

Green Accounting Practices and Shareholders' Value of Listed Consumer Goods Companies in Nigeria

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ABSTRACT: *The severity of environmental degradation has its adverse impact on the quality of lives. Measures are being taken both at the national and international level to reduce and mitigate its impact on the environment, social, economic, and political sphere. This study investigated the effect of green accounting practices on shareholders' value in Nigeria by drawing samples from listed consumer goods firms on the floor of the Nigerian Exchange Group from 2012 to 2021. Ex post facto design was used, secondary data were employed and least square dummy variable regression was used in analyzing the data. A sample size of 20 companies were determined using Taro Yamane formula and these companies were selected using simple random sampling technique. Green accounting being the dependent variable was proxied by biodiversity disclosure, emission disclosure, waste disclosure, water & effluents disclosure, and compliance to environmental laws & regulations disclosure. The dependent variable of this study was shareholders' value proxied by shareholders' value added (SHVA). The result showed that biodiversity disclosure and compliance to environmental laws disclosures have a positive significant effect on shareholders' value added; water & effluents disclosures have a positive significant effect on shareholders' value added of listed consumer goods firms in Nigeria during the period under study. It was thus concluded that green accounting practices have significant effect on shareholders' value added of manufacturing companies in Nigeria. Therefore, it was recommended among others that compliance to green accounting practices should be made mandatory for all companies because standard green accounting disclosures are signals to all stakeholders that the companies are 'green' and eco- friendly companies and this in turn boost shareholders value.*

KEYWORDS: green accounting practices, shareholders' value, listed consumer goods, companies, Nigeria

INTRODUCTION

The success of every corporate organization is dependent on its operational environment as no business can survive without the environment. A study by Amedu, Iliemena, and Umaigba (2019) revealed that most Nigerian manufacturing companies are silent on environmental information disclosure. It is an inclusive aspect of sustainability accounting that focus on the organizational impact or footprint on the environment. The severity of environmental problems in Nigeria and beyond is known to have negative effects on life expectancy generally. Green accounting entails all practices carried out by management of firms to keep the environment “clean” and “green” by engaging in innovative and sustainable business practices that portrays that they are “eco-friendly” and responsible entities. Such practices include activities that preserve biodiversity, curb greenhouse gas emissions and waste management strategies to avoid environmental contamination. Biodiversity disclosure is the disclosure of companies’ impact on the natural environment and the ecosystem. By biodiversity disclosures, all businesses assess and report on their dependencies and impacts on biodiversity, from local to global and the strategies adopted to reduce negative footprint on the ecosystems. Emission disclosure consists of all disclosures on emissions that have significant adverse impacts on ecosystems, air quality, agriculture, and human and animal health. Including greenhouse gas (GHG), ozone-depleting substances (ODS), and nitrogen oxides (NOX), and sulfur oxides (SOX). The role of companies in waste management can reflect the superior performance in innovation and the risk a company is willing to take to engage in circular economy. The organizations that contribute to these footprints are duty bound to disclose their sustainability strategies to curb the adverse effect of the on the environment. By so doing companies aligns their corporate social responsibility policies with the profit maximization objective of the firm and thereby improve the shareholders’ value.

Shareholders’ value creation has occupied a pivotal spot on the global business scene, industry competitive position and firm performance scorecard as well as investment decision making process. Value is created for shareholders by the increase in shareholders’ wealth represented by a rise in corporate profit or share price. In the light of these, management of companies adopt strategic alternatives and harness all corporate resources to achieve commendable financial value for stakeholders’ interest. Maximizing the shareholders’ value is one of the key objectives of any organization, there is need to know the additional value added through adopting green accounting disclosures by the company. Although in pursuance of the these business objectives, negative externalities are left on the environment and society. In order to be counted as green and responsible companies, companies also put up some sustainable strategies to mitigate these negative externalities through their corporate social responsibilities on both the environment and the society at large.

The disclosure of the companies' environmental foot prints (both negative and positive) send signals to the stakeholders about the companies' responsibility towards the environment and the ecosystem at large. The disclosure of companies' green activities also entails that the companies are engaged in legitimate activities that are desirable, proper or appropriate within some socially constructed systems of norms, values, beliefs. Thus, this reporting system can improve the companies' image in the eyes of the public because the company has paid attention to social, economic, and environmental bottom lines and hence boost and increase the investors' confidence (Laskar & Maji, 2018). Customers also prefer to patronize companies that take responsibility for the impact of their economic activities. In addition to this, companies that disclose their green activities are regarded as responsible and eco-friendly firms which investors prefer to commit their funds. Thus, the more attractive the shares of a company are, the more likely that the prices of such shares will rise and thus the increase in market capitalization of such companies, which in turn enhances the shareholders' value. Hence, based on the fore going, this study examined the effect of green accounting practices on shareholders' value of consumers goods companies in Nigeria. This study was supported by two key theories which are agency theory and stakeholders' theory. Agency theory supports this study in the sense that managers could mitigate information asymmetry problem by increasing the amount of information they provide to the outsiders of a company through green accounting disclosures. This would enable shareholders to know the amount of resources committed for sustainable activities. Stakeholders theory also supports this study because it is premised on the notion that stakeholders expect companies to be socially and environmentally responsible so that there is a market premium in improved economic, environmental and social performance which in turn boost the shareholders' value. Green disclosure would portray transparency and accountability of management on sustainability practices.

Consumer goods companies contribute more than 10% of the total greenhouse gases and other waste emitted into the environment. But most of these companies do not show concern about the environmental impact of their businesses and are not committed to restoring the environment or engaging in sustainable business activities. This is so because they assume that engaging in sustainable activities engender additional cost that erodes the shareholders' value. However, when the companies fail to engage in sustainable business activities this may destroy social capital and trust, engender stakeholders' hostility, expose the firms to environmental disaster or social malfunctioning, increase cost of capital and thus destroy the shareholders' value.

Going through the empirical literature, it was discovered that most of the researches on green accounting concentrated on the effect of green accounting on other performance measures such as financial performance (Muhammad, 2019; Budiono & Dura, 2021; Sumiati, Susanti, Maulana, Indrawati, Puspitasari & Indriani, 2021; Emmanuel 2021); economic value (Al-Dhamish, 2020)

and firms' value (Rizal & Yatminiwati, 2020; Yang, Wen & Li, 2020; Agustia, Saarijuwono, Dianawati 2019; Oyedokun, Egbrioyinemi & Tonademukaila, 2019). There was no specific study on the effect of green accounting on shareholders' value added. Worst still, most of the studies reviewed were done outside Nigeria (Effendi, 2021; Al-Dhaimesh 2020; Yang, Wen, & Li, 2020; Endiana *et al*, 2020), in countries with different legal and stronger institutional background than Nigeria. And unfortunately, there was no unanimous agreement from the previous literature on the effect of green accounting on shareholders' value as the outcome of these studies were mixed. This study would be significant to investors, management of companies and future researchers as well as contribute to knowledge by providing evidence of the effect of green accounting practices on shareholders value added of consumer goods companies in Nigeria. Thus, it was based on this backdrop that this study was undertaken to examine the effect of green accounting on shareholders' value drawing samples from listed manufacturing companies in Nigeria. Thus, based on the foregoing, the following hypotheses were formulated for this study;

H₀₁: Biodiversity disclosure has no significant effect on shareholders' value added of listed consumer goods firms in Nigeria

H₀₂: Emissions disclosure has no significant effect on shareholders' value added of listed consumer goods firms in Nigeria

H₀₃: Waste disclosure has no significant effect on shareholders' value added of listed consumer goods firms in Nigeria

REVIEW OF RELATED LITERATURE

Green accounting

Green accounting, also known as environmental accounting or resource accounting or integrated economic and environmental accounting, has various meanings. According to Han (2012), Green accounting reports on the effect of the company's activities on the environment and also the impact of the environment on the business in financial and physical terms. In the view of Kumar, Pranitha, and Kumar (2017), green accounting measures, record and disclose the effect of corporate environmental actions on its financial standing using a set of accounting systems. Environmental accounting aims to enable companies to achieve sustainable development and pursue efficient and effective environmental conservation activities while maintaining a good relationship with the company's community. This process aids organizations in identifying the cost of engaging in environmental conservation activities, the benefits gained from conservation activities provided in quantifiable means of measurement and support the communication of the evaluation results carried out to the stakeholders. It is a subset of sustainability reporting that focuses on impact of corporate activities on the environment.

Green accounting reporting is all encompassing and forms an integral part of sustainable development goals set to be achieved by members of the United Nations in 2030. The aim of implementing green accounting is to increase the efficiency of environmental management by assessing environmental activities from the perspective of costs (environmental costs) and benefits or effects (economic benefits), as well as producing environmental protection effects. In short, the implementation of green accounting can provide information about the extent to which an organization or company makes a positive or negative contribution to the quality of human life and the environment. In Nigeria, green accounting is not a mandatory requirement for firms that are listed in the nation's stock market.

Biodiversity disclosure

Biodiversity comprises all the variety of animals, plant, fungi and even microorganisms found in an area. Biodiversity disclosure involves disclosures on all operational activities of organizations that have adverse effects directly or indirectly on bio-diversities, such as construction, or use of manufacturing plants, mines, and transport infrastructure. Multiple lines of evidence, including information provided by countries' scientific literature, indicator-based statistical extrapolations as well as longer term model-based scenarios, show that significant additional efforts would be required if internationally agreed biodiversity commitments are to be met (Prahinski & Kacobasoglu, 2006). While public awareness of biodiversity and its importance appears to be increasing in developed world, it remains at a low level in some developing countries like Nigeria.

Biodiversity is the variety of all life on earth. Species depend on each other in a mutually beneficial relationship that is called an ecosystem, and healthy ecosystems provide us with clean water and air, regulate the climate, protect our soil, and provide us with food and even medicine. Managing biodiversity risk can improve productivity and resilience, and underpin a social license to operate. Businesses should act now to understand their biodiversity risks and opportunities, build internal accountability and disclose their actions (EY, 2022). The impact of biodiversity loss can be extensive and often unrealized, causing disruption to supply chains, increasing regulatory compliance costs and potentially eroding social license. However, many companies have only just begun to explore their impact on biodiversity loss and only a small number of pioneering companies have published credible biodiversity strategies with robust biodiversity goals aligned to their strategic goals. Investors are increasingly considering how to address biodiversity as part of their assessments and how they direct capital toward companies that can demonstrate and report on their biodiversity strategy (EY, 2022). This implies that investors could divert capital away from businesses that directly and indirectly cause adverse biodiversity impacts into those that are "nature-positive." (Gazzo, 2022). Thus, it is pertinent for consumer goods companies to improve the standards on nature-related disclosures and increase their integration with core financial investments. This would attract investors that support greener economy, and also provide long-term value creation for people and our planet.

Emissions disclosure

This consists of all emissions that have significant adverse impacts on ecosystems, air quality, agriculture, and human and animal health. Including greenhouse gas (GHG), ozone-depleting substances (ODS), and nitrogen oxides (NOX), and sulfur oxides (SOX). Environmental degradation continues to be a serious challenge in Africa, particularly in oil-producing African countries. This is largely due to the hazards associated with oil extraction and refining activities. These activities entail the exhaustion of carbon which produces a negative effect on the environment via greenhouse gas emission. Arguments in extant literature posit that the growth of economic activities and energy consumption is associated with increasing greenhouse gas emission, largely due to utilization of non-efficient energy methods (Saidi & Hammami, 2015; Muhammad, 2019). An increase in greenhouse gasses emission portends danger for the environment and humanity via its negative implication on climate change.

Greenhouse gasses such as nitrous oxide (N₂O), carbon dioxide (CO₂), and methane are regarded as important contributors to climate change while at the same time seen as products of economic activities that drive economic growth and development (Mladenović *et al.* 2016). If efforts to combat climate change are inadequate, climate change has the tendency of negatively impacting development strides and economic growth efforts of countries. Despite that the effect of climate change is global, oil-producing African countries are expected to be gravely affected by it. This is predicated upon the fact that manufacturing techniques which lead to green emissions and environmental degradation are largely adopted; further, the high volume of gas flaring and ineffective implementation of environmental laws contributes to further environmental degradation.

Waste disclosure

Wastes are objects or substance which are disposed of or are intended to be disposed of or are required to be disposed of by the provision of the law (UNSD Glossary of Environmental Statistics, 2013). Examples include municipal solid waste (household trash/refuse), hazardous waste, wastewater (such as sewage, which contains bodily wastes (feces and urine) and surface runoff), radioactive waste, and others. Waste collection and transportation can generate up to 70% of the total cost of the system. The proper estimation and monitoring of waste collection cost are essential to define the most cost-effective waste collection systems (Dijkgraaf & Gradus, 2017). Waste management is a serious issue due to human health and environmental sustainability implications. It is really a pressing issue the world is facing today since a high percentage of waste is currently disposed of by open dumping (Harts & Ahuja, 2016). It is a globally challenging issue especially in developing countries due to its adverse environmental effects.

Toxic waste materials can contaminate surface water, groundwater, soil, and air which causes more problems for humans, other species, and ecosystems (Wolsink, 2014). Waste treatment and disposal produces significant greenhouse gas (GHG) emissions, notably methane, which are contributing significantly to global warming (Moran, 2014). The economic costs of managing waste are high, and are often paid for by governments. Money can often be saved with more efficiently designed collection routes, modifying vehicles, and with public education. Waste recovery has become one of the most important strategies to reduce environmental issues and improve economic performance in an industry. Thus, different systematic approaches have been developed for waste recovery. With increasing resource scarcity and environmental impacts resulting from inefficient resource utilization, accounting for resource consumption along the life cycle of a product or service becomes critical for designing production–consumption systems. Inefficient management of production waste can cause severe harm to the environment; being one of the major causes of terminal diseases among humans, firms must disclose to stakeholders how they are managing waste in order to protect the environment. In the consumer goods sectors, it is estimated that waste reduction accounts for 5-6 percent of total logistics costs. Zhu *et al.* (2008) observed that based on waste management as a strategic resource would have higher chances of minimizing cost of production through lowering waste management fees, lowering hazardous material management fees, less time and costs for reporting;

Shareholders' value added (SVA)

Shareholder's value is the value that shareholders of a company receive as dividend and share price appreciation as a result of better decision making by the management that results in a company's growth in sales and profit (ICAN, 2022). Maximizing the shareholders' value is one of the key objectives of any organization, there is need to know the additional value added through adopting green accounting disclosures by the company. And it highly depends on the ability of it management to make appropriate decision such as putting in place adequate innovations and sustainability strategies to ensure that the environment is preserved for future generation. Shareholder value added is a notable metric in the field of value-based performance management, value-based incentive compensation and accounting for value. It is a measure of incremental value of a business to those who invested in it. Some investors use SVA to judge the company's profitability and efficiency. Shareholder value is created when a company's profit exceeds its costs

Theoretical review

There are several theories that can be employed to explain the motivation for green accounting. This study focused on the two of these theories and these are stakeholder theory and agency theory.

Stakeholder Theory by Edward Freeman (1984)

This theory was propounded by Freeman (1984) and he explained specific corporate actions and activities using a stakeholder agency approach. This theory is concerned with how relationships with stakeholders are managed by companies in terms of the acknowledgement, transparency and accountability. The argument advocated by Freeman (1984) is that all stakeholders have the right to be treated reasonably by the organization. According to him, stakeholders comprise any group or individual who can affect or be affected by the achievement of the organization's objectives. These groups or individuals include employees, local communities, customers, suppliers, competitors, banks, investors, governments, non-governmental organizations (NGOs).

More so, this theory proposes an increased level of environmental awareness which creates the need for companies to extend corporate planning to include the non-traditional stakeholders in order to adapt to changing social demands. As stakeholder influence becomes crucial for corporate image and comparative advantage, companies manage their stakeholder relationship by providing information often in the form of voluntary disclosures in the annual reports or on their websites. In summary, stakeholder theory views corporations as part of a social system while focusing on the various stakeholder groups. Stakeholder theory does not give primacy to one stakeholder group over the other, though there will surely be times when one group will benefit at the expense of others. However, management must keep their relationship among stakeholders in balance, when this relationship becomes skewed the survival of firm is in jeopardy.

This study is anchored on this theory because it is premised on the notion that stakeholders expect companies to be socially and environmentally responsible so that there is a market premium in improved economic, environmental and social performance which in turn boost the shareholders' value.

Agency Theory by Jensen and Meckling (1976)

Agency theory was developed by Jensen and Meckling in 1976. They defined the agency relationship as “a contract under which one or more persons (the principals) engage another person (the agent) to perform some services on their behalf which involves delegating some decision-making authority to the agent.” Agency problem arises due to the conflict of interests within the management-investors relationship. Since, investors invested their funds into an investment opportunity and do not plan to participate actively in its management, this creates an incentive for the managers to perform self-centered decision that “misuse” investors' invested capital. One way to lessen the agency problem is by means of contracts. These contracts can be in the form of a compensation agreements or debt contracts, in which their function is to align the interest of the managers with those of the investors and the creditors (Healy & Palepu 2001).

These contracts require management to disclose relevant information to investors and to creditors. Consequently, investors and creditors can check if the management complied with the contract agreements and evaluate if their decisions are in alliance with their interest. It has been suggested that one of the possible ways to decrease agency costs is to disclose more information concerning the management activities and the economic reality of the firm and through such information, stakeholders and other investors can monitor management more appropriately (Álvarez et al., 2008). In this regard, Akhtaruddin and Hossian (2008) affirm that information disclosure is motivated by the wish of the managers to efficiently treat the potential conflicts between companies' managers and stakeholders. From the agency theory point of view, both parties to a contract (the principal and the agent) often do not have the same information and this situation is called asymmetric information (Norren, 1988).

Typically, information asymmetry between the principal and the agent occurs when the agent has more information than the principal. In other words, information asymmetry arises where the company managers have the competitive benefit of information within the company over that of the shareholders and other investors (Arnold & Lange, 2004). Thus this theory support this study in the sense that managers could mitigate the information asymmetry problem by increasing the amount of information they provide to the outsiders of a company through green accounting disclosures. This would enable shareholders to know the amount of resources committed for sustainable activities.

Empirical review

Cheska, Ronniell, and James (2022) examined the impact of environmental accounting disclosure (EAD) on firm's profitability and firm value. The sample used in this study was the thirty (30) publicly-listed chemical, mining and oil companies under the Petrochemical Industry in the Philippines which were considered as pollutant contributors. Causal-explanatory research was utilized. Financial and environmental data from years covering 2015-2019 were gathered from secondary sources specifically, annual reports and annual corporate governance reports of these companies. Environmental accounting disclosure (EAD) was measured using EAD Index. Profitability was measured through the use of Return on Assets, Return on Equity, Net Profit Margin and Debt to Equity Ratio whereas firm value was measured by Tobin's Q. This study concluded that EAD has no significant effect on either the profitability or firm value. Therefore, whether environmental information was disclosed or not, it would not affect the independent variables.

Budiono and Dura (2021) determined the application of green accounting and its impact on company profitability. In this study, green accounting was measured by the Company Performance Rating Program in Environmental Management (PROPER) and profitability was measured with

the return on asset (ROA). The research method used was quantitative research design. The sample size of 24 out of the population of 100 Kompas Index companies were selected purposively. Data were analyzed using simple regression. The results of this study indicated that the application of green accounting has a significant effect on the profitability of the Kompas100 Index company.

Amosun and Akintoye (2021) examined the impact of green accounting on the financial performance of companies in Nigeria. Based on the data extracted from the annual reports of two natural resources companies listed on the Nigerian exchange group for five years (2015- 2019) and analyzed using ordinary least square (OLS) regression, the study found that environmental accounting (environmental conservation cost) has a significant effect on the financial performance of natural resources companies. The authors concluded that proper reporting of green accounting could affect the financial performance of companies.

Benson, Asuquo, Inyang, and Adesola (2021) examined the effect of green accounting on the financial performance of oil and gas companies from 2010-2020. A quantitative technique was adopted, and Ex post facto research design was employed for the study. Data were obtained from annual reports and accounts of the companies for the periods 2010 to 2020. The results showed that environmental cost accounting has a significant effect on the financial performance of oil and gas companies. Also, the study found that green management accounting has significant effect on the financial performance of oil and gas firms. Therefore, the authors recommended that management of oil and gas companies in Nigeria should pay particular attention to environmental cost accounting to enhance the firm's operating environment and the financial performance of the companies.

Sumiati, Susanti, Maulana, Indrawati, Puspitasari, and Indriani (2021) gathered empirical evidence about the effect of green accounting and environmental performance on profitability, either separately or concurrently. The population in this study consisted of 107 companies listed on the Indonesia Stock Exchange in the mining sector and the consumption goods industry sector. Purposive sampling with criteria set to produce 77 observational data was used to sample as much as possible. Based on the findings of the research, it was concluded that, while the use of green accounting is voluntary, its impact on profitability is greater than that of environmental performance

Effendi (2021) examined the effect of implementing environmental management accounting in increasing firm value in Tangerang Raya. This research used a population of 2,579 manufacturing industrial companies in Banten province. The samples were selected using predetermined criteria with quantitative methods. Based on the multiple linear regression testing that had been carried out, the following results were obtained: there is a significant positive effect between the material input aspect and the environmental complaint mechanism aspect on firm value. Furthermore, the

results of non-output aspects of products and aspects of compliance have a significant negative effect on firm value. Simultaneously, the effect of the application of environmental management accounting proxied through material input, environmental complaint mechanism, non-product output, compliance, transportation, supplier assessment and others have a significant effect on firm value.

Emmanuel (2021) examined green accounting disclosure and its effect on financial performance of listed manufacturing firms in Nigeria. Particularly, the study examined the effect of green accounting disclosure on ROA, ROE and share price of manufacturing firms in Nigeria. The ex-post facto research design was employed. Data from the annual reports of forty out of the sixty-six manufacturing companies listed in the Nigerian Stock Exchange as of 31st December 2019 for the period spanning 2010 – 2019 were used. The descriptive statistics and the panel regression methods were employed for the data analysis. The Arellano and Bond (1991) GMM estimator which controls for potential endogeneity problem was employed to ensure robustness of the parameter. The study findings revealed that green accounting disclosure had a positive significant effect each on ROA and ROE. However, a negative effect subsists between green accounting disclosure and share price of manufacturing firms in Nigeria. The findings recommended that manufacturing firms are encouraged to increase the extent of their green accounting activities for ease of assessment by stakeholders for investment decision making. Furthermore, the government should strictly enforce green accounting disclosure practice by ensuring that firms that are going public should comply with this practice in line with the GRI benchmark so as to obviate the skewed spirit of free-market individualism.

Lusiana, Haat, Saputra, and Muhammad (2021) examined the relationship between green accounting, corporate social responsibility (CSR), return on asset, return on equity, and firm value. A total of 30 peer-reviewed articles have been reviewed and analysed, resulting in a finding in the previous article's literature. They found out that green accounting and CSR significantly affects financial performance, impacting firm value. In conclusion, the application of green accounting affects increasing profits. According to them, a company with a good CSR will certainly create a positive image and reputation among investors.

Akpan and Simeon (2021) examined the effect of sustainability disclosures on cash flow return on investment of shareholders of oil and gas companies in Nigeria. Secondary source of data was used and the research design adopted was ex post facto. The study adopted time series and cross sectional analysis of selected oil and gas firms quoted on the Nigeria Stock Exchange as at 31st December 2020 for a period of seven years spanning 2014-2020. Content analysis methodologies were employed to get data for the sustainability parameters. The results from the study reveal that social sustainability disclosure have a positive significant effect on cash flow return on investment

of listed oil and gas firms in Nigeria; health and safety as well as environmental disclosure have insignificant effect on cash flow return on investment of the studied companies.

Okeke, Ifurueze and Nwadiaro (2021) analyzed the effect of carbon emission disclosure on economic value added of oil and gas firm in Nigeria stock exchange between the periods of 2018-2019. Panel Least Squared (PLS) method of data analysis was used. Secondary sources of data were employed; the interested variables were sourced from the annual report of the quoted oil and gas firms. The following variables were employed: Economic value added, effluent and waste treatment cost disclosure, Revenue growth of firm and Firm size. The study employs Causality Test, Hausman Test, fixed effect as well as random effect to analyse the included variables. From the analysis result the study found that effluent and waste treatment cost disclosure, has significant effect on economic value added, revenue growth of firm has positive significant effect on economic value added. Firm size has positive insignificant negative effect on economic value added. The study recommend that Government should enact regulatory laws that will ensure that companies carry out the corporate social responsibility. Extant laws should be properly enforced. Oti, Effiong and Akpan (2017) determined from accounting perspective, the environmental consequences of the operations of oil and gas companies in the Niger-Delta region of Nigeria. The study was motivated by the curiosity to explain what goes on in the Niger-Delta region in the light of environmental degradation and the continuous agitation for a sustainable approach to corporate social responsibility (CSR). The study adopted the ex-post facto research design. Questionnaires were used to collect data from primary and Taro Yamani sampling determination technique was applied to a sample size of 300 respondents drawn from a population of three million. Data collected were analyzed using population t-test at 95% level of significance. The result shows that the corporate social responsibility strategies employed by the oil and gas companies are not adequate to address the environmental degradation resulting from their operations.

Based on the above review, it was discovered that most of the study on green accounting studied the effect of green accounting on financial performance and the empirical findings were mixed.

METHODOLOGY

The research design adopted for this study was *ex post facto* design. This design was suitable for this study because the data used was historical and the researcher had no direct control over the variables involved. The population of the study consisted of all the listed consumer goods firms in the Nigeria Exchange Group. This sector was selected because their economic activities have significant impact on the environment. As at the end of 2021, there were 21 consumer goods firms listed on the floor of the Nigerian Exchange Group (NGX) and Taro was used to obtain a sample size of 20 consumer goods companies. Secondary data were used in this study and they were

sourced from each sampled firm's annual financial reports and the Nigeria Exchange Group Fact book. Furthermore, content analysis was the methodology adopted to collect the green accounting variables. The instrument employed for collection of the data for green accounting was the researcher designed checklist. This checklist was developed based on Global Reporting Initiatives (2020) disclosure guidelines. The checklist was developed into three sections with a total of 38 disclosure items which comprised of biodiversity -17 disclosure items, emissions – 13 disclosure items and waste - 8 disclosure items. Each reporting item on the checklist was assigned a value of '1' if disclosed and '0' if the item was assumed relevant but not disclosed. The score or disclosure index for green accounting parameters was the ratio of actual disclosure to the expected disclosure.

This is given thus;

The disclosure index = $\frac{\text{Actual disclosure}}{\text{Expected disclosure}} \times 100$

The least square dummy variable regression technique was employed in analyzing the data set. The descriptive statistics was also employed to examine the characteristics of the data. Spearman rank correlation analysis was adopted to evaluate the association among the variables, and check for possible collinearity among the variables of interest. The econometric model used in this study was adapted from the study of Effendi (2021) which was modified to suit this study as given below. Shareholders' value =f(green accounting)

$$SHVA_{it} = \beta_0 + \beta_1 BIOD_{it} + \mu_{it} \quad (1)$$

$$SHVA_{it} = \beta_0 + \beta_2 EMID_{it} + \mu_{it} \quad (2)$$

$$SHVA_{it} = \beta_0 + \beta_3 WASD_{it} + \mu_{it} \quad (3)$$

$$SHVA_{it} = \beta_0 + \beta_1 BIOD_{it} + \beta_2 EMID_{it} + \beta_3 WASD_{it} + FSIZ_{it} + \mu_{it} \quad (4)$$

Where:

SHVA	=	Shareholders' value added
BIOD	=	Biodiversity disclosure
EMID	=	Emissions disclosure
WASD	=	Waste disclosure
FSIZ	=	Firm size (control variable)
β_0	=	Constant
$\beta_1- \beta_6$	=	Slope coefficient (to be determined in the study)
μ	=	Stochastic disturbance
i	=	i th firm
t	=	time-period

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS**Data presentation****Table 4.1: Summary of descriptive statistics of the effect of green accounting on shareholders' value**

Variable	Obs	Mean	Std. Dev	Min.	Max
Shva	200	1.6282	1.635352	0.12	12.691
Biod	200	0.02	1.1401558	0	1
Emid	200	0.0888889	0.2849	0	1
wasd	200	0.1822222	0.3864572	0	1
fsiz	200	7.164022	0.8920023	5.24	9.38

Source: Author's computation, 2023

Table 4.1 shows the descriptive statistics of the study. In the case of the dependent variable, the table shows that the mean of shareholders' value added (SHVA) is 1.63 with a standard deviation of 1.64. The table also shows that the minimum and maximum value of shareholders' value added are 0.12 and 12.69 respectively. The result implies that on the average, value added to the shareholders of the firms under study was N1.63 million during the period under investigation. In the case of the independent variables, the result from table 4.1 shows that biodiversity disclosure (BIOD) had a mean of 0.02 and a standard deviation of 0.14. This implies that on the average, about 2% of consumer goods firms under study disclosed information related to biodiversity in line with the provision of GRI 2020 guidelines. Furthermore, the result showed that the mean of emission disclosure (EMID) was 0.09 with a standard deviation of 0.28. The results imply that on the average, about 9% of the firms under consideration disclosed information related to emission in line with the provision of GRI 2020 guidelines. Also table 4.1 shows that the mean of waste accounting disclosure (WASD) was 0.18 with a standard deviation of 0.38. The result implies that on the average, about 18% of the firms under study disclosed information related to waste disposal in line with the provision of GRI 2020 guidelines. The result also means that about 82% of the firms in the study sample did not disclose information about waste disclosure during the period covered in this study. In the case of the control variable, table 4.1 shows that firm size (FSIZ) had a mean of 7.16 with a standard deviation of 0.89.

Data analyses*Correlation analysis***Table 4.2: Correlation analysis of the relationship between green accounting and shareholders value**

	shva	biod	emid	wasd	Fsiz
Shva	1.0000				
Biod	-0.0060	1.0000			
emid	0.1621	0.4574	1.0000		
wasd	0.0818	0.3026	1.808	1.0000	
Fsiz	0.0695	0.1801	0.3966	0.7678	1.0000

Source: Author's computation (2023)

From table 4.2, the Spearman rank correlation result shows that there exist a positive association between emission disclosure (0.1621) and shareholders' value added. Similarly, table 4.2 shows that there is a positive association between waste disclosure (0.0818) shareholders' value added. The control variable of firm size (0.0695) also has a positive association with shareholders' value added. However, biodiversity disclosure (-0.0060) has a negative association with shareholders' value added.

Regression analyses

To examine the cause-effect relationships between the dependent variables and independent variables of the study, the study employed least square dummy variable regression technique. However, the study first carried out a pool OLS regression analysis and proceeded to validate the estimates of the OLS results. The result obtain are presented below;

Table 4.4 Regression result of the effect of green accounting and shareholders value

	SHVA Model (Pool OLS)	SHVA Model (FIXED Effect)	SHVA Model (RANDOM Effect)	SHVA Model (LSDV Regression)
CONS.	1.185 {0.073}	12.896 {0.000} ***	3.851 {0.003} **	11.118 {0.000} ***
BIOD	-0.057 {0.925}	0.159 {0.000} ***	-0.049 {0.914}	0.159 {0.000} ***
EMID	0.186 {0.635}	-0.251 {0.347}	-0.343 {0.000}***	0.251 {0.000}***
WASD	1.200 {0.002} **	1.094 {0.002} **	1.080 {0.000} ***	1.094 {0.000} ***
FSIZ	0.052 {0.579}	-1.551 {0.000} ***	-0.294 {0.101}	-1.551 {0.000} ***
F-stat/Wald Stat	9.18 {0.0000} ***	10.94 {0.0000} ***	33.40 {0.0000} ***	16.36 {0.0000} ***
R- Squared	0.1105	0.1413	0.0984	0.6721
VIF Test	2.05			
Hetero. Test	41.54 {0.0000} ***			
FE/RE		YES [15.53 {0.0000}]	YES [505.35 {0.0000}]	
Hausman Test		41.52 (0.0000) ***		

Note: (1) bracket {} are p-values; (2) **, ***, implies statistical significance at 5% and 1% levels respectively

Table 4.4 represents the result obtained from the multiple regression analysis for this study. From the table it is observed from the pool OLS regression that the R-squared value of 0.1105 shows that about 11% of the systematic variations in shareholders' value added of the pooled manufacturing firms in Nigeria was jointly explained by the independent and control variables in the model. This implies that about 89% of the changes could not be explained by the variables. The unexplained part of shareholders' value added could be attributed to the exclusion of other independent variables that could affect shareholders' value added but were captured in the error term. Furthermore, the F-statistic value of 9.18 and the associated p-value of 0.0000 shows that the specified model for the consumer firms' sample on the overall is statistically significant at 1% level. This means that the regression model is valid and can be used for statistical inference.

Panel Fixed and Random Effect Regression

As noted by Ajibolade and Sankay (2013), the fixed-effects model which is the main technique for analysis of panel data is used when it becomes important to control for omitted variables that differ between cases but are constant over time. It allows the use of the changes in the variables over time to estimate the effects of the predictor (independent) variables on the outcome (dependent) variable. On the other hand, the random-effects model is used when there are reasons to believe that some omitted variables may be constant over time but vary between cases, and others may be fixed between cases but vary over time.

Specifically, in this study, the F-statistic and Wald-statistic value {10.94 (0.0000) and 33.40 (0.0000)} for fixed and random effect regression respectively shows that both models are valid for drawing inference since they are both statistically significant at 1%. Furthermore, in the case of the coefficient of determination (R-squared), the results from the panel regression shows that the R-Squared value of 0.1413 and 0.0984 for fixed and random effect regression respectively shows that about 14% and 10% of the systematic changes in shareholders' value added of the pooled manufacturing firms in Nigeria was jointly explained by the independent variables in both models respectively. The unexplained part of shareholders' value added could be attributed to the exclusion of other independent variables that could affect shareholders' value added but were captured in the error term. The study also conducted the Hausman specification test to decide which of the model was most preferred statistically for interpretation in this study.

Hausman specification test

The Hausman is based on the null hypothesis that the random effect model is preferred to the fixed effect model. Specifically, a look at the p-value of the Hausman test {41.52 [0.0000]} implies a 1% level of significance. This implies that the study should adopt the fixed effect panel regression results in drawing the conclusion and recommendations. This also implies that the fixed effect results tend to be more appealing statistically when compared to the random effect. Following the

above, the discussion of the fixed effect results became imperative in testing the hypotheses. However, fixed effect in itself is a problem due to the present of time and cross sectional effect that leads to unobserved heterogeneity. Hence, the study employs the Least Square Dummy Variable Regression to control for the unobserved heterogeneity in the fixed effect regression.

Least Square Variable Regression (LSDV)

In panel data models, dummy variables may be introduced to the least squares to explain the effect of each individual unit of a cross section which is unobserved but correctly specifies the model of relation. Just like the OLS, the Least Square Dummy Variable (LSDV) estimator is also applied to the equations in level form and all the cross section is applied in the actual estimation (Greene, 2009). It can give estimates of variances of α_{it} and ε_{it} separately. In the Least Square Dummy Variable estimation, the individual effect is assumed to be fixed over time in each individual. The fixed effects model is a useful specification for explaining cross section heterogeneity in panel data.

However, in small sample case i.e., short time period, the LSDV estimator is inconsistent owing to the incidental parameters problem. The seriousness of this problem in practical terms remains to be established as there exist only a very small amount of received evidence but the theoretical result is unambiguous' (Greene, 2009). The LSDV is generally implemented by the insertion of relevant dummies but being mindful of the dummy variable trap and application of OLS on the enlarged model. Computationally, it is simpler to obtain LSDV through within estimation (Greene, 2009).

Specifically, the study provided interpretation and make policy recommendation with this model. The model goodness of fit as captured by the Fisher statistics (16.36) and the corresponding probability value (0.0000) shows a 1% statistically significant level suggesting that the entire model is fit and can be employed for interpretation and policy implication. Furthermore, an R^2 value of 0.6721 indicates that about 67% of the systematic changes in shareholders' value added of the pooled manufacturing firms in Nigeria was jointly explained by the independent variables in both models respectively. The unexplained part of shareholders' value added can be attributed to the exclusion of other independent variables that could affect shareholders' value added but were captured in the error term. This also means that about 33% of the variation in the dependent variable is left unexplained but have been captured by the error term.

DISCUSSION OF RESULT

Biodiversity disclosure and shareholders' value added of listed consumer goods firms in Nigeria

The results obtained from the least square dummy variable (LSDV) regression model revealed that biodiversity disclosure has a significant effect on shareholders' value added of listed consumer goods firms in Nigeria at 1% level. This implies that a unit increase in the disclosure of impact of business activities on biodiversity and strategies adopted to combat biodiversity loss significantly improves the shareholders' value-added of listed consumer goods firms in Nigeria during the period under study. This is because managing biodiversity risk can improve productivity and resilience, and underpin a social license to operate which in turn enhance the shareholders' value. The impact of biodiversity loss can be extensive and often unrealized, causing disruption to supply chains, increasing regulatory compliance costs and potentially eroding social license. That is why companies should do discard unsustainable business practices that can lead to environmental degradation, supply chain disruption and supply chain disruptions. According to Ernst & Young (2022) investors are also increasingly considering how to address biodiversity as part of their assessments and how they direct capital toward companies that can demonstrate and report on their biodiversity strategy. The findings of this study support the work of the works of Budiono and Dura (2021) who noted that green reporting has significant effect of firms performance. However, the finding contradicts the study outcomes of Riyath et al (2020); Lusiana *et al* (2021) Furthermore, the study disagrees with the findings of Effendi (2021) that found that biodiversity disclosure insignificantly reduces the profitability of firms thus influencing the shareholders' value added.

Emission disclosure and shareholders' value added of listed manufacturing firms in Nigeria

The results obtained from the least square dummy variable (LSDV) regression model revealed that emission disclosure has a statistically significant effect on shareholders' value added of listed consumer goods firms in Nigeria at 5% or 1% level. This implies that a unit increase in the disclosure of e strategies adopted to combat negative impact of greenhouse gas emissions on the environment significantly improves shareholders value added of listed consumer goods companies in Nigeria. Transparency and disclosure can help companies identify and manage risk related to environmental issues such as climate change and resource depletion. Environmental disclosure can encourage business to innovate and develop new solutions, that reduce their impact. The role of a company in emission risk management can reflect the superior performance in innovation and the risk a company is willing to take to engage in a circular economy. The result from this study supports those of Adesola (2021) and Benson *et al* (2021) who found that emission disclosure significantly improves shareholders' value. However, the study contradicts the position of Amosun and Akintoye (2021) who found that the disclosure of emission in a company's annual reports insignificantly increased their value.

Waste disclosure and shareholders' value added of listed manufacturing firms in Nigeria

Furthermore, the results obtained from the least square dummy variable (LSDV) regression model revealed that waste disclosure has a statistically significant effect on shareholders' value added of listed consumer goods firms in Nigeria at 1% level. The result implies that a unit increase in waste management strategies adopted by consumers' goods companies to prevent environmental contamination could significantly improve shareholders value added listed of consumer goods firms in Nigeria during the period under study. Besides informing organisation stakeholders, waste disclosures are a tool for an organisation to take accountability for its environmental impacts, understand the key factors and implications, which guide decision making and ultimately support sustainability. Being transparent about environmental footprint can improve its reputation and brand image by demonstrating a commitment to sustainability and environmental responsibility. The superior performance of corporate waste management can be reflected in the corporate disclosure as a media of accountability and transparency. The study aligns with the findings of Emmanuel (2021) who explained that environmental performances must be achieved by satisfying the demand of many stakeholders. This also support the opinion of Jensen (2001) who noted that during value maximization activity, the company should not ignore stakeholder interest no matter the cost. In other words, the company should not only maximize economical goal but also environmental goals. The findings of the study was also supported by Okeke, Ifurueze and Nwadiaro (2021) the effluent and waste treatment cost disclosure, has significant effect on economic value added, revenue growth of firm has positive significant effect on economic value added.

CONCLUSION AND RECOMMENDATIONS

Green accounting reports on the effect of the company's activities on the environment and the otherwise impact of the environment on the business in financial and physical terms. It measures, record and disclose the effect of corporate environmental actions on its financial standing using a set of accounting systems. Besides, disclosures to stakeholder, environmental disclosures are tools for an organization to take responsibility for its environmental impacts, understand the key factors and implications which can guide making and ultimately support a sustainability strategy. The role of company in environment impact management can reflect the superior performance in innovation and the risk a company is willing to take engage in circular economy. The superior performance of green accounting practices can be reflected in the corporate disclosure as a media of accountability and transparency. It is aimed to create a better relationship between financial and environmental performances, including environmental constancy in the organization's culture and performance by providing needed information for decision makers to reduce commercial costs and risks, thereby adding value to shareholder. Implementation of green accounting would provide information that would be a good signal (good news) to investors. Based on the findings of the

study, it was concluded that the disclosure of green accounting practices has significant effect on shareholders' value of listed consumer goods firms when measured using biodiversity disclosure, emission disclosure and waste disclosure.

Generally, the study advocates that compliance to green accounting practices should be made mandatory for all companies because standard green accounting disclosures are useful information for all stakeholders in decision making. Hence, based on the foregoing, the study recommended that management of consumer goods companies in Nigeria should make disclosures of green accounting practices compulsory and also issue disclosure index peculiar to this industry against which companies can compare their level of disclosure. This is because standard green accounting disclosures are signals to all stakeholders that the companies are 'green' and eco-friendly companies and this in turn boost shareholders' value. It was also recommended that just as companies are striving to create sustained wealth, they should also create formal natural capital accounts to support innovation, conservation and plan for environmental shocks. This study contributed to knowledge by providing evidence of the effect of green accounting practices on shareholders' value added of consumer goods companies in Nigeria.

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