GREEN ACCOUNTING PRACTICES AND FIRM VALUE: EVIDENCE FROM SELECTED LISTED COMPANIES ON THE NIGERIAN EXCHANGE GROUP (NGX)

A Thesis

Submitted to the Master of Finance in Sustainable Finance Study Program at the Faculty of Economics and Business in partial fulfillment of the requirements for the degree of

Master of Finance (M.Fin.)

by:

Fahad Babangida

03222420008

UNIVERSITAS ISLAM INTERNASIONAL INDONESIA
DEPOK
2026

GREEN ACCOUNTING PRACTICES AND FIRM VALUE: EVIDENCE FROM SELECTED LISTED COMPANIES ON THE NIGERIAN EXCHANGE GROUP (NGX)

A Thesis

Submitted to the Master of Finance in Sustainable Finance Study Program at the Faculty of Economics and Business in partial fulfillment of the requirements for the degree of

Master of Finance (M.Fin.)

by:

Fahad Babangida

03222420008

UNIVERSITAS ISLAM INTERNASIONAL INDONESIA
DEPOK
2026

ABSTRACT

Fahad Babangida
03222420008
Fahad.babangida@uiii.ac.id
Master of Finance in Sustainable Finance
Universitas Islam Internasional Indonesia

This study investigates the relationship between the green accounting practices and the firm value of companies listed on the Nigerian Exchange Group (NGX), holding constant firm-specific characteristics such as firm size, leverage, profitability, and firm age. The study uses panel data from 2020 to 2024, resulting in 100 years of data, which are sourced from Refinitiv, annual reports, sustainability reports, African financials, and the NGX database. The Green Accounting Index (GAI) derived from the Global Reporting Initiative (GRI) framework is applied to measure green accounting practices, while the natural log of firm value is used as a measure of firm value. The study builds a body of knowledge by synthesizing the concepts of green accounting practices, firm-specific financial characteristics, and sector differences in one framework, specifically in Nigeria, where reporting of sustainability is still not mandatory and has not been studied extensively. The results show a positive value on green accounting, but a low impact on firm value. Leverage, profitability, and firm age, however, have strong positive relationships with firm value, whereas firm size has a negative relationship. The results reveal that although sustainability issues are gaining importance, the traditional financial indicators are still more significant in explaining the firm value in developing countries like Nigeria. The study also underscores the need to have credible environmental reporting and institutional support to enhance the value relevance of environmental practices. The results are important for policy implications for companies, investors, and government leaders interested in supporting sustainable business models and sustainable value generation in emerging markets.

Keywords*: Green Accounting, Firm Value, Panel Data Analysis, Sustainability Reporting, Nigerian Exchange Group*

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATION DIRECTORY

GAI	: *Green Accounting Index*
GRI	: *Global Reporting Initiative*
NGX	: *Nigerian Exchange Group*
OLS	: *Ordinary Least Squares*
FE	: *Fixed Effects*
RE	: *Random Effects*
VIF	: *Variance Inflation Factor*
ESG	: *Environmental, Social, and Governance*
EV	: *Enterprise Value*
CSR	: *Corporate Social Responsibility*
STATA	: *Statistical Software for Data Analysis*
GDP	: *Gross Domestic Product*
SDGs	: *Sustainable Development Goals*
IFRS	: *International Financial Reporting Standards*

CHAPTER I

INTRODUCTION

1.1 Background

Corporate reporting standards have changed significantly because of the global focus on sustainability and environmental awareness, and businesses are under pressure to reveal data on environmental, social, and governance (ESG) issues. The concepts of sustainability reporting have become highly vital for improving transparency, reducing information asymmetry, and empowering stakeholders to assess a firm's potential to create long-term value. The quality of sustainability disclosure required by investors, regulators, and other stakeholders in both developed and emerging economies is rising. It is expected to remain high, covering both firm environmental performance and risk exposure. Empirical research also shows that if the disclosures are credible and decision useful, sustainability disclosures can impact investor actions, increase market efficiency, and increase the value of a firm (Eccles et al., 2014; Friede et al., 2015). This is a worldwide phenomenon, but the trajectory of green accounting reporting to the firm value is subject to contexts, particularly in emerging economies, where the institutional support is not as strong.

Nigeria is a case in point where the relation between green accounting practices and firm value is interesting. Nigeria has one of the biggest and most dynamic economies in Africa and has companies operating in many sectors of the economy, e.g, oil and gas, manufacturing, and financial services. Environmental risks and regulatory attention, combined with pressure from various stakeholders, make these industries particularly susceptible to sustainability disclosure, and it is growing more relevant. Sustainability reporting is, however more or less mandatory in Nigeria, and not widely regulated as in the developed economies. The institutional environment results in the different sustainability reporting practices of the various firms, which are also inconsistent (Yeye & Egbunike, 2023). Investors may find it hard to comprehend environmental reports and lead to continuous information imbalance and valuation uncertainty for companies.

Whereas sustainability reporting has been more of a voluntary practice in Nigeria, it is more common and is required in many developed economies, and is more regulated. Most companies that report on sustainability are more likely to do this as a way of meeting expectations of legitimacy or stakeholder demands or because of new reporting requirements, rather than as a part of a value creation strategy. This can be reflected in the overall poor quality of disclosures of sustainability, its lack of comparability, and weak evidence of consistency of sustainability information, which may negatively impact firm value (Taiwo et al., 2022). Numerous companies may engage in sustainability reporting to comply with the regulations or to get rid of all doubts about their business, but without planning and deliberate consideration of how to embed sustainability in their business operations. This aligns with the legitimacy theory, which indicates that firms provide such sustainability information to gain social approval to enhance their economic performance. However, sustainability reporting is ineffective when it's symbolic, or not trusted, and when it doesn't have a significant impact on firm value. Research indicates that the economic benefits of sustainability disclosure go beyond just its existence, to its quality, permanency, and its embedding within the corporate strategy (Forcadell et al., 2023).

To overcome these limitations, green accounting (integration of environmental costs and benefits into financial reporting) has been suggested (Purwanti et al., 2024). Green accounting can offer more relevant information for investors, incorporating environmental externalities into the investment decision-making process and connecting sustainability indicators with the investment outcome. The approach is aligned with signalling theory, whereby firms that perform high-quality environmental accounting would be able to signal high-quality management and sustainability. The empirical results show that environmental reporting credibility can positively impact market valuation of the firm, but the relation may differ depending on the circumstances (Aydoğmuş et al., 2022). The usefulness of green accounting as a signalling device could be hampered in emerging markets like Nigeria, where disclosure of sustainable data is largely optional, and there are few rules to ensure it.

Sustainability reporting takes place in an institutional context that plays a key part in creating the relevance of values. The comparative analysis also shows that countries with mandatory sustainability disclosure systems have higher quality sustainability reporting, lower information asymmetry, and better sustainability reporting disclosure-company value connection (Zhang et al., 2023). For instance, jurisdictions that have reporting standards and enforcement are likely to provide investors with accurate and comparable sustainability data, and thus ease the incorporation of environmental, social, and governance factors into valuation processes. Conversely, in countries where voluntary reporting is a practice (as is found in Nigeria), it can result in selective disclosure and poor reporting quality, which can reduce the value of the sustainability practices.

Although there is growing evidence in the literature that sustainability practices are positively related to firm value, the results differ in emerging markets. Substantial benefits have been reported in some studies, and weak or insignificant correlations have been reported in other studies, particularly in cases of poor disclosure quality or lack of investor interest (Nguyen et al., 2021). The results obtained in such an ambiguous way show that the path to sustainability should not be extrapolated from the results in developed economies but should be investigated in a specific institutional and market context instead.

In addition to sustainability factors, the classical determinants of financial leverage (firm size, leverage, profitability and firm age) are still important variables affecting firm value. The above variables are significant that determines the performance, financing and organisation profile of firms and influence the investors' perception. For example, profitability is considered one of the most important factors to determine the value of a firm as it indicates the future cash flow generating capacity of the firm. Similarly, too much debt raises financial risk, while too little debt means that the firm's value cannot be enhanced using leverage, which offers tax benefits and managerial discipline. In some studies, firm size and age are associated with operational efficiency; the positive or negative impacts of handling these factors on value creation are attributed to experience of an organisation (Nguyen et al., 2021).

While there are many studies in the field of determinants of firm value, few have simultaneously focused on the effects of green accounting, sectoral comparison, and firm-specific determinants on firms in emerging markets. In many studies, the financial variables are analysed separately from the sustainability practices, or only the sustainability practices are analysed (Buallay, 2019). Furthermore, there are often misaligned differences between sectors, as businesses in different sectors face unique environmental, regulatory, and stakeholder risks. This is particularly the case in Nigeria, where the oil and gas industry is under more environmental pressure than the service industries (Olayinka & Oluwamayowa, 2014).

Against this background, this work is a contribution to the literature in the first place in that it looks at the effects that green accounting practices have on firm value in addition to considering firm-specific attributes and differences between the three main sectors (primary, manufacturing, and services). The research uses panel data analysis to offer empirical evidence on the relationship between environmental disclosure, financial factors, and the impact of the combination of these factors on firm valuation in a developing economy. The results indicate that green accounting positively affects the value of the firm. This effect is, however, not so high compared to other traditional financial determinants like leverage, profitability, and firm age. This means that although sustainability practices are becoming more important, they have still not been developed as value drivers in the context of the Nigerian context (Uwuigbe, 2018).

Furthermore, sectoral analysis can give greater insight into the dynamics of the industry a firm may face that can impact the value of the firm. The results indicate significant differences between the sectors and emphasize the need to view the implementation of sustainability measures and the results in their industry-specific contexts. This highlights the need to have sectoral approaches, considering the specific opportunities and challenges within a specific sector and not applying the same methodology for sustainability reporting and the creation of value.

1.2 Problem Statement

Although the adoption of sustainability disclosure has become widespread in Nigeria and globally, the link between green accounting policies and firm value

is unclear, and both empirical and theoretical ambiguity exists in Nigeria. Although there is an increasing trend toward environmental and social reporting in Nigerian companies, there remains uncertainty about whether this reporting, especially when supported by internal green accounting practices, can lead to better market valuation. Existing empirical evidence is inconclusive. Other researchers have documented a positive correlation between sustainability reporting and market-based performance measures such as earnings per share and stock price (Adonye & Biradawa, 2022; Plumlee et al., 2015). Nonetheless, other research reports poor or irrelevant relationships, particularly in sensitive industries such as oil and gas, suggesting that sustainability practices are not always well received by the market. This contradiction suggests that sustainability disclosure may have different effects on firm value in Nigeria, depending on contextual factors such as industry, disclosure level, and measurement techniques.

It is even more ambiguous when green accounting practices are taken into consideration. Despite Nigerian firms being on the right path towards environmental cost accounting, pollution control reporting, and recognition of environmental liability, the consequences of these practices for firm valuation remain unclear. It has been demonstrated that certain green accounting proxies show a positive correlation with firm value, whereas others do not, suggesting that investors do not consistently price in environmental information (Adebanjo & Wisdom, 2024). This difference raises the question whether some parts of the environmental accounting process are value-relevant, or whether other parts are immaterial or unreliable. It is also a symptom of a wider problem in emerging markets, where there is no universal standard on environmental accounting, which could limit the comparability and credibility of the information.

Character and quality of sustainability reporting in Nigeria is another major concern. Much of the literature has been on disclosure quantity, as evidenced by checklist indices, not on the quality of information in terms of being credible, material, and reliable. This means that in Nigeria, sustainability reporting is generally not mandated, and enforcement of the reporting process is weak, thereby questioning the accuracy of the information being reported, as it may not be in line with the actual environmental performance of the companies (Ukoh et al., 2024).

In other instances, sustainability initiatives might even increase operational expenses without providing the relevant value benefits, especially when they are not embedded in a robust system of governance and accounting (B. Ibrahim & Fadeke, 2024). This finding is consistent with previous studies that have found that sustainability reporting, whether voluntary or compulsory, has little influence on firm value unless robust internal procedures support it and are well-integrated with corporate strategy (Ioannou & Serafeim, 2011). This is more acute in the Nigerian context, where reporting practices are, for the most part, voluntary.

Besides the factors explained in sustainability, well-established financial and firm-specific attributes, including the firm size, leverage, profitability, and firm age, also affect the value of firm. However, many of the studies conducted in Nigeria focus on sustainability disclosure without proper controls for the factors that could affect firm value. This forms a disjointed perception of the interaction between environmental practices and the conventional financial drivers. For example, although the disclosure on sustainability could have a less profound impact, the disclosure on financial variables, such as leverage and profitability, could have a more profound impact on firm value. When these interactions are ignored, the potential for either over- or underestimating the true effect of green accounting practice may result.

Also, the sector-wise variations have not been studied much in the Nigerian literature. Environmental risk, regulatory pressure, and stakeholder oversight are different for companies in various sectors and may impact the sustainability initiatives and market value of companies. To name a few examples, extractive companies are more exposed to environmental challenges than service-oriented companies, which may impact investors' expectations on the content of the sustainability disclosures. Existing studies have struggled to provide a more detailed understanding of the linkage between sustainability practices and firm value due to the lack of industry-specific dynamics.

The lack of clarity in the literature is also due to methodological limitations. Most available studies use cross-sectional designs or small datasets, which are inadequate for capturing heterogeneity at the firm level. Though studies use secondary quantitative data, they tend not to incorporate green accounting measures

into sound econometric models that account for firm-level impacts. Zik-Rullahi & Jide 2023 Note that only a few empirical studies have established the relationship between internal environmental accounting practices and firm value in a systematic, statistically significant manner. Such a gap is especially critical because it is difficult to determine the actual impact of green accounting on firm valuation without controlling for other firm-specific and time-invariant factors.

As a result, although sustainability disclosure is increasingly the focus of regulation and stakeholders are becoming more interested in sustainability issues, a partial and empirically inconsistent picture remains regarding whether green accounting practices add value to firm value in Nigeria. This gap has far-reaching practical implications. Unless the firms see clear valuation advantages in environmental accounting practices, they may be unwilling to invest in meaningful sustainability actions and instead prefer to disclose little or nothing. On the other hand, interpreting the relative significance of green accounting compared to conventional financial determinants may offer more explicit guidance for corporate strategy and policy-making.

The real issues surrounding green accounting in Nigeria in 2025–2026 is the shifting from voluntary to mandatory reporting, weak regulatory enforcement, and high implementation costs, even as the country moves towards a net-zero economy by 2060 (Udo Udoma & Belo-Osagie, 2026).

In response to these problems, this paper uses panel data to examine how green accounting practices affect firm value, checking for other important firm-specific variables, such as firm size, leverage, profitability, and firm age. Moreover, the research includes sectoral analysis to reflect industry-specific differences that can affect firm valuation. This study provides more consistent, context-sensitive evaluations of the determinants of firm value in Nigeria, using observable firm-level data and robust econometric methods. Thus, it transcends the constraints of previous research by incorporating both environmental and financial aspects into a single analytical framework and thereby providing more empirical evidence on the contribution of green accounting to value creation.

1.3 Research Gap

Despite growing scholarly and policy attention to sustainability reporting and green accounting in Nigeria, there is still no empirical evidence on the effects of these practices on firm value. The literature on the connection between sustainability disclosure and firm value shows mixed results, with some finding positive correlations with market-based variables like earnings per share and share price, and some finding no significant or even negative impacts, especially in sectors where environmental sustainability is a key issue, such as oil and gas (Adonye & Biradawa, 2022). In the same vein, studies on green accounting practices show mixed results: some environmental costs and liability values appear to be value-relevant, while others have no material effect on firm valuation, leading to heterogeneous investor reactions (Adebanjo & Wisdom, 2024). The contradictions illustrate the absence of any empirical common model of assessing the value creation from sustainability practices in Nigeria.

A large gap exists in the Nigerian literature regarding green accounting practices being incorporated into firm-level econometric models that can explain firm value; this is an empirical gap. While previous literature has studied sustainability disclosure as a standalone topic, it has seldom addressed the relationship between the subject of sustainability disclosure and the firm's financial attributes, which are linked to firm size, leverage, profitability, and firm age and are known to have a significant impact on firm value. This effect may thereby result in an overestimation or underestimation of the marginal contribution of sustainability-relevant practices, known as omitted variable bias. This requires a more detailed analytical framework, bringing together environmental practices and traditional financial drivers in one panel data model.

Furthermore, the research overlooks the firms' unobservables and variability, which influence firm value and sustainability practices. Most of the research is based on cross-sectional or pooled research that fails to effectively estimate firm-specific effects, so their results may not be very reliable. Zik-Rullahi & Jide (2023) draw attention to the fact that the lack of robust econometric tools that can handle unobserved variability has limited the ability of previous studies to establish consistent connections between environmental accounting practices and

business performance. This method's flaw is significant and shouldn't be disregarded, especially in developing nations like Nigeria that have a lot of variation in their efficiency, sustainability, and governance systems.

Another significant omission is the failure to consider sustainability in the sector and companies' valuation. Industries also differ with respect to the degree of environmental risk, the regulatory environment, and pressure on the firms, which could influence their adoption and embrace of green accounting practices and their investor valuations. However, most Nigerian studies consider firms as a homogeneous group and do not fully account for the variations in the connection between business value and sustainability practices that exist across industries. This exclusion prevents the ability to develop context-specific information, particularly in a diverse economy, where extractive, manufacturing, and service industry sustainability dynamics are drastically different.

Furthermore, the Nigerian context is unique and distinct, which limits the use of previous empirical studies to adequately capture these unique dimensions. The credibility of sustainability reporting and its usefulness to capital markets can be affected by the lack of rigour in the implementation of environmental rules, by the substandard state of reporting, and by the varying levels of institutionalisation. While these contextual factors may be part of the discussion regarding qualitative arguments, they rarely are part of quantitative models of firm value. This disconnection is one of the existing discrepancies in empirical findings and restricts the generalizability of existing studies in the Nigerian setting.

Methodologically, much of the literature reviewed relies on basic econometric tools that fail to correct for typical panel-data issues with cross-sectional dependency, autocorrelation, and heteroskedasticity. Inadequate resolution of these issues might result in skewed standard errors and flawed statistical conclusions, thereby contributing to inconsistent findings across previous research studies. More stringent empirical methods that use appropriate diagnostic tests and sound estimation methods are thus needed to yield valid and reliable conclusions.

Considering these empirical, methodological, and contextual constraints, the literature clearly has a gap that could be filled by a study utilising a robust panel

data model to test the impact of green accounting activities on firm value in Nigeria, whilst accounting for important firm-specific attributes and sector differences. By using a fixed-effects model with cluster-robust standard errors to account for unobserved heterogeneity and possible econometric issues, our study closes this gap and offers more reliable estimates of the association between green accounting and business value. Moreover, the research offers a more profound understanding of the function of industry dynamics in valuing sustainability-related practices by also integrating sectoral analysis.

By filling in these gaps and offering more empirical data on the function of green accounting in determining business value in an emerging market setting, this study advances our understanding. It also provides useful information to firms, regulators, and investors on the relative significance of environmental practices compared with traditional financial determinants of firm value, in an environment where sustainability reporting remains largely voluntary and homogeneous.

1.4 Research Questions

1. What is the effect of green accounting practices on firm value in Nigerian listed firms?
2. How do firm-specific characteristics (firm size, leverage, profitability, and firm age) influence firm value?
3. Are there sectoral differences in firm value among Nigerian listed firms?

1.5 Research Objectives

1. To examine the effect of green accounting practices on firm value in Nigerian listed firms.
2. To analyse the influence of firm-specific characteristics (firm size, leverage, profitability, and firm age) on firm value.
3. To assess sectoral differences in firm value among Nigerian listed firms.

1.6 Significance of the Study

The study's empirical results, which clarify the connection between green accounting practices and firm value in the Nigerian environment, where prior findings in the literature are inconclusive, make it noteworthy. In order to more precisely evaluate the connection between green accounting and other significant

financial variables, including business size, leverage, profitability, and firm age, the study makes use of firm-level panel data using a fixed-effects regression model. Theoretically, the study contributes to the stakeholder, legitimacy, signalling, and resource-based perspective of green accounting practices by examining whether increasing transparency, credibility, and firm capabilities affect firm value. The results offer nuanced information: The relationship between green accounting and firm value is positive, though lower than the relationship between traditional financial accounting measures and firm value.

Methodologically, the use of fixed effects with cluster-robust standard errors increases the reliability of the results because it controls for unobserved heterogeneity and heteroskedasticity, the most significant limitations of the previous study done in Nigeria. The study also features a sectoral analysis, which adds to the study by incorporating industry-specific dynamics. From the policy perspective, the study has positive implications for policymakers, managers, and investors in practice. It emphasises the necessity of more stringent regulations and better standardisation of sustainability practices to increase their value relevance. Overall, the research will improve understanding of sustainability practices in emerging markets and help create more efficient, sustainable capital markets in Nigeria.

1.7 Research Hypothesis

The following hypotheses were formulated to examine the relationship between green accounting practices, firm-specific characteristics, and firm value among Nigerian listed firms:

H1: Green accounting practices have a positive and significant effect on firm value.

H2: Firm size has a negative and significant effect on firm value.

H3: Leverage has a positive and significant effect on firm value.

H4: Profitability has a positive and significant effect on firm value.

H5: Firm age has a positive and significant effect on firm value.

H6: There are significant sectoral differences in firm value among Nigerian listed firms.

CHAPTER II

LITERATURE REVIEW

2.1 Theoretical Framework

2.1.1 Stakeholders' Theory

The most applicable theories that the research is based on are as follows: The Stakeholder Theory, developed by (Freeman, 2010) is mentioned. The theory is that companies are run in an environment in which there are connections among many stakeholders, including investors, regulators, creditors, employees, and the broader community. These stakeholders have different interests and expectations, and firms need to consider them to survive and create long-term value. In this context, corporate performance is not limited to financial performance; it also encompasses social and environmental responsibilities (Freeman, 2010).

Stakeholder Theory can be used in this study as background for understanding why firms engage in green accounting practices. The nature of environmental disclosures and accounting practices is not just a voluntary undertaking but, more so, a response to stakeholder pressure to disclose and be accountable. According to Deegan (2014) Stakeholders require credible, decision-useful environmental information to evaluate corporate behaviour and exposure to risks. Green accounting practices, e.g., measuring environmental costs, pollution control accounting, and resource efficiency evaluation, thus serve as means by which firms can respond to these demands by delivering structured, quantifiable information on the environment.

Moreover, green accounting enhances the validity of corporate reporting by linking environmental performance to financial results. Schaltegger and Roger Burtt (2017) contend that environmental accounting systems enhance the accuracy of information on sustainability aspects, thereby enabling stakeholders, especially investors, to better assess the long-term riskiness of environmental liabilities, regulatory compliance, and resource inefficiency (Schaltegger & Burritt, 2017). Green accounting, in this sense, serves as an information instrument that minimises disparities among companies and stakeholders, thereby enhancing transparency in corporate reporting.

The Stakeholder Theory is particularly pertinent in Nigeria because the system of institutional enforcement is not as strong as it is in other countries, and sustainability reporting is largely voluntary. Stakeholder pressure is a very important force in environmental disclosure practices in such environments. According to empirical research, businesses in developing nations are more likely to impose higher standards for environmental reporting because of greater investor, regulatory, and societal pressure (Emeka-Nwokeji & Osisioma, 2019). Green accounting can be built as a strategic response even when there are no realistic regulatory requirements, if the expectations of the stakeholders are solid. The companies that are thought to be most successful in achieving positive market results are those that take their stakeholder issues seriously, which means convincing them of the environmental merits of what they do. Companies can gain investor trust, improve the perception of their reputation, and mitigate risk perceptions by providing clear, credible environmental information. This can therefore result in increased company value, which shows up as a cheaper cost of capital and a greater market value. The magnitude of these benefits, however, is determined by stakeholders' perceptions and pricing of such information, especially in emerging markets where perceptions and putting sustainable practices into practice are still developing.

Stakeholder theory, which holds that the firm's value is formed by the perceptions of its stakeholders and that green accounting practices reduce information asymmetry, can generally be used to support the thesis that green accounting practices contribute to the formation of firm value. The study's empirical context, which looked at how green accounting practices affected firm value in the Nigerian capital market, is consistent with the theoretical approach.

2.1.2 Signalling Theory

Signalling Theory explains how businesses communicate reliable information to external stakeholders in circumstances of information asymmetry. The theory was first applied to corporate disclosure research by Spence (1973) in the labour market context. It assumes that managers have their own information about the firm's quality and performance that external investors cannot monitor.

This leads firms to use signals to minimise information asymmetry and influence investor perceptions.

In this study, signaling theory can be applied to explain why businesses are adopting green accounting methods. Environmental performance problems, such as emissions, resource consumption, and environmental liabilities, are usually not directly visible to external stakeholders. As a result, companies use organised disclosures to convey this information. Connelly et al. (2011) suggest that to be effective at mitigating information asymmetry, credible signals must be visible, hard to fake, and related to the firm's quality.

Signals are bolstered by green accounting practices, which furnish quantifiable, verifiable information about the environment. An expenditure and narrative disclosure is 'green accounting,' which measures the environmental costs, pollution control expenditure, and resource efficiency to give more objective information about a company's environmental performance. Investors are more likely to respond positively to the information where it is tangible and credible, says Clarkson et al. (2008), since this reduces uncertainty and perceived risk to investors. In this regard, green accounting is a signal and can create greater investor confidence and, in turn, an improvement in the company's worth.

The Signalling Theory seems most applicable in emerging markets such as Nigeria because it is possible that the information symmetry may be greater due to less robust reporting principles and enforcement. These investors focus more on company disclosures to evaluate the quality and risk of companies to invest in. According to the empirical evidence, companies that disclose information about the environment and are more transparent and structured have a better chance of being differentiated from their rivals, as well as attracting investment interest (Emeka-Nwokeji & Osisioma, 2019). Green accounting is therefore an important signalling mechanism that can send a strong signal of compliance and commitment to sustainability.

However, the efficiency of these signals will depend on the way the market reacts to them. When the reporting of sustainability is predominantly voluntary and non-standardized, investors might doubt the credibility of the reports and devalue them. As mentioned by Dhaliwal et al. (2011), the market response towards the

disclosure on sustainability is more positive when the disclosure is perceived as credible and decision-useful. In instances where the credibility is dubious, the signalling effect could be less pronounced or limited to the firm's value to a minor degree.

Overall, the Signalling Theory would support the argument that by lowering information asymmetry and providing trustworthy data on environmental performance, green accounting techniques can affect a company's value. Additionally, it might also be used to illustrate why this may not have a significant or consistent impact in emerging markets where the concept of standardisation and credibility of environmental disclosure is still in the early stages. This view is in line with the empirical nature of this study, which is focused on the impact of engaging in green accounting practices on firm value in the Nigerian capital market.

2.1.3 Institutional Theory

Institutional Theory is one key theory that suggests that an understanding of firms' sustainability reporting and green accounting practices can be gained by examining the forces of external pressure acting on them. Both (DiMaggio & Powell, 2000) and Meyer & Rowan. (1977) advanced the theory. It states that organisations follow institutional demands, standards, and expectations of their working environment, from which they seek legitimacy, stability, and social acceptance. The theory states that there are coercive, normative, and mimetic pressures in a society and industry environment that often lead companies to have similar structures and practices.

The use of green accounting practices is not purely a managerial decision, nor an economic benefit, but is also driven by external pressures from regulators, investors, international institutions, professional organisations, and society, and for this reason, Institutional Theory is extremely relevant for the study. In the case of institutional isomorphism, (DiMaggio & Powell, 2000) cited three main mechanisms: Coercive pressure through regulation and government influence; Normative pressure through professional standards and expectations; and mimetic pressure, which is the imitation of successful businesses or globally recognized businesses when there is uncertainty.

Coercive pressures can occur when new environmental legislation is enacted, when a stock exchange country requires disclosure of sustainability information, and when national and international sustainability frameworks like the Global Reporting Initiative (GRI) are introduced. Normative pressures could come from accounting professions, sustainability consultants, and international reporting standards, which can motivate firms to implement environmental reporting practices. Mimetic pressures can also be present, particularly in emerging markets, where companies emulate other firms, either multinationals or other industry leaders, for competitiveness and legitimacy (Amran & Haniffa, 2011).

Institutional theory is especially suited to Nigeria's emerging economy, where formal sustainability regulation and enforcement mechanisms are still in their infancy, to explain sustainability reporting practices. In this context, companies can pursue green accounting through other, non-direct financial incentives, because they want to conform to international standards and keep their legitimacy. According to empirical evidence, there is a growing trend for companies in developing countries to report on sustainability issues as a result of external institutional pressures from foreign investors, international markets and global sustainability initiatives (Ioannou & Serafeim, 2011). Likewise, research has revealed that when institutions are weak, firms may engage in symbolic or selective sustainability reporting, that is, reporting on sustainability information primarily for the purpose of conforming and legitimising, rather than reporting on their environmental performance (Tilt, 2016).

Another explanation of the potential weak or inconsistent link between corporate value and green accounting is provided by Institutional Theory. While companies might engage in environmental reporting for institutional requirements, investors might not always see it as legitimate and meaningful if there is low assurance and low quality in reporting and enforcement. Therefore, sustainable practices could be embedded in the system prior to the actual economic rewards being realised in market valuation.

In general, according to the institutional theory, institutional pressures have an impact on green accounting methods in the business environment, in addition to strategic considerations from within the institution. The theory, therefore,

complements Stakeholder Theory, Legitimacy Theory, Signalling Theory, and Resource-Based View, as it explains the impact of wider institutional context on firms' sustainability behaviour and disclosure practices in the Nigerian context.

2.2 Empirical Literature Review.

2.2.1 Sustainability Disclosure and Firm Value.

The connection between sustainability disclosure and corporate value has attracted a lot of scholarly attention over the last decade, with empirical evidence indicating both positive and situation-specific influences. The general expectation about Environmental, social, and governance (ESG) is typically used to operationalize sustainability disclosure reporting, is that it will raise investor confidence, improve openness, and lessen information asymmetry. The degree to which such disclosure will succeed in firm value, however, differs across institutional and market settings.

The initial empirical studies by Dhaliwal et al. (2011) indicate that a company that engages in voluntary sustainability disclosure will see its cost of equity capital decline, implying that investors will assign lower risk premiums to companies that disclose transparently. The quality of environmental disclosure, measured by accuracy, completeness, and relevanceis also discovered to have a good correlation with the future performance of businesses and value, confirming this discovery by (Plumlee et al., 2015). Interestingly, the quality of disclosure, rather than the amount of disclosure, creates value relevance, so there must be credit and decision useful information.

The latest wave of research has continued to find that there is a positive link between sustainability disclosure and firm value, particularly in developed markets. Qiu et al. (2016) analyzed the companies listed in the UK. They discovered that positive relationships between environmental and social disclosures and value and profitability of the firm were stronger, and that the effects of environmental disclosures were stronger. Similarly, the results in Alsaifi et al. (2020) validate the findings of positive stock market reactions to positive ESG-related disclosures, and negative reactions to adverse disclosures, which confirms the quality and risk management role of sustainability reporting.

Sustainability disclosure-firm value relationships appear to be more nuanced and inconclusive in emerging markets. Huang et al. (2023) investigated Chinese companies and discovered that the disclosure of sustainability improves company value, particularly when institutional enforcement is weak. They claim that disclosure is an alternative to formal governance systems in such situations and can help attract investors and minimise uncertainty. This indicates that sustainability reporting can be more effective in markets with underdeveloped formal regulatory frameworks.

Nonetheless, several studies also indicate shortcomings in sustainability disclosure in emerging economies. Where sustainability reporting is more of a voluntary act (and not always standardised), as is the case in Nigeria, the disclosures can be seen as symbolic, rather than substantive. Ukoh et al. (2024) observe that sustainability reporting in Nigeria is largely focused on the quantity of disclosed information rather than its quality, casting doubt on the credibility, comparability, and assurance of sustainability reporting. Consequently, investors can discount sustainability information when valuing a company.

Also, there are indications that disclosure of sustainability may not always result in immediate financial gain, programs may not always be cost-effective, particularly if they are not integrated into the company's short-term business goals (Takacs, 2023). The weak or insignificant correlation between sustainability disclosure and firm value observed in most emerging-market empirical studies may be the reason.

Overall, empirical studies indicate that the provision of sustainability information can positively impact firm value through transparency and the reduction of information asymmetry, but this effect is influenced by several factors, including the quality of sustainability disclosure, the institutional environment, and investor awareness. Sustainability disclosure will be less valued or less important in emerging markets where enforcement is less robust, and sustainability practices are developing.

2.2.2 The Firm Value and Green Accounting.

Green accounting, focusing on internal measures and management of environmental costs and performance, has also received a large body of research,

as has the measurement of firm value. In contrast to sustainability disclosure, which is an external communication, green accounting internalises organisational capabilities in environmental management, resource efficiency, and risk mitigation. Empirical studies show that Green Accounting can enhance the firm value by improving performance efficiency and reducing environmental risk. Some preliminary findings by Clarkson et al. (2008) suggest that the more successful a company is, the more likely it is to report on its environmental-related information, which suggests that internal environmental accounting systems play a role in transparency and credibility. The correlation suggests that green accounting is a critical part of external reporting and investor perceptions.

Nor et al. (2016), in their study of emerging markets, they concluded that the practices of environmental accounting have positive and significant effects on both performance and market value of the Malaysian companies. The results of their research indicate that embedding environmental costs into financial decision-making will result in more effective distribution of resources and to long-term strategic planning. Similarly, Laskar (2018), in his cross-country research, he concludes that companies with well-developed environmental accounting systems are valued more in the market, have less information asymmetry, and have higher levels of investor confidence.

Environmental management systems (EMS) like ISO 14001 have also been extensively researched as indicators of a structured green accounting process. According to Wu et al. (2020), companies with EMS structures generate better financial outcomes and higher firm value, mostly due to their enhanced operational efficiency and risk management. New research from Margaret et al. (2024) shows that the market is increasingly incentivising companies to implement certified environmental systems, particularly in the era of global climate pledges. Enterprises with certified environmental systems are linked to lower risks for regulatory and operational management.

Despite this positive evidence, however, the relation between green accounting and firm value is not always very strong and direct. The research results presented vary in their implications: without immediate financial returns, environmental investments can have short-term implications (Takacs, 2023),

particularly in markets where sustainability aspects are not yet well integrated into investment decisions. In addition, Luo et al. (2021) point out that the impact of environmental management systems on firm value is contingent on the extent to which the systems are accepted and appreciated by external stakeholders, which could be customers or shareholders. Furthermore, Kim et al. (2021) show that the value of the firm can be raised using green innovation, with the effect being more pronounced in situations where environmental measures form part of the firm's corporate strategy. This means that the application of green accounting is not the only factor influencing its usefulness; it also depends on its integration, depth, and strategic orientation.

Implementing green accounting in Nigeria is not uniform, and the institutional framework for support is immature. While green accounting may result in improved decision-making within a firm and improve operational efficiency, in the short term, its benefits on firm value may be small or negligible. It is consistent with empirical research, which revealed a positive but weak link between green accounting practices and firm value, which reflects the dynamic nature of sustainability practices in emerging markets.

2.2.3 Complementarities between Green Accounting and Sustainability Disclosure.

Sustainability disclosure and green accounting are subjects that have been examined and debated in isolation, but empirical research shows that there are conceptual linkages between the two and they reinforce each other. Green accounting is the internal source of information and mechanisms necessary for sustainability disclosure, which is an external report on environmental performance.

The internal accounting systems of companies are found to affect the quality of external disclosures (Clarkson et al., 2008) as there exists a relationship between a firm's internal environmental performance and its external environmental disclosure. Similarly, Plumlee et al. (2015) suggest that the importance of environmental transparency is a matter of the reliability of the information that lies behind it, which is built through internal accounting procedures. This is a complementary relationship coupled with empirical evidence. According to Luo et al., (2021) companies with robust environmental management systems make more

reliable and credible sustainability reporting, which enhances investor confidence and credibility. This implies that green accounting enhances the informational aspects of sustainability reporting by providing quantifiable, verifiable data.

Nevertheless, in developing countries like Nigeria, the relationship between internal environmental practices and external reporting is rather low. Disclosures on sustainability are usually voluntary, heterogeneous, and, at times, inadequately supported by quantitative data, thereby limiting their validity and applicability to investors (Ukoh et al., 2024). As a result, companies may participate in sustainability reporting, but the lack of robust internal accounting systems can mitigate the impact of such reporting on firm valuation.

Although green accounting and sustainability disclosure are conceptually opposed, their overall effect on firm value may not be realised to its full potential in markets with weak regulatory institutions and investors insensitive to sustainability disclosures. This reiterates the value of analysing sustainability disclosure in its wider institutional context, rather than assuming a strong relationship with firm value across the board.

2.3 Conceptual Framework

The theoretical basis of this research comprises five major approaches: The Stakeholder Theory, Institutional Theory, and Signalling Theory, all of which shed light on the connection between environmental disclosure practices and company value. These theories and actual data serve as the foundation for the study's conceptualisation of firm value as a process of green accounting practices and firm-specific financial traits, rather than as an interaction process involving unobserved reporting quality or mediation effects.

The main construct of this paper is green accounting, conceptualised as a green accounting index (GAI) that measures the extent of environmental disclosure and reporting among companies. Green accounting involves including environmental issues in financial and non-financial reporting, including resource consumption, emissions, and environmental expenses, and sustainability practices. Within Signalling Theory, these would be made by an investor to indicate the firm's environmental responsibility, its handling of risk, and its focus on long-term sustainability (Connelly et al., 2011). Empirical evidence from Dhaliwal et al.

(2011) and Plumlee et al. (2015) supports this argument, where environmental disclosure is found to be a mechanism that reduces information asymmetry and promotes investor confidence.

However, empirical findings, particularly in emerging markets, imply that the impact of environmental disclosure on a company's worth is either weak or inconclusive in most instances, despite the strong theoretical expectation of a positive effect. The current research, therefore, assumes that green accounting and firm value are directly related, albeit weakly, because the information disclosed in the context of a country like Nigeria may be symbolic or lack credibility because of weak enforcement and inadequate standardisation (Ukoh et al., 2024). In addition to green accounting, the framework comprises control variables that impact a firm's value, including firm size, leverage, profitability, and firm age. These are well-established determinants in finance and accounting literature, and they are needed for decomposing the impact of environmental disclosure. The value of the company is positively impacted by profitability. because it shows good financial performance and growth potential of the firm, which is consistent with Signalling Theory. Leverage has a significant impact, too, influencing capital structure decisions and perhaps disciplining debt, too. Structural and lifecycle attributes are captured by the size and age of firms and may increase or decrease firm value, depending on how efficiently and skilfully they are managed and how complex the organisation is.

The Stakeholder Theory provide an explanation of why companies are interested in environmental disclosure to gain legitimacy and meet the expectations of stakeholders. Nonetheless, disclosures in weak institutional environments might not necessarily translate into actual valuation benefits. This implies that despite the contribution of green accounting towards transparency and legitimacy, its impact on the firm value will differ as per the credibility and usefulness of the green accounting information for decision-making by the stakeholders. One of the highlights of the present study is that it does not directly test the mediation and moderation effects, as well as the sustainability reporting quality (SRQ) as a dependent variable, which has not been done in the literature before. However, green accounting has been considered as a proxy for the observable part of environmental disclosure practices and has introduced ecom-reporting into the

dataset. This is essential because of data limitations and is suitable for the conceptual framework to be used in the study in relation to the empirical model.

The overall framework is based on the premise that "green accounting" and traditional financial accounting are needed to determine the value of the firm, and that the conventional financial accounting factors will have more impact and be more stable. It reflects the general empirical reality in emerging markets, where environmental, social, and governance (ESG) practices are still at a very early stage and cannot be well integrated in investment decision-making.

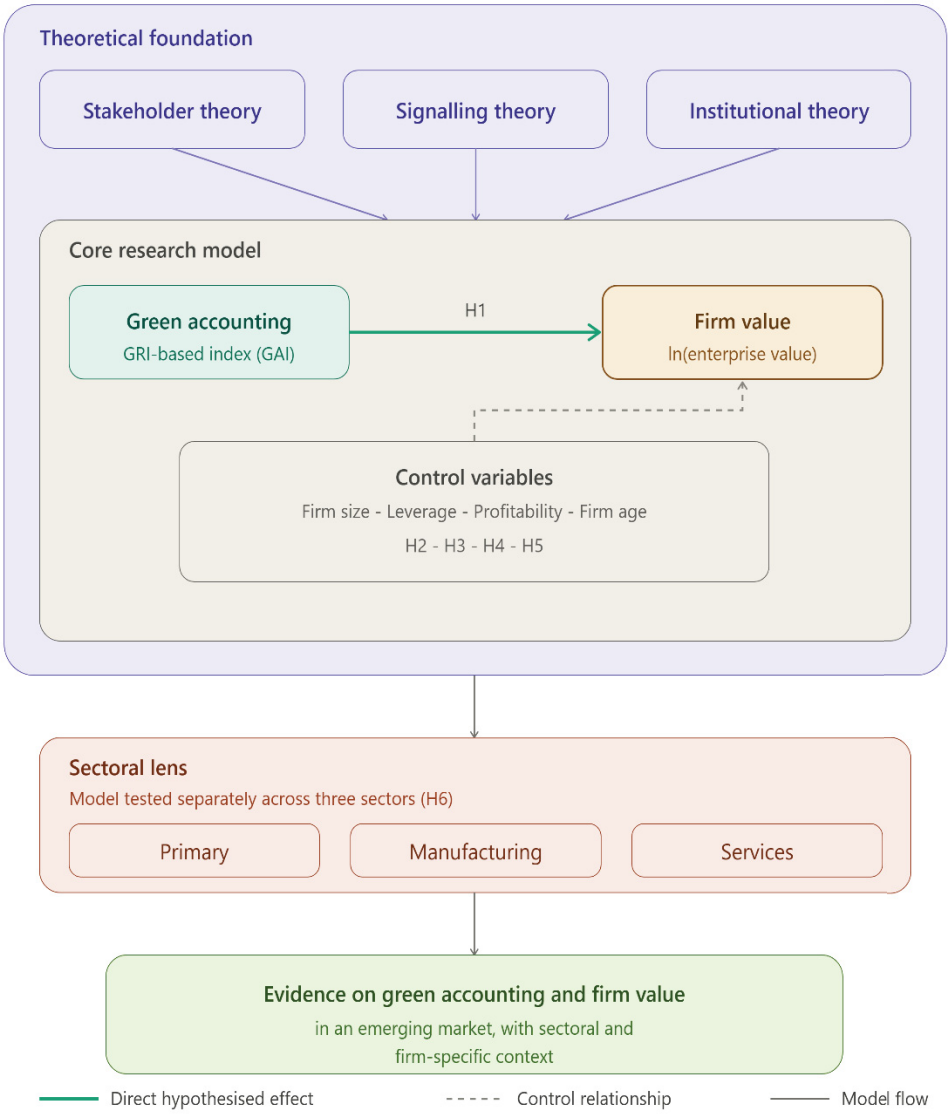

Figure 2.1. Conceptual Framework

Source: Author's conceptualisation based on literature

The conceptual model shows how green accounting procedures, company characteristics, and business value are related. In the model's core, green accounting (as measured by the Green Accounting Index) is the independent variable, which stands for the company's disclosures and environmental reporting procedures. The positive correlation between better environmental reporting and firm value, which is linked to increased investor trust, reduced information asymmetry, and improved transparency, is represented by the direct arrow from green accounting to firm value. Additionally, the framework employs firm-specific factors as control variables, such as profitability, leverage, firm size, and firm age. These variables are also directly linked to firm value, indicating that they are highly influential and well-established in determining market valuation. Their inclusion ensures that the influence of green accounting is analysed without reference to traditional financial and structural determinants.

The model also suggests that although green accounting would add to firm value, its effects might be relatively lower than those of financial variables in emerging market settings, where sustainability reporting is still in its infancy. Overall, the framework is oversimplified yet strong, in which the firm value is co-determined by both environmental disclosure practices and core financial characteristics, which is quite consistent with the empirical model and the study results.

This study distinguishes between annual reports, sustainability reports, and corporate social responsibility (CSR) reports, as these disclosures differ in scope, purpose, and relevance to sustainability performance measurement. While annual reports primarily focus on financial performance, sustainability reports provide non-financial disclosures relevant to environmental and social impacts. A comparative summary is presented in Table 2.1.

Table 2.1. Comparative Analysis of Annual Reports, Sustainability Reports, and CSR Reports

Feature	Annual Report	Sustainability Report	CSR Report
Focus	Financial performance & business overview	ESG (Environmental, Social, Governance) performance	Social responsibility & community impact

Feature	Annual Report	Sustainability Report	CSR Report
Purpose	Inform investors about profitability and financial health	Show long-term sustainability practices and impacts	Highlight ethical practices and social contributions
Content	Financial statements, CEO report, strategy, risks	Carbon emissions, environmental impact, labour practices, governance	Donations, community projects, and employee welfare
Audience	Investors, regulators, shareholders	Investors, stakeholders, NGOs, policymakers	Public, community, stakeholders
Regulation	Usually **mandatory** (for listed firms)	Often voluntary (increasingly regulated in some countries)	Mostly voluntary
Scope	Broad (financial + some non-financial info)	Broad ESG coverage	Narrow (mainly social aspects)
Frameworks Used	IFRS, GAAP	GRI, SASB, TCFD, Integrated Reporting	Often, GRI (social indicators) or company-defined
Time Horizon	Short-term (1-year performance)	Long-term sustainability outlook	Short to medium-term social impact

Source: Author's 2026

CHAPTER III

METHODOLOGY

3.1 Research Design

The association between green accounting and company value among Nigerian Exchange Group-listed companies is examined in this study using a quantitative research design. The study focused on companies listed on the Nigerian Exchange Group (NGX) because of their regulatory requirements for financial and sustainability reporting, which allows for credible and consistent data (Ioannou & Serafeim, 2011; Uwuigbe, 2018). The appropriate methodology is quantitative because it allows testing hypotheses objectively using numerical data and econometric methods and determining causal relationships between variables. Previous empirical studies on sustainability and firm value have widely used quantitative approaches to examine these relationships, based on financial and non-financial disclosures. (Cahyani & Suhartini, 2023). The study uses a panel data research design, combining cross-sectional and time-series observations across firms and years. The use of panel data analysis is common in sustainability and corporate finance studies because it allows for the control of unobservable firm-specific effects, eliminates omitted-variable bias, and enhances estimation efficiency. Sustainability reporting studies provide empirical evidence that panel-based methods yield stronger evidence of a relationship between sustainability disclosure and firm value over time and between firms (Kuzey & Uyar, 2017).

The current study uses content analysis of sustainability reports and business annual reports to measure green accounting practices and to convert qualitative information into quantitative indices for econometric modelling. This approach is also well-established in sustainability accounting literature, with disclosure indices ensuring consistency, comparability, and replicability across studies. Hahn & Kühnen (2013) provide a comprehensive review in the Journal of Cleaner Production that suggests sustainability reporting research largely relies on content analysis methods and attributes these disclosures to the most important theoretical models, such as stakeholder, and signalling theories.

Moreover, the paper uses panel-data regression methods to investigate how sustainability-related factors affect company value, such as Fixed Effects (FE) and

Random Effects (RE). The Hausman tests are used to decide between the FE and RE estimators, which ensure that the methods are rigorous and consistent with common empirical procedures in accounting and finance research. These models were applied consistently with earlier empirical research that investigates the applicability of sustainability reporting values using longitudinal firm-level data (Kuzey & Uyar, 2017). In general, quantitative design offers a rigorous, systematic model for assessing how green accounting affects firm value, with results that are empirically grounded, reproducible, and comparable to the existing literature.

3.2 Population and Sample

All the businesses listed on the Nigerian Exchange Group (NGX) comprise the study population. Nigeria's main capital market, the NGX, is home to businesses in several sectors, including manufacturing, financial services, and oil and gas, as well as agriculture and telecommunication. These companies would be more suitable for the research because, in comparison to unlisted companies, they are more likely to report on sustainability and the environment and are subject to regulatory disclosure requirements. A purposive sampling method was employed to select a sample from this population. This non-probability sampling technique is suitable for research in which certain requirements must be met to ensure data availability and the relevance of the analysis. The companies that published an annual report and a sustainability report on an ongoing basis throughout the study time frame (2020-2024) were therefore selected. This criterion guarantees that data input to the analysis is accurate, comparable, and complete.

Purposive sampling is justified because previous empirical studies of sustainability reporting have typically focused on companies that have easily available data that is reported on a regular basis. This approach will enhance the validity of the results, particularly in markets such as emerging markets, where disclosure is still evolving (Hahn & Kühnen, 2013; Kuzey & Uyar, 2017). Furthermore, because data are scarce on the topic in Nigeria, the study began in 2020. Sustainability reporting in Nigeria is mainly voluntary, and empirical evidence suggests that many companies do not report stand-alone sustainability reports or disclose information consistently on environmental and social issues. Some of the companies, in addition, are inconsistent in the publishing of annual

reports. A study period of more than 2020 would therefore significantly cut the number of qualified firms and compromise the balance and strength of the panel data. This is driven by the fact that this disclosure is weak and limited in size in developing countries in previous studies (Ezeagba et al., 2017; Mengistu, 2020).

The sample was divided into three large sectors to represent the composition of the Nigerian economy and guarantee the representation of the sectors:

Primary (extractive and agriculture-related) industry.

Examples: Seplat, Oando Plc, TotalEnergies, Conoil, Presco

Manufacturing sector

Examples: Dangote Cement, BUA Cement, Lafarge Africa, Unilever, Cadbury, PZ Cussons, Nigerian Breweries, Guinness, Honeywell, Meyer

Service sector

Examples: Zenith Bank, UBA, Sterling Bank, MTN Nigeria, Julius Berger

The panel structure was balanced with five years of data (2020-2024) collected across all firms. The sectoral classification will allow the study to analyse variations in sustainability practices and in firm value over sectors, which is essential, since the incentives for environmental impact and disclosure are very different across sectors. In general, the sampling approach meant that only firms with sufficient and reliable data were selected, which enhances the econometric analysis and upholds the tradition of sustainability and financial reporting research.

3.3 Data Collection and Measurement of Variables

The information collected for this research was from several reliable secondary sources to ensure consistency, accuracy and completeness. Data on finances and non-finances were gathered from Refinitiv Eikon, African Financials, the official websites of the sampled companies, annual reports (ARs), sustainability reports (SRs), and the Nigerian Exchange Group (NGX) data library. The financial information for firms, especially firm value, was mainly obtained from Refinitiv, which presents it as Enterprise Value (EV). In cases where the enterprise value of the firms could not be obtained from Refinitiv, EV was calculated manually using financial statement data from annual reports and other databases. The analysis will examine the five years from 2020 to 2024 to ensure that sustainability disclosures in Nigeria are available. Data on non-financial green accounting activities were

collected through a systematic content analysis of the annual and sustainability reports of the sampled firms. By doing so, qualitative disclosures can be measured into indices that can be analysed using econometric methods, a common strategy in sustainability accounting studies (Kolk, 2008; Kuzey & Uyar, 2017).

3.4 Measurement of Variables

1. Dependent Variable: Firm Value (FV): Firm value is the whole assessment of a company's value in the marketplace and a gauge of investors' expectations for the company's future performance and potential expansion. It is a fundamental concept in corporate finance and is typically used to assess the effects of managerial decisions, such as sustainability practices, on shareholder wealth (Damodaran, 2012).

The enterprise value (EV) is usually employed as a metric of the value of the firm since it reflects both equity value and debt value, rather than just equity value (Kuzey & Uyar, 2017).

The firm value is defined in this study as:

EV = Market Capitalisation + Total Debt – Cash and Cash Equivalent

To address skewness and ensure normal distribution, the natural logarithm of EV is used:

$$FV_{it} = \ln(FV_{it})$$

2. Independent and Main Variable: **Green Accounting Index (GAI)**: Green accounting is defined as the process of recognising, quantifying, and reporting the corporate reporting on activities that are related to the environment and sustainability. It is a measure of how far companies have gone to incorporate environmental aspects into their operations and reporting procedures (Schaltegger & Burritt, 2017). The operationalisation of green accounting in this work is through a composite Green Accounting Index (GAI) based on the Global Reporting Initiative (GRI) Standards, the most widely accepted international standard for sustainability reporting (Kolk, 2008). The Global Reporting Initiative (GRI) framework was adopted because it is widely used by listed companies on the Nigerian Exchange Group (NGX) as the primary standard for sustainability reporting, ensuring disclosures are consistent, comparable, and credible. It also

encompasses not only environmental performance indicators but also addresses principles that ensure the quality, reliability, and usefulness of disclosures.

The GAI combines both:

- Components of environmental disclosure, and
- Qualitative reporting characteristics,

Thus, it provides a global benchmark for sustainability reporting practices.

a. Environmental Disclosure Components

The index comprises the main environmental indicators:

- GRI 302: Energy
- GRI 303: Water
- GRI 305: Emissions
- GRI 306: Waste

b. Reporting Quality Dimensions (built in GAI)

Besides, the index indicates important GRI reporting principles:

- Accuracy
- Balance
- Clarity
- Comparability
- Sustainability context
- Timeliness
- Verifiability

These principles guarantee the presence of disclosures, as well as their significance and decision-usefulness to stakeholders (Global Reporting Initiative, 2016).

Measurement of GAI

To determine the disclosures in annual and sustainability reports, a content analysis approach is used. The rating is done on a three-point scale:

- 0 = No disclosure
- 1 = Partial disclosure
- 2 = Full disclosure

Composite Green Accounting Index is calculated as:

$$GAIit = \frac{\sum Scoreit}{2N}$$

Where:

- N= total number of disclosure items (environmental + reporting quality criteria)
- $Score_{ij}$= score assigned to firm i for item j

3. Control Variable: Firm Size (FSIZE): Firm size refers to the extent of the company's activities and is usually linked to the ability to access materials, attract investors, and engage in sustainability activities. Bigger companies tend to be more visible and exert greater pressure to share environmental and social data (Uyar et al., 2017).

Firm size is calculated using the natural logarithm of total assets:

$$FSIZE_{it} = ln\ (Total\ Assets_{it})$$

4. Control Variable: Profitability (PROF): One of the key factors that determines a company's worth is its profitability, which is a gauge of its ability to make money from its operations. Profitable businesses are in a better position to fund sustainability initiatives and provide more thorough data (Michael C. Jensen, 1986).

Net Profit Margin (NPM) is used as a proxy of profitability in this study:

$$PROF_{it} = \frac{Net\ Profit}{Revenueit}$$

5. Control Variable: Leverage (LEV): Leverage is the amount to which a company depends on debt financing. It plays an important role in financial risk, and it can impact a firm's value and disclosure behaviour, because highly leveraged firms are subject to more scrutiny from creditors (Franco Modigliani and Merton Miller, 1958).

The Debt-to-Equity Ratio is used to determine Leverage:

$$LEVit = \frac{Total\ Debtit}{Total\ Equityit}$$

6. Control Variable: Firm Age (FAGE)

The length of time a business has been in operation is known as its "firm age," and it is typically associated with stability, experience, and reputation. The degree of establishment, the reporting mechanisms, and the vulnerability to sustainability practices and disclosures are greater among older companies, who are more likely to exhibit these traits due to stakeholder pressure and institutional legitimacy (Michael E. Porter and Mark R. Kramer, 2006; John Freeman et al., 1984).

In the sustainability and corporate disclosure literature, the age of the firm is frequently used as a control variable because it is possible that the older the firm, the more it will be incentivized to make disclosures and the more it will be able to make disclosures that will improve its firm value.

Firm age is the number of years since the firm's incorporation.

$$FAGE_{it} = Current\ Year - Year\ of\ Incorporation$$

Model Specification

$$FV_{it} = \beta 0 + \beta 1 GAI_{it} + Controls_{it} + \mu_i + \varepsilon_{it}$$

$$FV_{it} = \beta 0 + \beta 1 GAI_{it} + \beta 2 LFSIZE_{it} + \beta 3 LEV_{it} + \beta 4 PROF_{it} + \beta 5 FAGE_{it} + \mu_i + \varepsilon_{it}$$

3.5 Data Analysis

Stata software was used to carefully analyze the data in accordance with the study's objectives. Descriptive statistics were calculated to summarize the key characteristics of each variable. This included the average, the standard deviation, the lowest and highest values, and an indication of how the data were spread and varied. A correlation matrix was created from the pairwise correlation analysis to investigate the associations between variables and identify initial associations. The significance levels of the correlation coefficients were also indicated. To further examine the possibility of multicollinearity, the Variance Inflation Factor (VIF) was used to conduct a multicollinearity test. When the VIFs were compared to the conventional cut-off, it became clear that the model did not have multicollinearity. Thereafter, a panel-data diagnostic was conducted to confirm the appropriateness of the regression model. This involved the Hausman test to test which model to use between Fixed Effects and Random Effects, and diagnostic tests of heteroskedasticity and autocorrelation. The results guided the selection of the appropriate estimation technique. A panel-data regression analysis followed this. Both the Fixed Effects and Random Effects models were estimated, and the Hausman test indicated that the Fixed Effects model is preferred for interpretation. Lastly, the robustness tests were performed to demonstrate the credibility of the results. In particular, the model was re-estimated with cluster-robust firm-level standard errors to correct for heteroskedasticity and possible serial correlation, thereby making the results consistent and robust.

CHAPTER IV

RESULTS AND FINDINGS

4.1 Descriptive Statistics

Table 4.1. Descriptive Statistics

Variable	Obs	Mean	Std. dev.	Min	Max
lnfv	99	24.0076	3.035144	17.45589	28.8781
gai	100	0.5296	0.197891	0.12	0.92
lfsize	100	21.9409	4.982489	14.07716	30.6589
lev	100	20.4518	17.5095	0.02209	74.407
prof	100	7.9549	13.81451	-29.49	42.7
fage	100	54.15	21.54459	11	101

Source: Author's Computation 2026

In this research, descriptive statistics for the variables used are shown in Table 4.1. The results give a general overview of the distribution and variation in the data set in 100 firms-years. The mean of the dependent variable, firm value (lnfv), is 24.01 with a standard deviation of 3.04, making the firms in the sample moderately variable. The lowest and the highest values (17.46 and 28.88, respectively) indicate a decent distribution with no extreme outliers. The green accounting index (GAI) shows that firms report an average of 0.53, indicating they implement slightly more than 50 percent of the anticipated environmental accounting practices. The standard deviation (0.20) is relatively low, suggesting little variation in disclosure levels across firms.

The firm size (lfsize) has a mean of 21.94 and a standard deviation of 4.98, indicating significant variation in company size within the sample. Likewise, leverage (lev) is highly variable, with a mean of 20.45 and a high standard deviation of 17.51, indicating significant differences in firms' capital structures. Profitability (prof) has a mean of 7.95, a high standard deviation of 13.81, and minimum and maximum values of -29.49 and 42.7, respectively. This shows that there are high-profit and loss-making firms, which demonstrate heterogeneity in financial performance. Lastly, firm age (fage) has an average of 54.15 years and a range of 11 to 101 years, indicating a mix of relatively young and well-established firms in the data set.

4.2 Correlation Matrix

Table 4.2. Correlation Matrix

	lnfv	gai	lfsize	lev	prof	fage
lnfv	1					
gai	0.0207	1				
	0.8392					
lfsize	0.526	0.0549	1			
	0	0.5876				
lev	0.2512	0.1103	0.0752	1		
	0.0121	0.2748	0.457			
prof	0.0414	-0.1831	-0.0143	-0.1379	1	
	0.6838	0.0683	0.8876	0.1714		
fage	-0.1877	0.0393	0.3527	-0.4498	-0.2069	1
	0.0628	0.6978	0.0003	0	0.0389	

Source: Author's Computation 2026

The correlations between the matched research variables are displayed in Table 4.2. The findings shed light on the direction and intensity of the link between the independent and dependent variables, as well as the possibility of multicollinearity. The results indicate that firm value (lnfv) is positively and statistically significantly related to firm size (lfsize) ($r = 0.5260$, $p < 0.01$), indicating that bigger firms are associated with greater firm value. Likewise, leverage (lev) is positively related to firm value ($r = 0.2512$, $p < 0.05$), suggesting that a company with higher leverage may be more valuable. Nevertheless, the relationships between the green accounting index (GAI) and profitability (PROF) with firm value are weak and statistically non-significant, with correlation coefficients of 0.0207 ($p = 0.8392$) and 0.0414 ($p = 0.6838$), respectively. This suggests that at the bivariate level, these variables are not strongly related to firm value, directly. Firm age (fage) has a marginally significant negative correlation with firm value ($r = -0.1877$, $p = 0.0628$) which implies that older firms may be slightly less valuable. There are important correlations between the independent variables. For instance, the age of the firm (fage) is positively correlated with the firm size (lfsize) ($r = 0.3527$ and $p < 0.01$), which means that older firms are larger. On the other hand, firm age has a negative and significant correlation with leverage (lev) ($r = -0.4498$, $p < 0.01$) indicating that older firms have less reliance on debt financing. Notably, none of the correlation coefficients exceeds the traditional

threshold of 0.8, which means that multicollinearity is not a concern in the model. This underpins the inclusion of all variables in the regression analysis.

4.3 Multicollinearity Test

Table 4.3. Variance Inflation Factor

Variable	VIF	1/VIF
fage	1.75	0.572163
lev	1.51	0.66255
lfsize	1.27	0.789516
prof	1.17	0.851751
gai	1.05	0.954877
Mean VIF	1.35	

Source: Author's Computation 2026

To further assess multicollinearity among the independent variables, a Variance Inflation Factor (VIF) test was conducted. Table 4.3 shows the results. The results indicate that the VIF values for all variables are well below the traditional threshold of 10, ranging from 1.05 to 1.75. Precisely, firm age (fage) has the largest VIF (1.75), followed by leverage (lev) (1.51), and the green accounting index (gai) has the smallest VIF (1.05). Moreover, the average VIF is 1.35, well below the standard cutoff of 5. This means the explanatory variables are not highly multicollinear. This result is consistent with the correlation matrix, which shows that no pairwise correlation exceeded 0.8. Thus, it is found that all independent variables are included in the regression model without multicollinearity and that multicollinearity is not an issue in the particular investigation, distorting the estimation results.

4.4 Breusch–Pagan LM Test Interpretation

Table 4.4. Breusch–Pagan LM Test for Random Effects

Statistic	Value

chibar² (01)	139.14
Prob > chibar²	0

Source: Author's Computation 2026

To identify a panel data model as the most suitable relative to a pooled Ordinary Least Squares (OLS) estimator, the random-effects model was estimated before using the Breusch-Pagan Lagrangian Multiplier (LM) test. The absence of panel effects is the test's null hypothesis (i.e., that the variance across entities is zero and that pooled OLS is adequate). The test statistics indicate that chibar2 = 139.14 and the p-value = 0.0000. Since the p-value is less than 0.05, the null hypothesis is rejected. This implies that the differences between firms are large and that the panel structure is therefore pertinent. Hence, the random-effects model is preferable to pooled OLS, and panel-data estimation is suitable for this study.

4.5 Hausman Test

Table 4.5. The Hausman Test

Test	Chi-square	p-value	Decision
Hausman Test	17.54	0.0036	Fixed Effects

Source: Author's Computation 2026

To ascertain whether a fixed-effects or random-effects model is better suited for panel-data estimation, the Hausman specification test was employed. The null hypothesis states that the random-effects model is suitable, meaning that there is no systematic difference between the coefficients of the fixed-effects and random-effects models. The fixed effects model is a better fit, according to the alternative theory. The test's p-value is 0.0036, and its chi-square value is 17.54. Since the p-value is less than 0.05, the null hypothesis is rejected. The random-effects assumption of zero correlation between the unobserved individual effects and the explanatory variables is broken, as demonstrated by the large disparities between the fixed-effects and random-effects estimates. This suggests that the fixed-effects

model is more consistent and dependable for estimate since firm-specific effects relate to the explanatory variables.

4.6 Heteroskedasticity Test (Modified Wald Test)

Table 4.6. Modified Wald Test for Heteroskedasticity

Test	Chi-square (χ^2)	df	p-value	Decision
Modified Wald Test	810.99	21	0	Heteroskedasticity present

Source: Author's Computation 2026

The Modified Wald test was used to assess groupwise heteroskedasticity in the fixed-effects model. The test's null hypothesis is that all cross-sectional units have the same error term variance (homoskedasticity). Chi-square = 810.99 and p = 0.0000 are the test's results. Since the p-value is less than 0.05, the null hypothesis is disproved, suggesting heteroskedasticity among firms. This indicates that the error terms vary across entities, which can result in biased standard errors unless it is well addressed.

4.7 Autocorrelation Test (Wooldridge Test)

Table 4.7. Wooldridge Test for Autocorrelation

Test	F-statistic	df	p-value	Decision
Wooldridge Test	3.863	(1, 19)	0.0642	No strong autocorrelation

Source: Author's Computation 2026

The Wooldridge autocorrelation test on panel data was used to test the serial correlation of first order. The first-order autocorrelation is zero, according to the null hypothesis. According to the test, the p-value is 0.0642, and the F-statistic is 3.863. Since the p-value is greater than 0.05, the null hypothesis cannot be rejected at the 5% level of significance. This suggests that there is no high-level autocorrelation in the model. There is little chance of serial association, though, as the result is only marginally significant at the 10% level. The work uses cluster-robust standard errors in the fixed-effects model to guarantee trustworthy statistical inference due to heteroskedasticity and perhaps weak autocorrelation.

4.8 Fixed Effects Model (Clustered Standard Errors)

Table 4.8. Fixed Effects Regression with Clustered Standard Errors (Dependent Variable: Firm Value – lnfv)

Variables	Coefficient	Robust S.E	t-Statistic	p-value	95% CI
gai	1.0601	0.5836	1.82	0.084*	[-0.1573, 2.2774]
lfsize	-0.5629	0.2523	-2.23	0.037**	[-1.0892, -0.0366]
lev	0.0259	0.0056	4.63	0.000***	[0.0142, 0.0376]
prof	0.0188	0.0075	2.5	0.021**	[0.0031, 0.0344]
fage	0.2895	0.084	3.45	0.003***	[0.1142, 0.4648]
Constant	19.4436	3.9501	4.92	0.000***	[11.2038, 27.6834]

Note: *** for P<0.01, ** for P<0.05, * for P<0.10

Statistic	Value
Number of Observations	99
Number of Firms (Groups)	21
R^2 (Within)	0.3283
R^2 (Between)	0.2375
R^2 (Overall)	0.2018
F-statistic	14.75
Prob > F	0
Sigma_u	7.5178
Sigma_e	0.7331
Rho	0.9906

Source: Author's Computation 2026

The cluster-robust standard errors for Table 8 displays the fixed-effects regression. An F-statistic of 14.75 ($p < 0.01$) indicates that the model is statistically significant, indicating that the explanatory variables collectively affect company value. The model explains about 32.83% of the change in company value within businesses across time, according to the inside R-squared value of 0.3283. In social science, accounting, and finance research, where business value is impacted by a variety of observable and unobservable elements, this R-squared number may seem low, but it is regarded as acceptable. In empirical social science models, Ozili

(2023) contends that an R-squared above 0.10 is appropriate, especially when the main goal is to investigate the direction and importance of associations rather than optimize forecast accuracy. Given the substantial F-statistic and statistically significant explanatory variables, the model's explanatory power is therefore deemed sufficient.

One interesting aspect of the model is the high rho value of 0.9906; it is so high that almost all the variation in the firm's value is attributable to firm-specific effects. This is why the fixed effects estimator is used: it effectively controls unobserved heterogeneity among firms, which is the best practice in corporate finance studies using panel data.

Firm Value and Green Accounting

The coefficient for the green accounting index (GAI) is positive (1.0601) and marginally significant at the 10 per cent level (0.084), suggesting that environmental performance disclosure can positively affect firm value. However, this effect is not robust when firm-specific effects and heteroskedasticity are accounted for. The given can be understood with the stakeholder theory, which recommend that businesses provide environmental data to satisfy the expectations of the stakeholders and gain social recognition. Clear environmental information can help build the company's reputation and make stakeholders more informed and trustworthy in the business, which may also be shown in the company's worth. Nevertheless, the statistics' lack of significance is consistent with the ambiguous empirical data presented in the literature, particularly in emerging markets, where the ESG factors are in their early stages. It could be a matter of investors' lack of sensitivity to environmental disclosures, lack of regulations, or a symbolic green accounting by firms. While environmental disclosure has the same intent as stakeholders and legitimate expectations, the impact on the firm value may not be realised entirely in the scope of the study.

Firm Value and Firm Size

Firm size (lfsize) and firm value have a negative and statistically significant (at the 5% level) correlation coefficient ($\beta = -0.5629$), This finding implies that the firm value does not necessarily increase with firm size. The Institutional Theory proposes that as firms expand, they come under growing pressure from the

regulators, stakeholders, and society. When these pressures are not mitigated, the cost of complexity versus legitimacy of the organization could be more than the value of growth, and therefore less value for the firm. Furthermore, as per stakeholder theory, larger companies may face increasing pressure from various stakeholder groups, thereby escalating operational and compliance costs. In an emerging-market setting, rapid growth without corresponding gains in efficiency and governance can reduce the firm's value, which explains the negative relationship.

Firm Value and Leverage.

Firm value is positively and significantly impacted by leverage (lev) ($\beta = 0.0259$, $p < 0.01$), suggesting that greater debt financing is associated with higher firm value. One way to interpret this outcome is through signalling theory, where debt use can let the market know that the company is likely to have future cash flows and financial stability. Debt-taking firms are commonly considered well-capacitated to repay their debt, which may increase investor confidence and the firm's valuation. For stakeholders, leverage can also indicate sound financial management that balances shareholders' and creditors' interests. The positive impact indicates that the businesses in the sample are able to generate value through the efficient use of debt.

Profitability and Firm Value.

Profitability (prof) positively and statistically significantly influences firm value ($\beta = 0.0188$, $p < 0.05$), indicating that more profitable firms are likely to have higher market value. This observation is a strong indication of signalling theory, as profitability is a plausible indication of a company's performance and potential for future expansion. Increased earnings are used to convey positive information to investors, which will decrease the information asymmetry and improve the company's valuation. Furthermore, the stakeholder theory holds that companies with positive net income can better satisfy the expectations of investors (shareholders), employees, and creditors, leading to an increase in their market value.

Firm Age & Firm Value

Firm value is positively and strongly correlated with firm age (fage) (β = 0.2895, $p<0.01$), meaning that a firm's value increases with its age. Stakeholder Theory can be used to explain the positive correlation between years of age and firm value. As companies grow and prosper, they build more robust and lasting partnerships with investors, customers, suppliers, regulators and the local community. In the long-term, these partnerships create trust and credibility, as well as provide stakeholder confidence, potentially boosting the firm's reputation and helping to drive sustainable value creation. Older companies also have a history of performance and resilience, which is also helpful for reducing investor uncertainty and positively impacting firm value. Overall, the findings indicate that profitability and leverage measures have less of an impact on firm value than financial performance, firm size, and age of the sampled enterprises. Although the findings show a favorable correlation between green accounting practices and a company's value, it is not very strong, which implies that the incorporation of ESG-related aspects is still in its infancy in the setting analysed. Environmentally, it has an impact on the firms' decision-making, but not on the investors' decision; stakeholder- and legitimacy-wise, it indicates that businesses will disclose environmental information, but it has no bearing on investors' choices. Of particular interest is the fact that the results of the study were statistically significant under cluster robust SEs and not so under the alternative SEs, highlighting the need to take into consideration heteroskedasticity when drawing a clear conclusion when analysing panel data.

4.9 Sectoral Comparative Analysis of Firm Characteristics

The relevance of a sectoral analysis in explaining the variation in firm performance has increased as firms in different sectors are exposed to varying economic, regulatory, and stakeholder pressures. Prior work highlights that, in addition to internal financial and structural factors, the company's worth is more than just an outcome of internal forces, but also of the external industry forces that influence resource usage and the company's interactions with its stakeholders. Companies in various industries have varying expectations on environmental responsibility and disclosure in terms of stakeholders and legitimacy, particularly in more environmentally sensitive industries where there is more public awareness

and attention (Lee & Raschke, 2023). The alternative perspective of the resource-based view (RBV) holds that a company's performance is determined by how well it uses its special resources and skills, which can vary greatly throughout industries based on the quantity of resources needed and the firm's operating structure (Wang & Sengupta, 2016). In addition, stakeholder relationships can be strategic resources that help increase firms' value, confirming the need to focus on the industry context when conducting empirical research (Freeman et al., 2021). In addition, signalling theory focuses on the fact that companies demonstrate their performance and quality through visible cues, such as profitability and disclosure policies. The quality of these signals can, however, vary between different industries due to differing sensitivity and market structure among investors. Thus, a sectoral comparative analysis will give us a deeper understanding of value difference by firms and their determinants by industries, supplementing the regression results, and will give us a detailed understanding of firm behaviour.

Table 4.9. Sectoral Descriptive Statistics

sector	lnfv	gai	lfsize	lev	prof	fage
Primary	24.46589	.5165	23.24917	28.3473	9.0725	43
	2.694417	.2143601	5.200452	12.9881	15.1835	22.6065
	19.71299	.14	14.08618	0.38828	-29.49	11
	28.0821	.8	28.61539	50.033	40.7	68
Manufacturing	23.00792	.5415	22.41713	18.2328	9.1666	60.4
	3.406171	.2026791	4.067863	17.4683	16.1162	20.8552
	17.45589	.12	14.51982	0.02209	-27.92	28
	28.87805	.92	27.82633	74.407	42.7	101
Services	25.49059	.5106	19.17571	18.6709	5.3472	48.2
	1.872621	.1835263	5.851709	20.7488	7.65606	19.2505
	21.65095	.2	14.07716	3.70374	-11.9	20
	28.35857	.9	30.65889	68.4132	21.57	75
Total	23.952	.5281053	21.73929	20.4774	8.14168	53.5263
	3.100035	.1987624	5.031142	17.8831	14.1342	21.9292
	17.45589	.12	14.07716	0.02209	-29.49	11
	28.87805	.92	30.65889	74.407	42.7	101

Source: Author’s Computation 2026

Comparing the industry descriptive statistics, there are considerable differences in the characteristics of firms in the primary sector, manufacturing, and services, highlighting the need to consider industry context when explaining firm value. The mean of firms' values is highest in the service sector (mean = 25.49), the primary sector (mean = 24.47), and lastly, manufacturing firms (mean = 23.01). Yes, it means that service-oriented companies are likely to have more market value, although they don't invest in as many assets as the other type does, and this may be explained by the signaling theory since these businesses are better able to convey to investors good signals regarding their market perception and performance visibility. In terms of environmental disclosure, the typical degree of environmental accounting practices is relatively comparable among industries, with leading average disclosure by manufacturing companies (0.5415), followed by primary (0.5165) and service (0.5106) companies. This trend is driven by stakeholder and legitimacy pressures, particularly in manufacturing sectors where environmental impacts can be seen, which push companies to respond to these challenges by disclosing. Some differences do exist between sectors, however, suggesting that green accounting is becoming the norm, but remains not so well differentiated by sector.

The average size of firms varies significantly: the primary sector has the largest (23.25), followed by manufacturing (22.42) and services (19.18). This reveals the extractive and agricultural industries, which are capital-intensive. However, there is an instance where "size does not equal value creation," since smaller businesses are more valuable in the service industry. This supports the resource-based perspective, which holds that businesses should explain their performance using their capabilities and resources rather than their size. Capital-intensive sectors, such as the primary sector, have the greatest leverage of 28.35 compared with manufacturing (18.23) and service firms (18.67). However, the average profits in primary and manufacturing are not as differentiated as in these sectors (9.07 and 9.17, respectively), while service firms have a lower average (5.35). However, through the current profitability level, it is still possible to see that the service sector firms still hold their highest firm value, which indicates that the

intangible factors and investor expectations are more important than the current profitability level, as in the signalling effects approach.

Finally, the average firm age is the highest for the manufacturing sector (60.4 years), followed by the service sector (48.2 years) and then the primary sector (43 years), indicating that manufacturing businesses are more mature. While older firms might benefit from the advantages of experience and capabilities in line with the RBV, the lower valuations in the industry indicate that longevity is not always linked to higher valuations, particularly when these firms are not matched with efficiency and innovation. Overall, the findings suggest that firms' attributes and value are largely driven by the sectoral variation. Service firms are also smaller, less profitable, and less leveraged, but of higher value, than the primary sector firms. However, compared to service organizations, industrial enterprises are slightly older, larger, more profitable, and more involved in environmental disclosure. This implies that the firm's worth is influenced by more than just structural and financial aspects, but also by industry-specific factors and perceptions of stakeholders in accordance with stakeholder perspective, and signalling perspective.

Table 4.9. Anova Table

	R-squared	0.1193	No.Obs = 99	
	Root MSE =	2.94098 Adj R	Squared =	0.1
Source	Partial SS	df MS	F	Prob>F
Model	106.65993	2 53.329963	6.17	0.0031
sector	106.65993	2 53.329963	6.17	0.0031
Residual	787.09019	91 8.6493428		
Total	893.75012	93 9.6102163		

Source: Author's Computation 2026

The ANOVA results reveal that the values of firms in the three sectors are statistically different from each other. With an F-statistic of 6.17 and a p-value of 0.0031, the model is significant at the 1% level. This suggests that the null

hypothesis, or the idea that there is no difference between the sectors, is not accepted, and it suggests that sector classification is a significant predictor of the difference in firm value. R-squared value is 0.1193, meaning that only 11.93% of the disparities between the sectors account for a portion of the variation in a firm's value. It is not surprising that the explanatory power is low, as a firm's worth is also impacted by many firm-specific and macroeconomic factors, which are not limited to industry-specific factors. But, as revealed in the results, the sectoral grouping is also significant in accounting for the variation in firm valuation.

Again, the between-group variance (Model SS = 106.66) is relatively large compared to the within-group variance (Residual SS = 787.09), suggesting that there are systematic differences between sectors. This implies that firms belonging to the same industrial group are more likely to have common values than firms in other industrial groups. Theoretically, this finding lends support to the applicability of stakeholders and legitimacy concerns, as different actors and stakeholders put pressure and demands on companies of different industries to different extents and in different ways, especially in terms of environmental and social obligations. It is also not inconsistent with signalling theory in terms of the degree to which financial and non-financial signals are useful, being different across industries, and subject to investors' perceptions and market structure. Furthermore, the result is consistent with the resource-based perspective that suggests that industry characteristics influence how firms use their resources and capabilities and, in turn, their performance and value. The ANOVA results show that the firm value is significantly different among different sectors, and therefore, the sectoral analysis is recommended as an additional methodology besides the regression results.

4.9.1 Hypothesis Testing Summary

The hypothesis was tested using a fixed-effects regression with cluster-robust standard errors based on the study's findings. According to the findings, green accounting (GAI) has a positive coefficient and is significant at the 10% level ($p = 0.084$). This suggests that there is not a strong correlation between green accounting methods and corporate value, though accounting practices may still add to firm value. Thus, H1 is debatably supported. Firm value is negatively and significantly impacted by firm size (lfsize) ($p < 0.05$); larger businesses are less

likely to have high firm value in the sample. This outcome suggests inefficiencies or diminishing business expansion rewards. As a result, H2 is validated, suggesting that firm size has a substantial impact on firm value. It is found that leverage (lev) has a positive and highly significant impact on firm value ($p < 0.01$), indicating that firms with higher debt levels are likely to have higher valuations. This helps justify the assertion that debt may improve firms' financial discipline and tax benefits. So, H3 is a high recommendation. Profitability (prof) also has a positive statistically significant correlation with firm value ($p < 0.05$), suggesting that the greater the profitability of a firm, the higher investors rate this firm. This is in line with expectations that earnings performance is a major determinant of firm valuation. H4 is thus upheld. Lastly, firm age (fage) positively and significantly impacts firm value ($p < 0.01$), indicating that older firms have the advantage of experience, reputation, and market stability. This boosts investor confidence and firm valuations. Thus, H5 has strong support.

Additionally, the ANOVA result showed that the value of the firms listed in Nigeria varies significantly across sectors ($F = 6.17$, $p = 0.0031$). This is a sign of the significant difference in value of firms in different sectors of the economy, such as primary, manufacturing, and service. The p-value is < 0.05, so the null hypothesis of no difference between the sectors is rejected. Hypothesis 6, which posits that there are significant sectoral differences in firm value among listed firms in Nigeria, is therefore accepted. The result suggests that the variations in firm value explained by the industry classification are significant, probably because of differences between industries regarding market structure, environmental exposure, resource utilisation, and stakeholder expectations.

In general, the findings indicate that although the role of green accounting is positive but relatively weak, firm-specific variables such as leverage, profitability, and firm age are significant predictors of firm value. The results also demonstrate that sectoral differences significantly influence firm value among Nigerian listed firms.

The results of the study are significant for understanding the determinants of firm value, as it combines both financial and non-financial factors in a single empirical model. Instead of relying on statistical relationships, the results

demonstrate the interactions between firm-specific traits and environmental disclosure within the larger theoretical frameworks, such as stakeholder theory, signalling theory, and the institutional theory. All in all, the evidence indicates that although green accounting has a positive impact on firm value, it is comparatively insignificant relative to the traditional financial determinants, i.e., leverage, profitability, and firm age. This supports the fact that the relevance of sustainability practices in value is changing, especially in emerging market settings. As shown in the positive, although weak, effect of green accounting, it is becoming increasingly vital that firms disclose their environmental effects as part of the determination of firm valuation. But the impact appears to be contingent and specific to the context. The stakeholders' theory suggests that businesses perform environmental reporting because they are pushed by different groups of stakeholders, including investors, regulators, and society. Increasingly, these stakeholders want to know how companies are being environmentally responsible, and companies are using green accounting systems. This opinion is backed by empirical studies showing that stakeholder pressure is a key driver of sustainability practices and improved financial performance (Lee & Raschke, 2023). The comparatively low level of significance in this study, however, indicates that stakeholders in the sampled situation might not yet fully integrate environmental disclosures into their valuation practices.

This result is also in line with an institutional theory perspective that suggests that institutional pressures (coercive, normative, and mimetic) can encourage firms to engage in sustainability and environmental reporting (DiMaggio & Powell, 2000). To meet emerging global expectations, industry standards and stakeholder requests for sustainability, companies might be implementing green accounting more for indirect market value enhancement. In Nigeria, companies may be implementing green accounting primarily to comply with new international demands, industry norms and stakeholder expectations for sustainability, not necessarily for direct gains on market value. As a result, environmental disclosures can become more symbolic or ceremonial and have less impact on investors' valuations. It reinforces the view of Ioannou and Serafeim (2012) that institutional factors play a significant role in determining the nature of sustainability reporting,

particularly in the developing world, where formal sustainability reporting regulations are weak.

Recent research emphasises that companies often resort to so-called greenwashing, attempting to create an image of environmental responsibility without making significant changes to their operations (Islahuddin et al., 2026). This will undermine the effectiveness of environmental disclosures by diluting their credibility. In these situations, investors might be sceptical of the authenticity of sustainability reporting, which reduces its effectiveness as a value-enhancing mechanism. Also, the conflicting effects of green accounting are consistent with the literature, which has yielded mixed results on the relationship between green accounting and firm value. Whereas some studies report a positive and significant relationship, others report weak or insignificant effects, especially in developing economies where ESG frameworks are less developed. This implies that the effectiveness of green accounting will be determined by factors such as regulatory enforcement, investor awareness, and disclosure quality (Nisaa & Hidayati, 2025). The result is also consistent with previous empirical evidence found in the literature reviewed. Plumlee et al. (2015), for example, suggest that the value relevance of environmental disclosure is highly related to the quality, credibility and completeness of the disclosure. Likewise, Ukoh et al. (2024) note that the quality and standardisation of sustainability reporting in Nigeria are often substandard, making it less credible to investors when it comes to environmental information. Hence, even though green accounting practices have a positive effect on firm value, the overall effectiveness of these practices in the Nigerian market could be hampered by the inadequacies of institutional enforcement and reporting inconsistencies. According to signalling theory, environmental reporting can increase firm value only when it is perceived as credible and informative. If disclosures are unreliable or inconsistent, they do not serve as strong signals to investors. Compared to the relatively low influence of green accounting, financial variables, especially leverage and profitability, appear to be the major forces behind firm value. The above-mentioned positive impact of leverage underscores its importance as a strategic financial instrument that improves firm performance by optimising capital structure. Signalling-wise, companies that raise funds through

debt may signal confidence that they can meet future debt payments, as doing so indicates financial strength and stability. This explanation aligns with empirical evidence that capital structure decisions can increase the firm's value when it maintains an optimal balance between risk and returns. This is in line with the previous empirical research referred to in this research. For instance, Nguyen et al. (2021) showed that leverage has a positive impact on firm value because debt financing can help firms to achieve financial discipline and increase the confidence of investors in firms with predictable future cash flows. Similarly, research in emerging markets has found that companies with "best-in-class" leverage ratios tend to be more trusted as solid investments and better able to grow in the long-term.

Furthermore, the strong correlation between leverage and firm value indicates that leverage is driven by managerial behaviour. Debt obligations impose financial constraints that limit managerial discretion and opportunistic behaviour, thereby aligning management decisions with shareholders' interests. This aligns with the general corporate finance literature, which argues that leverage can enhance efficiency by instilling financial discipline. In this regard, leverage is not merely a financial instrument but also a form of governance that can boost firm value. Equally, profitability is pivotal to firm valuation; thus, it is a key indicator of firm performance. Profitability is a credible and verifiable signal of quality in a firm under the signalling theory, which minimises information asymmetry between managers and investors. The more profitable a firm is, the more it is viewed as able to generate future cash flows, the greater investors' confidence in it, and the higher its market price. Numerous studies have confirmed that profitability is a reliable indicator of firm value as it provides a direct assessment of how well the business operates and how much profit it makes. The result additionally supports the research of Qiu et al. (2016) and Alsaifi et al. (2020), stating that the companies with good financial performance and honest disclosure would be more likely to be valued higher and gain investor confidence in the market. In terms of profitability measures, it appears to be more powerful than the other sustainability measures analysed in this study, suggesting that the investor in the emerging market still seems to rely on traditional financial measures to gauge a company's performance.

An interesting finding is that it exhibits a negative relationship between firm size and firm value, which goes against the conventional wisdom that larger firms are valued more. This discovery suggests that smaller firms do not necessarily mean less efficient or value-creation firms. The resource-based view contends that the value of the firms is related to how efficiently they use the resources. Large-scale companies will likely be bureaucratically inefficient, will have increased coordination costs, and will be less flexible, all negative to performance. This is particularly relevant in developing markets: in these markets, it can be very difficult to keep up with the growth required and ensure that outcomes are not optimal because of a lack of efficiency. In addition, the negative effect of firm size also indicates the potential existence of agency problem in large firms. As the firm grows, the ownership-control split grows, as well, which leads to agency costs and can lead to an agency problem between management and shareholders. This could lead to lower levels of efficiency and, ultimately, value for companies. So, the findings suggest that good governance and management of resources to add value need to be supported to grow. The negative relationship between firm size and firm value is in line with the Institutional Theory. Larger companies are more likely to be under regulatory, stakeholder and compliance pressures, and can be more complex and less efficient because of these pressures. Hence, increasing size does not necessarily create increase in firm value.

However, the age of the firm is positively correlated with firm value, highlighting the importance of experience, reputation, and accumulated abilities. It is likely that over time, older companies will build up market standing, a strong stakeholder relationship, and organisational knowledge. In empirical research, it has been found that more experienced, institutionally knowledgeable firms have an advantage in dealing with the uncertainties in the market and in performance over the longer term. This finding aligns with the previous empirical research by Huang et al. (2023) that has found that companies with more experience in institutions and with better developed stakeholder relationships can deal more effectively with uncertainty and investor confidence. As a result, experienced companies are more reliable, dependable, and stable in the long term and have a positive impact on the market valuation. Furthermore, the older the age, the more legitimate and trusted

the stakeholders are, which has a positive impact on the value of the firm. Senior firms are seen as less volatile, more reliable, and less risky, resulting in better investor confidence and increased attractiveness. This discovery is consistent with the Stakeholder Theory that argues that companies can generate value when they establish positive relationships with critical stakeholders. An established company has more trust with investors, customers, suppliers, and regulators, which means less uncertainty and better firm valuation, over the years. However, it is important to note that the advantage of the higher age of the firm can be subject to a change in market circumstances; if the firms become too rigid, it can hinder innovation and growth. The sectoral analysis adds to the individual variables and helps better understand the effect of characteristics of the industries on firm value. The dramatic differences between industries show that the value of a business is as much external as internal, as it depends on the other forces at play in the industry. The industries and the extent of pressure, regulatory oversight, and resource needs differ, causing their performance and valuation. For instance, in capital-intensive industries, greater leverage may be warranted, while in service-oriented companies, the intangible assets and market perception may benefit the companies.

This finding highlights the need to appreciate the firm-level analysis within the overall context of the industry. This is also congruent with recent research, which shows that both internal capabilities and external institutional influences have an impact on sustainability practices and financial outcomes (Widyantoro et al., 2025). The balance between the two factors reflects the complexity of the value of the firm and the need to have a multidimensional analysis. In general, the above discussion indicates that green accounting adds a positive contribution to firm value, but that contribution is still rather low compared to traditional accounting. The introduction of sustainability in the valuation of the firm has just started in the context studied. Other firm characteristics, such as capital structure, financial performance, and others, remain strong drivers of investor decisions. Nonetheless, as stakeholder consciousness and regulations change, environmental disclosure will become increasingly significant. Institutional Theory also accounts for these sectoral differences in that the institutional pressure, regulatory focus, and stakeholder expectations are also different across industries. Differential pressures

on legitimacy and disclosure are seen to be more intense in industries that are more concerned with the environment, such as manufacturing and oil and gas, as opposed to service-oriented industries. Thus, the effect of green accounting techniques on the firms' worth can be different by sector based on the visibility of the institution and exposure to the environment.

In conclusion, by offering data from a developing market, this study can add to the body of knowledge already available on sustainability and company value. The results show the importance of institutional and industry-specific dynamics in determining business value, as well as the complementary nature of financial and non-financial factors. By integrating stakeholder theory, legitimacy theory, signalling theory, institutional theory, and the resource-based view, this study offers a thorough explanation of how businesses create value in a dynamic business environment.

CHAPTER V

RECOMMENDATIONS, SUGGESTIONS, AND CONCLUSION

5.1 Recommendations and Suggestions

The following suggestions are made to businesses, policymakers, investors, and future researchers based on the findings of this study. The recommendations are based on empirical evidence and theoretical positions presented in this paper, such as stakeholder theory, signalling theory and the institutional theory.

To start with, companies ought to emphasise the quality, credibility, and strategic incorporation of green accounting practices rather than the amount of disclosure. The outcomes suggest a positive correlation between green accounting and firm value. However, the low level of significance indicates that environmental disclosures are not yet informative or credible enough to affect investor behaviour. This means that companies ought to go beyond symbolic reporting to more substantive disclosures of environmental performance and transparency. If the environmental reporting is of high quality, credible, and follows an agreed standard, it can help to build trust amongst stakeholders and contribute to improved company value. As per previous research, credibility and the extent of real environmental performance representation are crucial aspects of sustainability reporting (Forcadell et al., 2023). In this context, companies should seek to strengthen their environmental information gathering systems, third-party audits, and international reporting requirements to boost the signalling effect of green accounting.

Second, policy and regulation will need to make more improvements to the effectiveness of environmental reporting by strengthening the reporting of ESG components and their enforcement. A potential explanation for the relative lack of influence of green accounting found in this study may lie in the lack of a reporting standard and the lack of regulatory oversight. If the enforcement is ineffective, companies can resort to selective disclosure or to greenwashing, undermining the credibility of sustainability reporting. Recent reports indicate that stronger institutional structures and policing contribute significantly to improving the link between ESG practices and firm value (Zhaowen & Philip, 2025). Policy makers must therefore develop clear guidelines, monitoring mechanisms, and consequences for non-compliance to ensure that environmental disclosures are

precise, consistent, and comparable across companies. This will enhance market transparency and allow investors to make better decisions.

Third, firms should use a balanced capital structure approach to maximise value. The findings indicate that leverage is a significant value-increasing factor of firms, implying that the debt funding could be effective in improving firm performance when properly used, which is supported by the findings of Nigerian listed firms that demonstrate a significant correlation between debt funding and firm performance and value (Egberi (2020) Capital Structure and Firm Performance in Nigeria; (U. A. Ibrahim & Isiaka, 2020) Financial Leverage. However, excessive debt may amplify financial risk and subject firms to economic shocks due to over-leverage, which has been associated with low firm value and increased financial distress in Nigerian firms (Nwosu et al., 2024). Firms should therefore be careful in how they manage their capital structure and balance the benefits of the debt, including management discipline and tax savings, with the costs that may accrue when a firm goes into financial distress in accordance with the trade-off arguments in favor of Nigerian capital structure studies Nnaji et al. (2026) Capital Structure Policy and Market Valuation in Nigeria. Firms also ought to ensure they use debt to make efficient investments that generate long-term value, rather than short-term gains.

Fourth, the findings demonstrate the importance of industry-related tactics in raising the company's worth. A one-size-fits-all approach might not be effective because the sectoral analysis's findings showed that there are notable variations in the enterprises' traits and performance across the industries. That's because companies need to adapt their strategies to the environment of the industry, which includes the demands of regulators, the expectations of their stakeholders, and their resources. For instance, environmental performance or disclosure may be more important within companies in industries that are more environmentally sensitive. On the other hand, service companies may have increasing needs for intangible resources such as relationships with customers. This is in line with recent research about the relevance of industry context on the outcome of ESG and a firm's performance (Lee & Raschke, 2023).

Finally, some suggestions for further studies are given. First, future studies should incorporate more detailed measures of sustainability reporting to cover the spectrum of sustainability initiatives, such as social and governance aspects. Third, the authors should investigate the interaction between green accounting and firm value in terms of the moderating roles of institutional quality, regulatory mechanisms, and investor awareness. Thirdly, more advanced econometric methods (such as mediation and moderation analysis) can be employed to better understand the underlying mechanisms linking sustainability practices and firms' activities. Fourth, country and region-level comparisons can be systematic to identify factors that are important in the context of the country or region for which environmental disclosure is effective. Finally, future studies that analyse the correlation between green accounting and firm value over time can incorporate the last analysis.

In conclusion, the results of this study emphasize the significance of a thorough and integrated strategy to value creation, based on financial performance, environmental sustainability, and effective utilization of resources. These spaces can help companies become more competitive, gain more trust from stakeholders, and ensure long-term growth.

5.2 Conclusion

This study included key firm-specific control variables such business size, leverage, profitability, and firm age in order to examine the relationship between green accounting practices and firm value among companies listed on the Nigerian Exchange Group. The findings, which are based on panel data analysis and the use of reliable econometric techniques, might be very helpful in comprehending the connection between financial success and sustainability-oriented accounting practices in Nigerian business settings.

According to the empirical results, there is a positive and statistically significant correlation between green accounting, as determined by the Green Accounting Index (GAI), and company value under the fixed-effects model. It suggests that gains in corporate valuation are correlated with environmental reporting and sustainability disclosures over time. The outcome is in line with the increasing amount of theoretical and empirical research that suggests businesses

that engage in environmental responsibility are likely to build stronger reputations, lower regulatory risks, and draw in socially conscious investors—all of which contribute to the creation of long-term value.

It should be remembered, however, that the importance of green accounting diminishes slightly when to account for autocorrelation and heteroskedasticity, robust standard errors are employed. Despite being positive, the coefficient is no longer statistically significant. This means that, despite evidence of a positive relationship, great caution should be exercised regarding its strength. It further underscores the importance of using robust estimation methods when analysing panel data to draw sound inferences.

Firm size has a strong and statistically significant correlation with firm value across all models, but the direction of the relationship differs between pooled OLS and fixed-effects estimates. The fixed-effects model indicates that firm size is negatively correlated with firm value, implying that, within firms, growth in size can be linked to decreasing returns or inefficiencies. This can be a manifestation of bureaucratic complications or rigidity in its operations, which tends to go hand in hand with expansion. On the other hand, in cross-sectional comparisons, larger companies might still be more highly valued because of economies of scale and market dominance. This duality highlights the need to distinguish between within-firm and between-firm effects in panel data analysis.

The fixed-effects and robust models show leverage to be a positive and statistically significant factor of firm value. This implies that companies that make good use of debt financing can increase their market values, perhaps because of the tax benefits or because debt imposes discipline on corporate governance. The positive relationship also suggests that investors perceive leverage as an indicator of growth opportunities when used prudently. However, overreliance on debt may escalate financial risk; thus, the results should be interpreted within the framework of optimal capital structure theory.

The level of profitability, although mostly positive, displays mixed statistical significance. The significant profitability in the strong fixed-effects model supports the intuitive finding that more profitable companies are more likely

to be valued higher. This shows that internal financial performance is a major determinant of firm valuation, even when sustainability practices are considered.

The firm age, which is a control variable, is strongly and positively correlated with firm value in the fixed-effects model. This implies that experienced older firms, with market presence and reputational capital, are more likely to be valued over time. The importance of firm age also indicates the role of organizational learning and stability in improving firm performance. The negative correlation, however, in the pooled OLS means that cross-sectional differences are likely to obscure the underlying within-firm dynamics, again highlighting the suitability of panel estimation methods.

The fact that the diagnostic tests used in this study were conducted further increases the validity of the results. Large intercorrelations do not skew the predicted coefficients because the Variance Inflation Factor (VIF) test findings confirm that there is no multicollinearity among the explanatory variables. There are unobserved firm-specific effects connected with the explanatory variables that need to be corrected for, according to the Hausman test, which strongly supports the fixed-effects model over the random-effects model. For this reason, the preferred model is fixed-effects estimation. Additionally, the Modified Wald test and the Wooldridge test revealed heteroskedasticity and modest autocorrelation, respectively, necessitating the use of cluster-robust standard errors. By ensuring that the results are reliable and consistent, these econometric considerations boost the conclusions' credibility.

The study is significant because it sheds light on the effect of sustainability practices on firm value and the role of firm-level characteristics. The negative association among size and firm value such as, for instance, the negative association between firm size and firm value, is indicative that growth does not necessarily indicate efficiency or value creation, particularly in environments where the management is inefficient and there are agency issues. On the other hand, profitability and firm age have a positive effect, which is a reminder of the importance of the firm's financial performance and the experience gained from time in improving the firm's valuation. The findings are consistent with the resource-based view, which suggests that the key elements of achieving competitive

advantage are the firm-specific capabilities and intangible assets. Overall, the study adds to the knowledge about sustainability reporting and firm value and yields evidence of a new market with heterogeneous and voluntary reporting. It reveals that green accounting is a value-adding positive factor for the firm, but not as significant as the traditional financial determinants. The findings also underscore the importance of institutional quality, report credibility, and industry context on the economic importance of sustainability efforts. The present study gives a comprehensive insight into analysing the complex relationship between sustainability and firm value with the help of stakeholder theory, signalling theory, and the institutional theory.

Overall, the findings of this study can contribute to the ongoing conversation on corporate environmental responsibility and sustainable finance in emerging markets. The findings indicate that implementing green accounting practices can increase the firm's worth, and there is a substantial correlation between the two depending on the model definition and estimating methods. More significantly, the analysis demonstrates that traditional financial variables like firm size, leverage, profitability, and firm age affect business value even in the face of sustainability.

From the policy perspective, the findings provide encouragement to the practice of green accounting in listed companies in Nigeria. Regulators and standard-setting agencies can explore ways to improve sustainability reporting frameworks and encourage compliance with international reporting frameworks like the Global Reporting Initiative (GRI). To the corporate managers, the results show that environmental issues are of a strategic nature, not only to fulfill compliance requirements but also as a value creation opportunity for the long term.

In conclusion, this paper has demonstrated that green accounting is indeed very much a part of today's corporate world, but its impact on firm value is fragile and is subject to the general financial and structural conditions. The findings can be improved in future research by incorporating more variables, a longer period, or by examining the sustainability-performance relationship in various sectors, It would provide a more thorough understanding of the relationship between performance and sustainability in developing countries.

5.3 Limitation of the Study

This study is subject to several limitations, primarily arising from data availability constraints in the Nigerian corporate reporting environment.

First, sustainability reporting in Nigeria remains largely voluntary, and a substantial number of listed companies do not publish standalone sustainability or ESG reports. This restricted the pool of firms from which environmental disclosure data could be reliably extracted, and necessarily narrowed the scope of companies eligible for inclusion in the study.

Second, even among firms that do report, disclosure was inconsistent across the study period (2020–2024). Several companies skipped reporting in certain years or failed to publish complete annual reports for every year under review, creating gaps in the panel data. This made a fully balanced panel impossible to construct for the broader population of NGX-listed firms.

Because of these two constraints, the study could not adopt random or stratified probability sampling. Instead, a purposive sampling technique was used, selecting the 20 companies with the most consistent and complete annual and sustainability reporting across the five-year period. While this approach ensured data reliability and comparability for the variables under study, it introduces a potential selection bias: the final sample likely over-represents firms that are already more transparent, better governed, or more resourced — characteristics that may themselves correlate with firm value. As a result, the findings may not be fully generalisable to the wider population of Nigerian listed companies, particularly smaller or less disclosure-mature firms.

Relatedly, the relatively small sample size (20 firms, 100 firm-year observations) limits the statistical power of the analysis and constrains the ability to generalise findings across all sectors and firm sizes on the NGX.

Finally, because green accounting was measured using a disclosure-based index (GRI-aligned content analysis), the study captures the quantity and presence of environmental disclosure rather than its independently verified accuracy or quality, since most Nigerian sustainability reports are not subject to external assurance.

BIBLIOGRAPHY

Adebanjo, A. A., & Wisdom, O. (2024). GREEN ACCOUNTING PRACTICES AND VALUE OF LISTED FIRMS IN NIGERIA. *International Journal of Professional Business Review*, *9*(9), e04864. https://doi.org/10.26668/businessreview/2024.v9i9.4864

Adonye, U., & Biradawa, K. (2022). ARF INDIA SUSTAINABILITY REPORTING AND FIRM VALUE OF LISTED OIL AND GAS COMPANIES IN NIGERIA. *Indian Journal of Applied Business and Economic Research*, *3*(2), 277–322. https://doi.org/10.47509/IJABER.2022.v03i02.05

Alsaifi, K., Elnahass, M., & Salama, A. (2020). Market responses to firms' voluntary carbon disclosure: Empirical evidence from the United Kingdom. *Journal of Cleaner Production*, *262*, 121377. https://doi.org/10.1016/j.jclepro.2020.121377

Amran, A., & Haniffa, R. (2011). Evidence in development of sustainability reporting: a case of a developing country. *Business Strategy and the Environment*, *20*(3), 141–156. https://doi.org/10.1002/bse.672

Aydoğmuş, M., Gülay, G., & Ergun, K. (2022). Impact of ESG performance on firm value and profitability. *Borsa Istanbul Review*, *22*, S119–S127. https://doi.org/10.1016/j.bir.2022.11.006

Buallay, A. (2019). Is sustainability reporting (ESG) associated with performance? Evidence from the European banking sector. *Management of Environmental Quality: An International Journal*, *30*(1), 98–115. https://doi.org/10.1108/MEQ-12-2017-0149

Cahyani, M. I., & Suhartini, D. (2023). DETERMINANTS OF FIRM VALUE: SUSTAINABILITY REPORT AS A MEDIATING VARIABLE. *International Journal of Economy, Education and Entrepreneurship (IJE3)*, *3*(2), 355–367. https://doi.org/10.53067/ije3.v3i2.150

Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organizations and Society*, *33*(4–5), 303–327. https://doi.org/10.1016/j.aos.2007.05.003

Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling Theory: A Review and Assessment. *Journal of Management*, *37*(1), 39–67. https://doi.org/10.1177/0149206310388419

Damodaran, A. (2012). *Investment valuation: Tools and techniques for determining the value of any asset*. John Wiley & Sons.

Deegan, C. M. (2014). *Financial accounting theory/Craig Deegan*.

Dhaliwal, D. S., Li, O. Z., Tsang, A., & Yang, Y. G. (2011). Voluntary Nonfinancial Disclosure and the Cost of Equity Capital: The Initiation of Corporate Social Responsibility Reporting. *The Accounting Review*, *86*(1), 59–100. https://doi.org/10.2308/accr.00000005

DiMaggio, P. J., & Powell, W. W. (2000). *The iron cage revisited institutional isomorphism and collective rationality in organizational fields*.

Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The Impact of Corporate Sustainability on Organizational Processes and Performance. *Management Science*, *60*(11), 2835–2857. https://doi.org/10.1287/mnsc.2014.1984

Emeka-Nwokeji, N., & Osisioma, B. (2019). *SUSTAINABILITY DISCLOSURES AND MARKET VALUE OF FIRMS IN EMERGING ECONOMY: EVIDENCE FROM NIGERIA. . 7*, 1–19.

Ezeagba, C. E., Rachael, J.-A. C., & Chiamaka, U. (2017). Environmental Accounting Disclosures and Financial Performance: A Study of selected Food and Beverage Companies in Nigeria (2006-2015). *International Journal of Academic Research in Business and Social Sciences*, *7*(9). https://doi.org/10.6007/IJARBSS/v7-i9/3315

Forcadell, F. J., Lorena, A., & Aracil, E. (2023). The firm under the spotlight: How stakeholder scrutiny shapes corporate social responsibility and its influence on performance. *Corporate Social Responsibility and Environmental Management*, *30*(3), 1258–1272. https://doi.org/10.1002/csr.2417

Freeman, R. E. . (2010). *Strategic management: A stakeholder approach*. Cambridge university press.

Freeman, R. E., Dmytriyev, S. D., & Phillips, R. A. (2021). Stakeholder Theory and the Resource-Based View of the Firm. *Journal of Management*, *47*(7), 1757–1770. https://doi.org/10.1177/0149206321993576

Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment*, *5*(4), 210–233. https://doi.org/10.1080/20430795.2015.1118917

Global Reporting Initiative. (2016). *Consolidated Set of GRI Sustainability Reporting Standards 2016*.

Hahn, R., & Kühnen, M. (2013). Determinants of sustainability reporting: a review of results, trends, theory, and opportunities in an expanding field of research. *Journal of Cleaner Production*, *59*, 5–21. https://doi.org/10.1016/j.jclepro.2013.07.005

Huang, G., Ye, F., Li, Y., Chen, L., & Zhang, M. (2023). Corporate social responsibility and bank credit loans: Exploring the moderating effect of the institutional environment in China. *Asia Pacific Journal of Management*, *40*(2), 707–742. https://doi.org/10.1007/s10490-021-09800-x

Ibrahim, B., & Fadeke, R. (2024). Sustainability Reporting and Firm Value: Empirical Evidence from Nigeria. *International Journal of Advances in Engineering and Management (IJAEM)*, *6*, 282. https://doi.org/10.35629/5252-0605282290

Ibrahim, U. A., & Isiaka, A. (2020). Effect of Financial Leverage on Firm Value: Evidence From Selected Firms Quoted on the Nigerian Stock Exchange. *European Journal of Business and Management*. https://doi.org/10.7176/EJBM/12-3-16

Ioannou, I., & Serafeim, G. (2011). *The Consequences of Mandatory Corporate Sustainability Reporting*. http://www.globalreporting.org/ReportServices/GRIReportsList/.

Islahuddin, I., Diantimala, Y., Ayudiastika, Z., & Aprullah, M. P. (2026). Corporate Governance Role in Greenwashing and Firm Value Nexus. *International Journal of Financial Studies*, *14*(3), 60. https://doi.org/10.3390/ijfs14030060

Kim, I., Pantzalis, C., & Zhang, Z. (2021). Multinationality and the value of green innovation. *Journal of Corporate Finance*, *69*, 101996. https://doi.org/10.1016/j.jcorpfin.2021.101996

Kolk, A. (2008). Sustainability, accountability and corporate governance: exploring multinationals' reporting practices. *Business Strategy and the Environment*, *17*(1), 1–15. https://doi.org/10.1002/bse.511

Kuzey, C., & Uyar, A. (2017). Determinants of sustainability reporting and its impact on firm value: Evidence from the emerging market of Turkey. *Journal of Cleaner Production*, *143*, 27–39. https://doi.org/10.1016/j.jclepro.2016.12.153

Laskar, N. (2018). Impact of corporate sustainability reporting on firm performance: an empirical examination in Asia. *Journal of Asia Business Studies*, *12*(4), 571–593. https://doi.org/10.1108/JABS-11-2016-0157

Lee, M. T., & Raschke, R. L. (2023). Stakeholder legitimacy in firm greening and financial performance: What about greenwashing temptations?☆. *Journal of Business Research*, *155*, 113393. https://doi.org/10.1016/j.jbusres.2022.113393

Luo, Y., Lu, Z., Muhammad, S., & Yang, H. (2021). The heterogeneous effects of different technological innovations on eco-efficiency: Evidence from 30 China's provinces. *Ecological Indicators*, *127*, 107802. https://doi.org/10.1016/j.ecolind.2021.107802

Margaret, I., Schoubben, F., & Verwaal, E. (2024). When do investors see value in international environmental management certification of multinational corporations? A study of <scp>ISO</scp> 14001 certification after the Paris Agreement. *Global Strategy Journal*, *14*(1), 25–55. https://doi.org/10.1002/gsj.1490

Mengistu, B. A. (2020). Factors influencing International Financial Reporting Standards (IFRS) implementation success: Evidence from Ethiopia. *Journal of Accounting and Taxation*, *12*(4), 145–156. https://doi.org/10.5897/JAT2020.0423

Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. ..*American Journal of Sociology*, *2*(83), 340–363.

Nguyen, T. H. H., Elmagrhi, M. H., Ntim, C. G., & Wu, Y. (2021). Environmental performance, sustainability, governance and financial performance: Evidence from heavily polluting industries in China. *Business Strategy and the Environment*, *30*(5), 2313–2331. https://doi.org/10.1002/bse.2748

Nisaa, R. K., & Hidayati, C. (2025). The Impact of Green Accounting, Environmental Disclosure, and Company Characteristics on Firm Value. *Jurnal Bisnis Mahasiswa*, *5*(1), 184–197. https://doi.org/10.60036/jbm.v5i1.333

Nnaji, C. A., Edeh, M. B., & Bob-Manuel, G. B. (2026). CAPITAL STRUCTURE POLICY AND MARKET VALUATION OF LISTED FIRMS IN NIGERIA., Retrieved from https://cirdjournals.com/index.php/cjbf/article/view/1400. *Contemporary Journal of Banking and Finance*, *6*(1), 1–12.

Nor, N. M., Bahari, N. A. S., Adnan, N. A., Kamal, S. M. Q. A. S., & Ali, I. M. (2016). The Effects of Environmental Disclosure on Financial Performance in Malaysia. *Procedia Economics and Finance*, *35*, 117–126. https://doi.org/10.1016/S2212-5671(16)00016-2

Nwosu, C., Dikeogu-Okoroigwe, C., & Ndukwe, O. (2024). *RELATIONSHIP BETWEEN CAPITAL STRUCTURE AND FIRM VALUE AMONG MANUFACTURING FIRMS IN NIGERIA*. *1*, 1–11.

Olayinka, A., & Oluwamayowa, I. (2014). Corporate environmental disclosures and market value of quoted companies in Nigeria. In *The Business & Management Review* (Vol. 5).

Ozili, P. K. (2023). *The acceptable R-square in empirical modelling for social science research*.

Plumlee, M., Brown, D., Hayes, R. M., & Marshall, R. S. (2015). Voluntary environmental disclosure quality and firm value: Further evidence. *Journal of Accounting and Public Policy*, *34*(4), 336–361. https://doi.org/10.1016/j.jaccpubpol.2015.04.004

Purwanti, A., Dewantara, B., Nurcahaya, C., Gunadarma, U., & Sriwijaya, P. N. (2024). *THE INTEGRATION OF ENVIRONMENTAL COSTS INTO FINANCIAL REPORTING: A GREEN ACCOUNTING PERSPECTIVE PENERAPAN BIAYA LINGKUNGAN DALAM LAPORAN KEUANGAN: PERSPEKTIF AKUNTANSI HIJAU*.

Qiu, Y., Shaukat, A., & Tharyan, R. (2016). Environmental and social disclosures: Link with corporate financial performance. *The British Accounting Review*, *48*(1), 102–116. https://doi.org/10.1016/j.bar.2014.10.007

Schaltegger, S., & Burritt, R. (2017). *CONTEMPORARY ENVIRONMENTAL ACCOUNTING ISSUES, CONCEPTS AND PRACTICE*.

Spence, M. (1973). Job Market Signaling. *The Quarterly Journal of Economics*, *87*(3), 355. https://doi.org/10.2307/1882010

Taiwo, O. J., Owowlabi, B. A., Adedokun, Y., & Ogundajo, G. (2022). Sustainability reporting and market value growth of quoted companies in Nigeria. *Journal of Financial Reporting and Accounting*, *20*(3/4), 542–557. https://doi.org/10.1108/JFRA-05-2020-0143

Takacs, A. (2023). The positive effects of green technology investments on growth expectations. *Technology in Society*, *75*, 102407. https://doi.org/10.1016/j.techsoc.2023.102407

Tilt, C. A. (2016). Corporate social responsibility research: the importance of context. *International Journal of Corporate Social Responsibility*, *1*(1), 2. https://doi.org/10.1186/s40991-016-0003-7

Udo Udoma, & Belo-Osagie. (2026). *Green-Finance-in-Nigeria-2025-in-Review-and-Outlook-for-2026*.

Ukoh, U. M., Nduokafor, C. O., & Nworie, G. O. (2024). Sustainability Reporting among Oil and Gas Firms: A Strategic Tool for Enhanced Firm Value. *International Journal of Economics and Financial Management*. https://doi.org/10.56201/ijefm.v9.no2.2024.pg144.166

Uwuigbe, U. (2018). SUSTAINABILITY REPORTING AND FIRM PERFORMANCE: A BI-DIRECTIONAL APPROACH. In *Academy of Strategic Management Journal* (Vol. 17, Number 3).

Wang, H.-M. D., & Sengupta, S. (2016). Stakeholder relationships, brand equity, firm performance: A resource-based perspective. *Journal of Business Research*, *69*(12), 5561–5568. https://doi.org/10.1016/j.jbusres.2016.05.009

Widyantoro, T., Rusmanto, T., Warganegara, D. L., & Furinto, A. (2025). Enhancing green innovation and financial performance: the role of stakeholder pressures and green dynamic capabilities. *Frontiers in Climate*, *7*. https://doi.org/10.3389/fclim.2025.1599894

Wu, W., An, S., Wu, C.-H., Tsai, S.-B., & Yang, K. (2020). An empirical study on green environmental system certification affects financing cost of high energy

consumption enterprises-taking metallurgical enterprises as an example. *Journal of Cleaner Production*, *244*, 118848. https://doi.org/10.1016/j.jclepro.2019.118848

Yeye, O., & Egbunike, C. F. (2023). Environmental, Social and Governance (ESG) disclosure and firm value of manufacturing firms: The moderating role of profitabilit. *International Journal of Financial, Accounting, and Management*, *5*(3), 311–322. https://doi.org/10.35912/ijfam.v5i3.1466

Zhang, Q., Ding, R., Chen, D., & Zhang, X. (2023). The effects of mandatory ESG disclosure on price discovery efficiency around the world. *International Review of Financial Analysis*, *89*, 102811. https://doi.org/10.1016/j.irfa.2023.102811

Zhaowen, W., & Philip, L. (2025). Environmental, social, and governance (ESG) and financial performance of listed companies in the automotive industry in China. *Journal of Accounting and Taxation*, *17*(3), 82–96. https://doi.org/10.5897/JAT2025.0642

Zik-Rullahi, A. A., & Jide, I. (2023). Green Accounting: A Fundamental Pillar of Corporate Sustainability Reporting. *Journal of Accounting and Financial Management*, *9*(8), 59–72. https://doi.org/10.56201/jafm.v9.no8.2023.pg59.72

APPENDICES

Appendix 1. Stata Do-File

The Stata code presented below documents the entire empirical process of this thesis. It details the steps taken to import, merge, and clean the data obtained from Refinitiv, Africa Financial, and the NGX Data Library.

i. replace firm = "TotalEnergies" if firm == "TotalEnegies"
ii. replace firm = "NigerianBreweries" if firm == "Nigerian Bre"

iii. encode firm, gen(firm_id)
iv. xtset firm_id year

v. gen lnfv = log(fv)

vi. gen lfsize = ln(fsize)

vii. summarize lnfv gai lfsize lev prof fage

viii. pwcorr lnfv gai lfsize lev prof fage, sig

ix. reg lnfv gai lfsize lev prof fage
x. vif

xi. xtreg lnfv gai lfsize lev prof fage, re
xii. xttest0

xiii. xtreg lnfv gai lfsize lev prof fage, fe
xiv. estimates store fe

xv. xtreg lnfv gai lfsize lev prof fage, re
xvi. estimates store re

xvii. hausman fe re, sigmamore

xviii. xtreg lnfv gai lfsize lev prof fage, fe

xix. xttest3

xx. xtserial lnfv gai lfsize lev prof fage

xxi. xtreg lnfv gai lfsize lev prof fage, fe vce(cluster firm_id)

xxii. encode firm, gen(firm_id)

xxiii. gen sector = .

xxiv. Primary (Extractive & Agriculture)

xxv. replace sector = 1 if inlist(firm, "Seplat", "oando PLC", "TotalEnegies", "Conoil", "Presco")

xxvi. Manufacturing

xxvii. replace sector = 2 if inlist(firm, "Dangote", "BUA", "Lafarge", "Larfage", "Unilever")

xxviii. replace sector = 2 if inlist(firm, "Cadbury", "PZ Cussons", "Nigerian Bre", "Guinness")

xxix. replace sector = 2 if inlist(firm, "Honeywell", "Meyer")

xxx. Services

xxxi. replace sector = 3 if inlist(firm, "Zenith", "UBA", "Sterling", "MTN", "JuliusBerger")

xxxii. label define sectorlbl 1 "Primary" 2 "Manufacturing" 3 "Services"

xxxiii. label values sector sectorlbl

xxxiv. tabstat lnfv gai lfsize lev prof fage, by(sector) stat(mean sd min max)

xxxv. anova lnfv sector

xxxvi. xtset firm_id year

xxxvii. xtreg lnfv gai lfsize lev prof fage i.sector, fe vce(cluster firm_id)Sectoral Comparative Analysis of Firm Characteristics