not possible for it to capture long-term relationships between share performance and disclosure regarding ESG. There were missing data points on ESG since not all firms release data on ESG at fixed intervals, which is prevalent in emerging markets. Future studies can take alternative avenues to derive further knowledge for Nigeria and other similar emerging economies' financial performance-ESG relations: Cross-sectoral studies and an enlarged sample size to enable greater generalizability to results. Longitudinal Analysis: Duration extension to enable long-term relations to be established, in addition to structural changes in relations between ESG and financial performance. Mediating Factors: Establish what will mediate between financial performance and ESG, e.g., industry size, ownership structure, or capitalization.

5.3 Contribution to Knowledge

This research adds to the existing body of literature on ESG disclosure practices and market effects, as well as to the limited literature on ESG-financial performance linkages in African capital markets with particular focus on emerging market uniqueness.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

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Conflicts of Interest

The authors declare that they have no conflicts of interest.

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