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Environmental Cost Disclosure and Financial Performance of Nigeria Manufacturing Companies

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ABSTRACT
This study examined the relationship between environmental cost disclosure and financial performance of Nigeria manufacturing companies. The objective was to examine the relationship between measure of environmental cost disclosure and performance of listed manufacturing firms. Secondary data obtained from 10 quoted manufacturing companies covering the period 2016 – 2025 obtained from the Nigerian Stock Exchange Fact book and the published annual accounts of the manufacturing companies. The variables considered were return on equity and share price as dependent variables while the independent variables are Environmental maintenance cost and Environmental investment cost. Coefficient of determination, f-test: student t-test, Durbin Watson statistics, regression coefficient and probability ratio were used to determine the extent to which environmental cost disclosure affect performance of manufacturing companies. Panel data methodology was employed while the fixed effects model was used as estimation technique at 5% level of significance. Fixed effects, random effects and pooled estimates were tested while the Hausman test was used to determine the best fit. From the fixed effect results the study found that 73.8 and 15.6 percent of the total variations in the return on equity and share prices of the manufacturing firms is accounted by the explanatory. The regression results found that there is negative and significant relationship between Environmental maintenance cost and return on equity. that there is negative and significant relationship between Environmental maintenance cost and share price that there is negative and significant relationship between investment cost disclosure and return on assets, negative and significant relationship between investment cost disclosure and share price but positive and significant relationship between economic cost disclosure and return on equity and share price. We recommend that environmental cost disclosure policies should be advanced in the manufacturing companies.
Keywords: Environmental Cost Disclosure, Financial Performance, Nigeria, Manufacturing Companies

INTRODUCTION

Accounting provides a system through which costs and revenue can be established. This system is developed and employed by businesses in order to examine the financial and operational performance of its affairs. Corporate entities prepare reports and communicate same to users and these reports capture costs and revenue items used in determining the financial position of an entity. However, improving the financial performance of an entity can be hampered by external factors operating within the business environment. Consequently, corporate entities have continued to identify these external factors that could affect its financial performance and position (Eruemegbe, 2015). The manufacturing sector recorded retarded performance reflecting its growth rate in the first quarter of 2020 being 0.43%, compared to 0.81% growth rate reported in the first quarter of 2019 (Ojeyinka & Adegboye, 2017). Many firms are particularly involved in capturing environmental discourse and other social related benefits at various

national levels. This trend has reawakened corporate attention to the strategic and competitive importance of corporate environmental responsibility to survival. The perception within the developed nations is differs widely due to robust policies and the presence of organized advocacy groups and customer knowledge that influence corporate behaviour (Zelazna, Bojar, & Bojar, 2020). In Nigeria, there are National Environmental Standards and Regulations Enforcement Agency (Establishment) Act 2007, National-Environmental Standards and Regulations Enforcement Agency (Establishment) Act 2008, Environmental Impact Assessment Act 2004, Harmful Waste (Special Criminal Provision) Act 2004, Nuclear Safety and Radiation Protection Act 2007 which centred on review of regulations on air and wa ter quality, discharge of effluents and other harmful substances as well as control of other forms of environmental pollution.

It has been observed that the rate at which most manufacturing companies are experiencing dwindling earnings in recent times is so alarming. The fluctuating and decline in the reported earnings is an indication of poor financial performance. An entity cannot grow in isolation, the developments of any firm is a function of its stakeholders and their belief in the firm. Information is power, as it enlightens the stakeholders on the performances and the operations of the firm. In a bid to provide balanced reporting that provides both quantitative and qualitative information to users, corporate entities are encouraged to sustain its contribution to its immediate communities as corporate social responsibility carried out by corporations would help minimize the negative impact of corporate activities on the environment. Business organizations must ensure it continues to earn profit in order to sustain these social activities. There are many studies on the effect of environmental accounting on corporate performance,(Zelazna, Bojar, & Bojar, 2020; Omaliko, Nweze & Nwadialor, 2020; Nze, Okoh, & Ojeogwu, 2016) however, the effect of environmental cost disclosure is limited in literature, therefore this study examined the effect of environmental cost disclosure on financial performance of listed manufacturing firms in Nigeria.

LITERATURE REVIEW

Conceptual Review

Environmental Cost Disclosure

Environmental cost disclosures or reporting is the process of communicating the social and environmental effects of an organization's economic actions to particular interest groups and the society at large through the annual report (Etale and Otuya, 2018). Environmental accounting disclosures are public relations channels that influence people's perception of the company's corporate image and reputation. It is an essential ingredient of corporate social responsibility reporting that communicate environmental strategy to stakeholders, thus, a tool to spur corporate policies, strategies and management systems that is geared towards minimizing adverse environmental impact (Elkington, 1997; Setyorini and Ishak, 2012; Sustainability/United Nations Environmental Programme (UNEP), 1998). Environmental accounting describes accounting standard setters, professional organizations, and governmental agencies to get corporations to participate proactively in cleaning and sustaining the environment and describing fully, their environmental activities in either their annual reports or stand-alone environmental disclosure (Ezeagba et al., 2017).

According to Ekemezie and Okafor (2020) environmental cost disclosure is in phases and it ranges from ad-hoc comments in the annual report to stand-alone environment reports. Environmental accounting is seen by corporate managers and environmental advocates alike as a necessary complement to improve environmental decision-making in organizations (Ezeagba et al., 2017). Organizations no longer see environmental costs as an added cost but, rather classified as corporate social responsibility costs invested to address environmental issues arising from business operations. According to Levin and Fransen (2017) environmental reports are essential tools through which management communicates to the stakeholders on how their environmental concerns are being addressed. Levin and Fransen (2017) classified environmental accounting disclosures into two parts: mandatory and voluntary disclosures. While mandatory environmental accounting disclosures are where companies' sustainability information is disclosed based on the country's legal rules and regulations, voluntary environmental accounting

disclosures are the disclosure of companies' environmental information voluntarily without any legal obligation.

Companies' recognizing that it is their corporate responsibility to achieve sustainable development by meeting the present needs without compromising the ability of future generations to meet their needs, informed their choice of environmental accounting disclosures practices to the stakeholders in the environment where they conduct their business activity.

Ong,Tho, Goh, Thai and Teh (2016) viewed environmental cost disclosure as a planned statement that depicts company's environmental burden and environmental efforts including company's objectives, environmental policies, environmental activities and impacts, reported and published periodically to the public. Environmental disclosure as defined by Alok, Nikhil and Bhagam 2008 (Olayinka and Oluwamayuwa 2014) is the umbrella term that depict different ways that companies disclose information about their environmental activities to various users of financial statement. From the foregoing definitions, environmental disclosure entails where a company voluntarily or statutorily required by law to provide in annual reports environmental management and environmental development cost.

Dibia & Onwuchekwu (2015) claimed that companies through environmental disclosure may seek to capture public perception toward their operation. By disclosing the quantitatively measured results of its environmental conservation activities, it serves as an external function which allows a company to influence the decision making of stakeholders, such as consumers, investors, and local residents (Ministry of environment Japan 2002). Environmental information serves as a medium of communication between the company and its stakeholder. Disclosure is necessary because of the importance of environment and the devastating impact of company's activities on the environment.

Disclosure could be fixed into company's annual reports; alternatively it could be presented separately (Akanet 2013).According to Nor et al (2015), the demand for company to apply environment disclosure nowadays is very high in order to save the world and it is proved that company with environmental disclosure can achieve good performance. Based on the reviewed literatures, improved disclosure by the companies reduces the gap between management and outsiders, allow company to gain competitive advantage, improve corporate image, enhance the value of stock in the capital market and reduce cost of capital (Kanda 2010; Dye 2001, Akanet 2013). Owalomwa and Jafaru (2012) viewed that some developed countries have initiated mandatory disclosures in the reporting requirements; however, in most developing countries like Nigeria, Malaysia and Turkey, environmental disclosure still heavily rely on voluntary initiatives of the reporting entities.

Environmental costs can be categorized into costs that directly impact on a company's bottom-line, which are referred to as private costs and costs to individuals, society and the environment for which a company is not accountable, which are called societal cost. Private costs can further be classified into, conventional costs, potentially hidden costs, contingent costs and image and relationship costs. This classification creates both a decision-oriented information base for the environmental management system and for the planning, control and supervision of material and energy flows (Lethmate and Doost, 2000, Labarn, 2011, Iheduru, 2018).

i. **Conventional Costs:** The costs of using raw materials, utilities, capital goods and supplies are usually addressed in cost accounting and capital budgeting. However, the environmental portion of these costs into business decisions, whether are not they are seen as environmental costs.
ii. **Potentially Hidden Costs:** These are environmental costs that may be potentially hidden from managers because of their infrequent nature and /or because of their collection in company overhead accounts (EPA 742 –R-95-003, 1995). Different types of environmental costs that may be potentially hidden from managers are: upfront environmental costs, regulatory and voluntary environmental costs and back end environmental costs.
iii. **Contingent Costs:** These are costs that may or may not be incurred at some point in the future. Examples include the costs of remedying and compensating for future accidental releases of contaminant into the environment (example, oil spills), fines and penalties for future regulatory infractions. Because these costs may not currently need to be recognized for other purposes, they

may not receive adequate attention in internal management accounting systems and forward-looking decisions.

iv. **Image and Relationship Costs:** These costs are incurred to affect subjective (though measurable) perceptions of management, customers, employees, communities and regulators. These costs have also been termed "corporate image" and "relationship" costs. This category can include the costs of annual environmental reports and community relations activities, costs incurred voluntarily for environmental activities (example, tree planting), and costs incurred for recognition programs. These costs themselves are not intangible, but the direct benefits that result from relationship or corporate image expenses often are.

v. **Societal Costs or External Costs:** These are the costs a business impacts on the environment and society for which business is not legally accountable. They include environmental degradation and adverse impacts on human beings, their property and their welfare which cannot be compensated through the legal system.

Financial Performance

Financial performance consists of the financial health of an organization and is merely used to compare firms from one industry to the other (Musyoka, 2017). Financial performance is usually measured using financial ratios. Financial measures are influenced by non-financial measures (Santos & Brito, 2012). Performance can be divided into financial and non-financial performance. Eshna (2016) reported that financial performance is the "degree to which financial objectives are met that is assessing a firm's policies and operations in monetary terms. According to Yegon (2015) the three most important decisions in a firm are: investment, financing, and dividend decisions, and are all related to firm performance.

Performance is, however, a difficult concept, in terms of definition and measurement. It has been defined as the end result of activity, and the appropriate measure selected to assess corporate performance is considered to depend on the type of organization to be evaluated and the objectives to be achieved through that evaluation (Hunger and Wheelan, 1997 in Jat, 2006). Zuriekat, Salameh and Alrawashdeh (2011) opined that performance measurement systems are considered information systems that are used to evaluate both individual and organizational performance. Until recently, companies concentrated on the use of financial performance measures as the foundation of performance measurement and evaluation purposes. Market, accounting and mixed variables can be used in measuring the performance of firms in the context of CSR (Poddi and Vergalli, 2009). The market variable is Market Capitalization (MKTCAP). Accounting variables include Return on Equity (ROE), Return on Assets (ROA), Return on Investment (ROI) and Return on Capital Employed (ROCE). The mixed variable is the Market Value Added (MVA). Each of these variables provides a credible measure. The ratios used to measure the overall profit performance of a firm are termed profitability ratios. Pandey (1995) and Khan and Jain (2004) maintains that profitability ratios are determined on the basis of either sales or investment. According to Osisioma (1996) the ratios are aimed at bringing to light the profitability of a firm's operation, the management efficiency as measured by the returns on capital employed and the intensity of capital usage – the rapidity with which invested capital is turned over.

However, following the lead of Preston and O'Bannon (1997), the study selects ROA for use in this study. This variable is One of the widely used accounting based measures of corporate governance in literature is the Return on Asset (ROA) (Finkelstein and D'Aveni 1994; Weir and Laing 1999). It assesses the effectiveness of capital employed and provides a basis in which investors can measure the earnings generated by the firm from its investment in capital assets (Epps and Cereola 2008). The return on assets (ROA) is a measure which shows a number of earnings that have been generated from invested capital. It is an indication of the number of kobo earned on each naira worth of assets. It allows users, stakeholders and monitoring agencies to assess how well a firm's corporate governance mechanism is in securing and motivating efficient management of the firm (Chagbadari, 2011). The ROA is 39 the ratio of annual net income to average total assets of a business during a financial year.

Return on equity

Return on equity (ROE) is a measure of the profitability of a business in relation to equity. ROE ratio essentially measures the rate of return that the owners of the common stock of a company receive on their shareholdings. It signifies how good the company is in generating returns on the investment it received from its shareholders. ROE is one of the all-time favorites and perhaps the most widely used overall measure of corporate financial performance (Rappaport, 1986). The ultimate purpose of any profit-seeking organization is to create wealth for its owners. According to Black et al., (2001), shareholder value is created when the equity returns of a company exceed the cost of that equity. It can also be described as the present value of all future cash flows, less the cost of debt. ROE is calculated by taking the profit after tax and preference dividends of a given year and dividing it by the book value of equity (ordinary shares) at the beginning of the year. Modern-day businesses are not run exclusively for the interest of shareholders alone but in the interest of all stakeholders interested in the organization. Thus, firms in pursuant of their economic values should as well recognize in their annual reports by disclosing the social and environmental impact of their business activity to the host communities to sustain the environment, promote harmonious relationships among the people, preserve the corporate image of the organization as well as build confidence in the society. Against this backdrop, the study aims to ascertain the effect of environmental accounting disclosures on the Return on Equity of selected manufacturing firms in Nigeria.

Return on Asset

Return on asset Return on Assets (ROA) represents the number of earnings a company achieves for each naira of the asset it controls and is a good indicator of a firm's profitability. ROA is a financial ratio that shows the percentage of profit a firm makes relative to its overall resources (investments). According to Osisioma (1996), ratios are aimed at bringing to light the profitability of a firm's operation, the management efficiency as measured by the returns on capital employed and the intensity of capital usage, that is, the rapidity with which invested capital is turned over. Hagel et al. (2010) opine that ROA explicitly considers the assets used to support business activities and determines whether the company can generate an adequate return on these assets rather than just showing robust Return on Sales. ROA is measured as the proportion of net profit after tax to the total asset of the firm. The core objective of every business entity is to maximize profit. As much economic benefit is key to an organization's survival, it must not be pursued at the expense of society and the environment (people and planet). While organizations are directed to be more transparent on how they treat their economic, social and environmental activities as they affect their stakeholders, managers of firms should also be mindful of the fact that any firm that is not involved in environmental accounting disclosure could be seen as striving towards unsustainable development. Thus, it would be unclear to ascertain the level of impact environmental accounting disclosures had on organization's strategies, practices and outcomes. It is on this premise that this study seeks to investigate the effect of environmental accounting disclosures on the return on assets of selected manufacturing firms in Nigeria.

Theoretical Framework

Legitimacy theory

In organization's perspective legitimacy has been defined by Lindblom (1994) in Deegan (2002) as a condition or status which exists when an entity's system is congruent with the value system of the larger social system of which the entity is a part. When a disparity, actual or potential, exists between the two value systems, there is a threat to the entity's legitimacy. Legitimacy theory is derived from political economy theory (Gray et al, 1996 in Kent and Stewart, 2008) and relies on the idea that the legitimacy of a company to operate in society depends on an implicit social contract between the company and society.

Managers continually attempt to ensure that their company complies with its social contract by operating within society's expectations. This suggests that managers have incentives to disclose information that indicates that the company is not in breach of the norms and expectations of society (Deegan and

Blomquist, 2006 in Kent and Stewart, 2008). Organizational legitimacy is summarized by Lindblom (1983) in Mathews and Perera (1996) in the following terms:

i. Legitimacy is not synonymous with economic success or legality.
ii. Legitimacy is determined to exist when the organisation goals, output, and methods of operation are in conformance with societal norms and values.
iii. Legitimacy challenges are related to the size of the organisation and to the amount of social and political support it receives with the more visible being most likely to be challenged.
iv. Legitimacy challenges may involve legal, political or social sanctions.

Mathews and Perera state further that the implications which the notion of organizational legitimacy has for the management of corporation include better communication with society. This enlarged accounting or accountability may be essential for the continued existence of the corporation in its present form. Guthrie and Parker (1989) in Naser, Al-Hussaini Al-Kwari and Nuseibeh, (2006) emphasize that under legitimacy theory, therefore, the company attempts to maintain its survival and continuity by voluntarily disclosing detailed information to society to prove it is a good citizen.

Stakeholder Theory

The traditional definition of a stakeholder is any group or individual who can affect or is affected by the achievement of the organization's objectives' (Freeman 1984 in Fontaine, Harman and Schmid, 2006). The general idea of the stakeholder concept is a redefinition of the organization. In general, the concept is about what the organization should be and how it should be conceptualized. Friedman (2006) in Fontaine et al (2006) stated that the organization itself should be thought of as grouping of stakeholders and the purpose of the organization should be to manage their interests, needs and viewpoints. This stakeholder management is thought to be fulfilled by the managers of a firm.

The managers should, on the one hand, manage the corporation for the benefit of its stakeholders in order to ensure their rights and the participation in decision making and on the other hand the management must act as the stockholder's agent to ensure the survival of the firm to safeguard the long-term stakes of each group. The definition of a stakeholder, the purpose and the character of the organization and the role of managers are very unclear and contested in literature and has changed over the years. Even the 'father of the stakeholder concept' changed his definition over the time.

Freeman (2004) in Fontaine et al (2006) defines stakeholders as 'those groups who are vital to the survival and success of the corporation'. In one of his latest publications, Freeman (2004) in Fontaine et al (2006) adds a new principle, which reflects a new trend in stakeholder theory. In this principle in his opinion, the consideration of the perspective of the stakeholders themselves and their activities is also very important to be taken into the management of companies. He states 'The principle of stakeholder recourse. Stakeholders may bring an action against the directors for failure to perform the required duty of care' (Freeman 2004 in Fontaine et al 2006). All the mentioned thoughts and principles of the stakeholder concept are known as normative stakeholder theory in literature.

Empirical Review

Ifada et al. (2021) examined the effect of environmental performance, independent board of commissioners, and firm size on environmental disclosure measured by the Indonesian environmental index. The population in this study is manufacturing and coal mining companies that follow "PROPER" and are listed on the Indonesia Stock Exchange (IDX) from 2017 to 2019. This research was conducted by reviewing annual reports to collect information on environmental disclosures. The sampling used in this study was purposive sampling technique and obtained a sample of 117. Also, the data analysis technique used was multiple linear regression analysis with statistical hypothesis testing. The results showed that environmental performance, firm size, and financial performance each positively affected environmental disclosure while the independent board of commissioners did not affect environmental disclosure. The findings of this research suggest that environmental performance has a significant positive effect on financial performance.

Badingatus and Ukhti (2021) investigated the quality and scope of environmental disclosure (ED) in environmentally sensitive manufacturing firms in Indonesia. This study employed secondary data which was collected from published annual reports of listed companies on the Indonesian Stock Exchange (ISE). They analyse the effect of media coverage, environmental award, and financial performance on the quality of environmental disclosure and the extent to which the implementation of corporate governance (CG) principles moderate these factors. The study used 135 manufacturing companies listed on the Indonesian Stock Exchange during 2012–2016. Partial least squares– structural equation modelling (PLS-SEM) was employed to test the research hypothesis. The results point out that media coverage and environmental awards can improve the quality of environmental disclosure and the correlation will increase if the company pays attention to the implementation of CG principles.

Agyemang et al. (2021) examined the effect of environmental disclosure on environmental performance for listed mining companies in China. The study analysis used China's Environmental Information Disclosure Degree (EIDD) and the Chinese Securities Regulatory Commission's disclosure guidelines to propose the Environmental Information Disclosure Index. The study employed a recent environmental disclosure index and modified it for environmental performance analysis. A reliability and robustness test was used in the study. Using panel data for thirty-four mining companies from both Shanghai and Shenzhen Stock Exchange for the period 2000–2018, the cointegration estimation analysis showed that corporate environmental performance and environmental information disclosure has a positive and significant relationship at a 1% level. Trend analysis revealed that mining companies comply with environmental information disclosure in China. This was seen from the great improvement in the environmental disclosure for mining companies between 2008 and 2010 after the enforcement of EIDD.

Nimanthi and Priyadarshanie (2021) examined the impact of environmental disclosure practices on firm performance in Sri Lanka. This research relies on secondary data which was collected from published annual reports of listed companies in the Colombo Stock Exchange (CSE). Data was collected from a sample of 50 companies listed under 5 sectors over four consecutive financial years from 2015 to 2018. The technique of content analysis was occupied when measuring the level of environmental disclosures. Environmental Disclosure Index (EDI) was prepared based on the Global Reporting Initiative (GRI) Standards 2019. This study employed a regression analysis for the data analysis. The study's findings revealed a significant positive relationship between environmental disclosures and firm financial performance. However, there is no significant relationship between environmental disclosures and firm market performance.

Abdul et al. (2020) examined the relationship between environmental disclosure and financial performance among the companies in Malaysia, Singapore and Thailand that voluntarily disclose environmental information in their financial reports. Two hundred and fifty (250) companies listed in Bursa Malaysia, Singapore Stock Exchange and Thailand Stock Exchange was studied. From the 250 companies analyzed, 56 companies from Malaysia, 37 companies from Thailand and 15 companies from Singapore were identified as environmental reporting companies and included in the study's sample. The study hypothesizes that high performance companies are more likely to have detailed (that is, one paragraph or more) environmental disclosure. The results however suggest that the performance of the company has no relationship to the production of detailed or superficial environmental disclosure.

Bhuyan, Lodh, and Perera (2017) investigated the impact of corporate social disclosure on firm performance. From 2011 to 2013, the sample included the top 200 companies listed on the Dhaka Stock Exchange in Bangladesh. They analyzed the data using ordinary least square and two-stage least square methods. The findings revealed a link between corporate social disclosure, ROA, market capitalization, and Tobin's Q. Mutiva, Ahmed, and Muiruri-Ndirangu (2017) investigated the link between voluntary disclosure and financial performance. From 2011 to 2013, the sample included 10 listed companies from the NSE 20-share index. They constructed a disclosure checklist consisting of 49 voluntarily disclosed items. They used multiple regression analysis on the data set. The study revealed that there is a strong positive relationship between voluntary disclosure and financial performance, ROI. Musyoka (2017) examined the effect of voluntary disclosure on financial performance in Nairobi. The sample comprised

forty-three firms listed on the Nairobi Securities Exchange from 2006 to 2015. Firm performance was proxied using Tobin's Q. The results revealed that financial policy disclosure, financial liquidity disclosure, research, and development disclosure has a significant effect on firm performance. Investment policy disclosure and sales growth disclosure had no significant effect on firm performance.

Wangari (2014) examined the effect of voluntary disclosure on financial performance in Kenya. The study adopted a descriptive research design. The sample comprised 42 commercial banks from the period 2008 to 2013. The study used secondary data from annual reports. Multiple linear regression was employed to validate the hypotheses. The study found a positive relationship between financial, forward looking and board and social disclosure and return on equity.

Naran (2013) investigated the effects of voluntary disclosure and financial performance in Kenya. The study adopted a descriptive research design. The sample comprised seventeen commercial banks in Kenya. The study used secondary data from annual reports and accounts from 2008 to 2011. The analyzed the data using multiple linear regression. The study found that financial disclosure, board disclosure and forward-looking disclosure were positive; while general and strategic disclosures are negative and Ezejiofor (2013) evaluated the impact of sustainability environmental accounting on company performance and economic growth. This research looked at a variety of items, including journal publications, articles, and other pertinent information. The Pearson Product Movement Correlation Coefficient was used to evaluate and test two hypotheses in this article. As a result, the study discovered that sustainable environmental accounting has a considerable impact on business productivity, which can help companies flourish.

Simsek and Ozturk (2021) examined the impact of environmental accounting on performance of businesses in Istanbul Province. The study used primary data through the administration of structured questionnaire while multiple regression analysis was adopted to test the hypothesis. It was obtained that environmental accounting measured as Planning and Costing, responsibility and Image, environmental sustainability, certification and qualification and environmental consciousness significantly impacted on business performance. Contrarily, Nkwoji (2021) conducted a study on the impact of environmental accounting on profitability of oil and gas companies in Nigeria using secondary source of data, obtained from annual report and accounts of the selected companies; the result of the regression analysis carried out revealed an insignificant relationship between environmental cost and net profit of oil and gas companies listed on the Nigerian Stock Exchange.

Menike (2020) investigated how environmental disclosure impacted the return on asset using secondary data obtained from annual reports of twenty-six (26) food, tobacco and beverages producing firms quoted on the Colombo Stock Exchange. The result of the regression analysis conducted revealed that return on asset was positive and significantly impacted by environmental accounting disclosure and firm size; but insignificantly influenced by liquidity. Omaliko et al. (2020) empirically examined the impact of social and environmental disclosures on performance of non-financial firms in Nigeria, the study adopted ex post facto design and made use of data obtained from the NSE Factbook and published annual financial reports of the entire 112 non-financial firms quoted on NSE with data spanning from 2011-2018. The study found that social and environmental disclosures have significant positive impact on net-asset per share (firms' performance) over the years. The study opined that firms should have positive disposition towards social and environmentally friendly practices.

Kowaleski (2014) examined effect of non-financial information on shareholders' investment decision making explored the statistical test tool of OLS, using the variable of ROA and environmental disclosures as index for non-financial information and found that the level of firms' environmental disclosures influences its performance, and suggested corporate bodies should increase the volume of disclosures in their reports for investors' consumption. Also, Gelb (2017) discovered a significant positive between the level of environmental disclosure of firms and performance measured by ROA in his study on environmental disclosures and corporate performance in Japan.

Adjound and Amar (2015) on effect of non-financial information disclosures on performance of manufacturing firms in France explored the test tool of simple regression emphasizing on the

environmental aspect of non-financial reporting and found that environmental disclosures impacted return on asset positively and significantly. Similarly, Brockman (2015) used OLS estimation technique and found significant positive association between environmental disclosure and firms' performance measured by Net Assets per Share of the selected listed manufacturing firms in Italy. Contrarily, Lang (2016) reported that social and environmental disclosures negatively related with firm's performance of firms.

Nahiba (2017) examined non-financial disclosures and performance of manufacturing firms in India used the variable of environmental disclosures, corporate governance disclosure and firms Net Assets Per Share. The result of the regression model adopted revealed that firms' performance is positively and significantly affected by non-financial disclosures. Also, Yusuf (2016) used dummy variables and explored the test tool of regression model and found significant positive effect between corporate social responsibility disclosure (CSRD) and firms' performance. In contrast, the report of Malarvizhi and Ranjani (2016) revealed insignificant impact of the level of environmental disclosure on firm performance of selected companies listed in Bombay Stock Exchange (BSE), India

Guthrie et al. (2016) in their study on social and environmental reporting and its effect on performance of food and beverage firms in Australia note that quality social and environmental disclosure influences firm's performance. The study explored the use of dummy variable and applied the test tool of OLS and recommended that shareholders should look beyond the quantitative information in the companies report and its footnote. Much emphasis should also be placed also on qualitative information provided in the companies report for investment decision making. This is contrary to the studies of Amran and Siti-Nabiha (2017) in their study on corporate social reporting in Malaysia established simple regression model and found significant negative relationship between corporate social reporting and firms' performance. The study recommended on the relevance of quantitative information sufficed in the companies report.

Ahmed et al. (2016) investigated environmental accounting and firm profitability in Nigeria using ordinary least square regression (OLS). With a sample of 50 listed companies and a cross-sectional research design, data were obtained from annual reports and accounts of the sampled firms. The research evidence showed that a significant relationship exist between environmental accounting and firm's profitability. However, the study revealed a negative relationship when moderated by firm size.

Okafor (2018) evaluated the link between environmental costs accounting and reporting of firm financial performance of listed oil and gas firms in Nigeria. Proxied by cost of environmental remediation and pollution control, cost of environmental laws compliance and penalty, donations and charitable contributions. It was established that environmental performance influence business value positively. Data obtained from five (5) sampled oil and gas firms was analyzed using multiple regression with a panel data model. The study also revealed that, environmental accounting provides organization's an opportunity to reduce environmental and social costs and improve their performance., Etale and Otuya (2018); Onyekwelu and Uche (2014); Nze, Okoh, and Ojeogwu (2016) discovered that positive relationship exist between performance and environmental responsibility reporting in the oil and gas sector of Nigeria. Erhinyoja and Marcella (2019) measured performance as return on asset and return on equity and the result of their regression analysis showed that the commitment of the Nigeria listed oil and gas companies to social and environmental sustainability significantly impact their financial performance.

Agbiogwu et al. (2016) examined the impact of environmental and social costs on performance of Nigerian manufacturing companies. Results showed that environmental and social cost significantly affect earnings per share of manufacturing companies. Adediran and Alade (2013) reported a contrary finding in the same environment that is insignificant negative relationship exist between environmental accounting and earnings per share of Nigeria listed companies while, Sergio and Carmen Pilar (2017) established that environmental practices positively and significantly influence financial performance in developed countries.

Polycarp (2019) conducted a research on environmental accounting and financial performance of oil and gas companies in Nigeria from 2016-2017; measured performance as return on equity, earnings per share

and net profit margin. The result of the multiple regression carried out showed that environmental disclosure has no relationship with financial performance. On the contrary, Nwabueze (2015) examined environmental costs and performance using exploratory research design and multiple regression as techniques of analysis; and found negative and insignificant influence of social and environmental disclosure on EPS; Ahmed et al. (2016) in their study on the impact of social and environmental disclosure on financial performance of listed manufacturing firms in Nigeria proved that environmental disclosure has significant positive impact on earnings per share, and hence profitability of companies. Yahaya (2018) disclosing information regarding a firm's environmental practices may be beneficial to the firm's reputation and by extension help improve firm's financial performance. Nyirenda, Ngwakwe, and Ambe (2013) are of the view that disclosing environmental information has no significant effect on financial performance of firms. According to Magara, Aming, and Momanyi (2015) environmental accounting disclosure is significantly and positively related to financial performance of firms; while Ezejiofor, John-Akamelu, and Chigbo (2016) reported contrary findings using the same environment.

Rakiv, Islam, and Rahman (2016) examined the relationship of financial performance and extent of environmental accounting reporting disclosure in the annual reports. The research disclosed that there is a significant positive relationship between company profitability and environmental accounting reporting. Onyinyechi and Ihendinihu (2016) examined the impact of environmental disclosure and corporate social responsibility accounting on organizational financial performance of firms in Nigeria. The result showed no significant impact between environmental accounting disclosure and financial performance. Gatimbu and Wabwire (2016) assessed the effect of Environmental Disclosure on financial performance of listed firms at the Nairobi Securities Exchange, Kenya. Findings revealed that environmental disclosure has a positive significant effect on financial performance. Utile, Tarbo, and Ikya (2017) discovered that environmental accounting disclosure has significant effect on the performance of Nigeria listed firms. Olayinka and Oluwamayowa (2014) in a study conducted, concluded that the disclosure of the environment information resulted in an improvement in the organization financial performance. Caesaria and Basuki (2017) concluded that environmental accounting disclosure leads to an improvement in the organization's financial performance by improving the confidence of potential investors and creditors, thereby enhancing the image of the organization. Also, Festus and Akinselure (2017) suggested that oil and gas producing companies should give preference to their environment so as to improve their future performance and profitability of their operations.

Amahalu *et al.* (2017) ascertained how corporate social responsibility (CSR) relates with financial performance of quoted deposit money banks in Nigeria from 2010-2016. Specifically, this study aimed to ascertain the extent of relationship that exists between donation and return on assets; determined the extent of relationship that exists between donation and return on equity and to evaluate the extent of relationship between donations and market-to-book value of quoted deposit money banks in Nigeria. The study employed ex-post fact research design. The sample size of this study consists of the fifteen quoted deposit money banks in Nigeria. Pearson Coefficient Correlation, Panel Least Square (PLS) regression analysis and Granger Causality test were employed via E-View 9.0. The study found a significant positive relationship between return on asset, return on equity, market-to-book value and donations at 5% level of significance. The implication of the findings is that CSR implementation maximizes future returns for deposit money banks in Nigeria. It was recommended among others that since CSR have a positive and significant relationship with financial position, deposit money banks should engage in CSR practices as this will guarantee a safer environment for smooth operations and maximization of shareholders wealth.

Okafor (2018) ascertained the effect of environmental costs on firm performance. To achieve the objective, the study made use of financial reports of Oil and Gas Companies quoted in the Nigerian Stock Exchange Market from years 2006-2015. Regression analysis was employed with the aid of Statistical Package for Social Sciences (SPSS). The results of the statistical analysis indicated that better environmental performance positively impact business value of an organization. Moreover, environmental accounting provides the organization an opportunity to reduce environmental and social costs and improve their performance.

Nyirenda *et al.* (2018) examined the impact of environmental management practices on the financial performance of a South African mining firm. The major aim of the study was to investigate whether such practices have a close relationship with the mining firm's financial performance (represented by return on equity [ROE]). The approach was a case study of a South African mining firm listed under the socially responsible index (SRI) of the Johannesburg Stock Exchange (JSE). It uses Green-Steel (pseudonym used in place of the real name) as a case study. Using multiple regression statistics, the return on equity of Green-Steel regressed on three environmental management practices of Green-Steel (carbon reduction, energy efficiency, and water usage). The result showed there is no significant relationship between the variables and this lends credence to information gathered from Green-Steel environmental reports that Green- Steel's environmental management practices are driven mostly by a desire to abide by regulations and also by a moral obligation to use environmental management practices to mitigate climate change impact

Togun and Nasieku (2015) examined the impact of CSR on the performance of listed manufacturing entities in Nigeria. Simple random sampling and stratified sampling were used to select the sample of 15 out of 74 companies from the five distinct sectors of the manufacturing industry. The research finding shows that CSR activities have a moderate positive effect on the performance of manufacturing companies. Fu and Shen (2015) analyzed the connectivity between CSR and financial performance of sixty-three food processing Chinese companies with the guidance of stakeholder's theory. They have concluded a positive relationship CSR and financial performance.

METHODOLOGY

This study used ex-post facto research design; the population for the purpose of this study consists of all the sixty-four (64) manufacturing firms which are listed on the Nigerian Stock Exchange (CBN, 2020). The manufacturing sector was chosen because it remains the most powerful engine for economic structure of countries (Jide, 2010). The sources of data include annual reports and accounts of companies selected for this study between the eight years period of 2016 and 2020. The choice of this period is based on the availability of data. Other sources include textbooks, journals and the internet. Data was obtained from corporate environmental reports from the websites of the sample firms. The web page version was preferred over the printed version in order to ensure that the reports were expeditiously gathered. Comparison of hard copy and web reports from the subsample of companies exposed no substantive differences in the content of the reports. These financial statements are validated by the acceptance of the statement by the Securities and Exchange Commission being the singular most authoritative financial medium that has consistently over the years published the financial reports of firms in Nigeria for over 19 years with close monitoring (Bessong and Charles, 2012). With respect to this, information from Stock Exchange Market are considered reliable for financial and environmental measurement of the company's Annual reports are generally considered by management and outsiders to be the most important and influential source of corporate information (Ndukwe, 2009).

Model Specification

In order to test for the relevance of the hypotheses regarding the relationship between environmental cost disclosure and financial performance of manufacturing companies listed on the Nigerian Stock Exchange, This study employ a modified version of the econometric model of Duke and Kanpang (2013).

ROE = f(EMC, EIC) (1)

EPS = f(EMC, EIC) (2)

$$\text{ROE} = \alpha_0 + \beta_1 EMC + \beta_2 EIC + \varepsilon i \quad (3)$$

$$\text{EPS} = \alpha_0 + \beta_1 EMC + \beta_2 EIC + \varepsilon i \quad (4)$$

Where:

ROE = Return on Equity measures as profit after tax to total equity
EPS = Earnings per share
EMC = Environmental maintenance cost measured by sanitation cost to total operating cost
EIC = Environmental investment cost measured by cost of donations and development to operating cost
FS = Firm size as log of total assets
ί = Error term

β = Beta

In an effort to estimate the goodness of fit of the models Mc Fadden R^2 is used. Apart from using the R^2, Correlation Matrix, Tolerance Value, and Variance Inflation Factor are also adopted in order to address Multi-Collinearity problems. All these analyses are to be done by using E- VIEW 9.0 software. Regression models are used because they are flexible, powerful, and produce optimal results in predicting numeric output when properly structured. They also allow examining the effect of many different factors on some outcome at the same time.

Prior Expectation of the Result

The explanatory variables are expected to have positive and direct effects on the dependent variables. That is a unit increase in any of the variables is expected to increase market value of quoted entrepreneurial firms.

Data analysis and Model Specification

The study used multiple regression defined as an equation with one dependent variable and more than one independent variables, the technique used in this study is the Ordinary Least Square (OLS) estimation technique. The test instruments in the OLS are the T-statistics and F-test which were used to test the significance of variables and the overall significance of the regression respectively. Other test instruments also employed were the Durbin Watson test which was used to test the presence or absence of auto correlation between and among the explanatory variables and the adjusted R square used to test the percentage variation of the dependent and the independent variables.

Hausman Test

Since random effects model is invalid when heterogeneity exist, meaning that error term is correlated with explanatory variables, Hausman test is often used to test whether a variable can be treated as exogenous or whether that variable needs a separate structural equation. Hausman test refers to a test for whether a random effects approach to panel regression is valid or whether a fixed effects model is necessary (Brooks, 2014). We exercise Hausman test by E-views, with the null hypothesis that random effects model can be applied.

ANALYSIS AND DISCUSSION OF FINDINGS

Table 1: Hausman Test of the Models

$$\text{ROE} = \alpha_0 + \beta_1 EMC + \beta_2 EIC + \varepsilon i$$

Correlated Random Effects - Hausman Test			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	23.072385	3	0.0000

$$\text{EPS} = \alpha_0 + \beta_1 EMC + \beta_2 EIC + \varepsilon i$$

Correlated Random Effects - Hausman Test			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	9.443260	3	0.0054

Source: extract from e-view 9.0, 2026

Following the various methods of panel data analysis, the question of which is the most appropriate or suitable methods arises. Therefore, some means of selecting the most suitable method among the different

approaches especially between the fixed effect model (FEM) and random effect model (REM) is needed. But when such a correlation exists, the Fixed Effects Model would be more suitable because the random effect model would be inconsistently estimated. From the table above the probability of the Hausman test is less than 0.05, therefore, the study adopt the fixed effect model.

Table 2: Presentation of Pooled Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROE = $\alpha_0 + \beta_1 EMC + \beta_2 EIC + \varepsilon i$				
ECM	-1.361790	0.804202	-0.485625	0.6280
EIC	-0.341553	0.088520	-3.858486	0.0002
C	8753278.	0.049934	4.270029	0.0000
R-squared	0.642150	Mean dependent var		18200746
Adjusted R-squared	0.634797	S.D. dependent var		37741610
S.E. of regression	22808012	Akaike info criterion		36.74943
Sum squared resid	7.59E+16	Schwarz criterion		36.82971
Log likelihood	-2752.207	Hannan-Quinn criter.		36.78204
F-statistic	87.33085	Durbin-Watson stat		1.309022
Prob(F-statistic)	0.000000			
EPS= $\alpha_0 + \beta_1 EMC + \beta_2 EIC + \varepsilon i$				
ECM	-6.084879	5.683872	-1.070552	0.2861
EIC	0.112935	0.071755	1.573902	0.1177
C	-3898492.	4155037.	-0.938257	0.3497
R-squared	0.023283	Mean dependent var		-3268444.
Adjusted R-squared	0.003214	S.D. dependent var		46304305
S.E. of regression	46229838	Akaike info criterion		38.16245
Sum squared resid	3.12E+17	Schwarz criterion		38.24274
Log likelihood	-2858.184	Hannan-Quinn criter.		38.19507
F-statistic	1.160135	Durbin-Watson stat		1.614422
Prob(F-statistic)	0.327135			

Source: Extract from E-view 9.0, 2026

Analysis of Results

F-Test: The F-calculated value is 87.33085, 1.160135 and probability of 0.000000 and 0.327135 considering the P-value, the chosen level of significance α =0.05 [5%] is less than the P-value of F-statistic. It is concluded that the regression model is statistically significant in explaining the relationship between environmental cost disclosure and return on equity but not significant in explaining return on equity of the oil and gas firms. This means that the joint influence of the explanatory variables on the dependent variable is not statistically significant.

Coefficient of Multiple Determination (R^2): The computed coefficient of multiple determination (Adjusted R^2) of 0.6347970 and 0.003214 from the pooled regression results indicates that 63.4 and 0.03 percent of the total variations in the net assets and net profit margin of the manufacturing is accounted for, by the explanatory variables while the remainder is attributed to variable is attributable to the influence of other factors not included in the regression model.

Durbin Watson statistics (DW): The computed DW is 1.309022 and 1.614422 from the pooled results shows that at 5% level of significance with two explanatory variables, the DW for dL and du are 0.861 and 1.562 respectively. The value of computed DW is greater than the lower limit. Therefore, there is no evidence of positive first order serial correlation.

Table 3: Fixed Effect Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
$ROE = \alpha_0 + \beta_1 EMC + \beta_2 EIC + \beta_3 EC + \varepsilon i$				
ECM	-10.94380	2.863139	-3.822309	0.0002
EIC	-0.371002	0.075737	-4.898578	0.0000
C	14255184	1933595.	7.372373	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.759344	Mean dependent var		18200746
Adjusted R-squared	0.738264	S.D. dependent var		37741610
S.E. of regression	19308645	Akaike info criterion		36.47268
Sum squared resid	5.11E+16	Schwarz criterion		36.73360
Log likelihood	-2722.451	Hannan-Quinn criter.		36.57869
F-statistic	36.02307	Durbin-Watson stat		1.350028
Prob(F-statistic)	0.000000			
$EPS = \alpha_0 + \beta_1 EMC + \beta_2 EIC + \varepsilon i$				
ECM	-13.49806	6.304607	-2.140983	0.0340
EIC	0.035732	0.086405	0.413545	0.6799
C	-490003.6	4257761.	-0.115085	0.9085
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.224777	Mean dependent var		-3268444.
Adjusted R-squared	0.156875	S.D. dependent var		46304305
S.E. of regression	42517477	Akaike info criterion		38.05141
Sum squared resid	2.48E+17	Schwarz criterion		38.31233
Log likelihood	-2840.856	Hannan-Quinn criter.		38.15741
F-statistic	3.310283	Durbin-Watson stat		1.942404
Prob(F-statistic)	0.000310			

Source: Extract from E-view 9.0, 2026

Analysis of Results

F-Test: The F-calculated value is 87.33085, 3.310283 and probability of 0.000000 and 0.000310 considering the P-value, the chosen level of significance α =0.05 [5%] is less than the P-value of F-statistic. It is concluded that the regression model is statistically significant in explaining the relationship between environmental cost disclosures and return on equity and significant in explaining share price of the oil and gas firms. This means that the joint influence of the explanatory variables on the dependent variable is not statistically significant.

The computed coefficient of multiple determination (Adjusted R^2) of 0.738264 and 0.156875 from the fixed regression results indicates that 73.8 and 15.6 percent of the total variations in the return on equity and share price of the manufacturing is accounted for, by the explanatory variables while the remainder is attributed to variable is attributable to the influence of other factors not included in the regression model.

The computed DW is 1.350028 and 1.942404 from the pooled results shows that at 5% level of significance with two explanatory variables, the DW for dL and du are 0.861 and 1.562 respectively. The value of computed DW is greater than the lower limit. Therefore, there is no evidence of positive first order serial correlation.

Table 4: Random Effect Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
	$ROE = \alpha_0 + \beta_1 EMC + \beta_2 EIC + \varepsilon i$			
ECM	-6.070463	2.640413	-2.299058	0.0229
EIC	-0.361156	0.075491	-4.784095	0.0000
C	11419872	3009938.	3.794056	0.0002
	Effects Specification			
			S.D.	Rho
Cross-section random			7547254.	0.1325
Idiosyncratic random			19308645	0.8675
	Weighted Statistics			
R-squared	0.544186	Mean dependent var		10031742
Adjusted R-squared	0.534820	S.D. dependent var		30193513
S.E. of regression	20593212	Sum squared resid		6.19E+16
F-statistic	58.10208	Durbin-Watson stat		1.293275
Prob(F-statistic)	0.000000			
	Unweighted Statistics			
R-squared	0.617512	Mean dependent var		18200746
Sum squared resid	8.12E+16	Durbin-Watson stat		1.013305
	$EPS = \alpha_0 + \beta_1 EMC + \beta_2 EIC + \varepsilon i$			
ECM	-11.06410	5.962584	-1.855588	0.0655
EIC	0.066946	0.079651	0.840486	0.4020
C	-1726294.	8193171.	-0.210699	0.8334
	Effects Specification			
			S.D.	Rho
Cross-section random			22427990	0.2177
Idiosyncratic random			42517477	0.7823
	Weighted Statistics			
R-squared	0.030119	Mean dependent var		-1436925.
Adjusted R-squared	0.010190	S.D. dependent var		42507333
S.E. of regression	42290196	Sum squared resid		2.61E+17
F-statistic	1.511332	Durbin-Watson stat		1.862139
Prob(F-statistic)	0.214061			
	Unweighted Statistics			
R-squared	0.012807	Mean dependent var		-3268444.
Sum squared resid	3.15E+17	Durbin-Watson stat		1.568448

Source: extract from e-view 9.0, 2026

Analysis of Results

The F-calculated value is 58.10208, 1.511332 and probability of 0.000000 and 0.214061 considering the P-value, the chosen level of significance α =0.05 [5%] is less than the P-value of F-statistic. It is concluded that the regression model is statistically significant in explaining the relationship between environmental cost disclosure and return on equity significant but not significant in explaining share price of the oil and gas firms. This means that the joint influence of the explanatory variables on the dependent variable is not statistically significant.

The computed coefficient of multiple determination (Adjusted R^2) of 0.534820 and 0.010190 from the fixed regression results indicates that 53.4 and 0.1 percent of the total variations in the return on equity and share price of the manufacturing is accounted for, by the explanatory variables while the remainder is attributed to variable is attributable to the influence of other factors not included in the regression model.

The computed DW is 1.293275 and 1.568448 from the pooled results shows that at 5% level of significance with two explanatory variables, the DW for dL and du are 0.861 and 1.562 respectively. The

value of computed DW is greater than the lower limit. Therefore, there is no evidence of positive first order serial correlation.

DISCUSSION OF FINDINGS

The first study objective was to examine the relationship between environmental maintenance cost and return on equity of the oil and gas firms. The findings of this study indicate that there is negative and significant relationship between c environmental maintenance cost and return on equity of the oil and gas firms. The estimated regression coefficient from the fixed effect model indicate that with the value of -0.371002, a unit increase in environmental maintenance cost will lead to 0.3 percent fall on the return on equity of the oil and gas firms. This finding contradicts our a-priori expectation and validates the objective of green accounting and corporate social responsibility. The findings proved that the manufacturing is not committed in ensuring development of host communities. The findings of this study contradict the findings of Lyndon & Binglar (2013 showed a significant relation that exists between performance of organizations and sustainable business practices. Enahoro (2009) that there are crystal clear system of tracking environmental cost, majorly there is difference disclosure issues among the quoted companies as some the organization do not a good understanding of green accounting. Onyekwlu and Ekwe (2014) that corporate social responsibility varies between individual banks and the sampled banks commit less than 10% of annual profit to CSR. The researchers concluded by saying that companies should take CSR seriously as it has the potency of increasing profitability and also reduce the restiveness in their areas of operation.

The second study objective was to examine the relationship between environmental maintenance cost and share price of the oil and gas firms. The findings of this study indicate that there is negative and no significant relationship between environmental maintenance cost and share price of the Nigeria oil and gas firms. The estimated regression coefficient from the fixed effect model indicate that with the value of -0.058499, a unit increase on environmental maintenance cost will lead to 0.05 percent fall on the share prices of the oil and gas firms. This finding contradicts our a-priori expectation and validates the objective of green accounting and corporate social responsibility. The findings also proved that the manufacturing is not committed in ensuring development of host communities. The findings of this study contradict the findings of Lyndon & Binglar (2013 showed a significant relation that exists between performance of organizations and sustainable business practices. Enahoro (2009) that there are crystal clear system of tracking environmental cost, majorly there is difference disclosure issues among the quoted companies as some the organization do not a good understanding of green accounting. Onyekwlu and Ekwe (2014) that corporate social responsibility varies between individual banks and the sampled banks commit less than 10% of annual profit to CSR. The researchers concluded by saying that companies should take CSR seriously as it has the potency of increasing profitability and also reduce the restiveness in their areas of operation.

The third study objective was to examine the relationship between environmental investment cost and return on equity of the oil and gas firms. The findings of this study indicate that there is negative but significant relationship between environmental investment cost and return on equity of the Nigeria oil and gas firms. The estimated regression coefficient from the fixed effect model indicate that with the value of -10.94380, a unit increase on environmental investment cost will lead to 10.9 percent decrease on the net assets of the oil and gas firms. This finding contradicts our a-priori expectation and validates the objective of green accounting and corporate social responsibility. The findings proved that the manufacturing is committed in ensuring development of host communities. The findings of this study contradict the findings of Appah (2014) that reporting of social cost and the disclosure of such information by Nigerian companies has the tendency of enhancing information disclosure in annual reports of organization. Holm and Richardsson (2008) that companies that are apathetic to their environmental costs or responsibility might experience eventual crashes on their stock price if their investors are rational in decision making considering the future value of the firm based on its present state of environmental responsibility.

The fourth study objective was to examine the relationship between environmental investment cost and share prices of the oil and gas firms. The findings of this study indicate that there is negative but insignificant relationship between environmental investment cost and share prices of the Nigeria oil and gas firms. The estimated regression coefficient from the fixed effect model indicate that with the value of -13.49806, a unit increase on environmental investment cost will lead to 13.4 percent decrease on the share price of the oil and

gas firms. This finding contradicts our a-priori expectation and validates the objective of sustainable accounting and corporate social responsibility. The findings of this study confirm the findings of Appah (2014) that reporting of social cost and the disclosure of such information by Nigerian companies has the tendency of enhancing information disclosure in annual reports of organization. Holm and Richardsson (2008) that companies that are apathetic to their environmental costs or responsibility might experience eventual crashes on their stock price if their investors are rational in decision making considering the future value of the firm based on its present state of environmental responsibility.

The fifth study objective was to examine the relationship between firm's size and its moderating effect on environmental cost disclosure and financial performance. The findings of this study indicate that there is negative and no significant relationship between environmental economic cost and return on equity of the Nigeria oil and gas firms. The estimated regression coefficient from the fixed effect model indicate that with the value of 0.399397, a unit increase on environmental economic cost will lead to 0.399 percent increase on the return on equity of the oil and gas firms. This finding confirms our a-priori expectation and validates the objective of sustainable and corporate social responsibility. The findings proved that the manufacturing is committed in ensuring development of host communities. The findings of this study confirm the findings of Appah (2014) that reporting of social cost and the disclosure of such information by Nigerian companies has the tendency of enhancing information disclosure in annual reports of organization. Holm and Richardsson (2008) that companies that are apathetic to their environmental costs or responsibility might experience eventual crashes on their stock price if their investors are rational in decision making considering the future value of the firm based on its present state of environmental responsibility.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The study found that 87.33085, 3.310283 and probability of 0.000000 and 0.000310 considering the P-value, the chosen level of significance $\alpha = 0.05$ [5%] is less than the P-value of F-statistic which means that the joint influence of the explanatory variables on the dependent variable is not statistically significant. 73.8 and 15.6 percent of the total variations in the return on equity and share price of the manufacturing is accounted for, by the explanatory variables while the remainder is attributed to variable is attributable to the influence of other factors not included in the regression model. The first study objective finding indicates that there is negative and significant relationship between environmental maintenance cost and return on equity of the Nigeria oil and gas firms. The second study objective findings indicate that there is negative and significant relationship between environmental maintenance cost and share price of the Nigeria oil and gas firms. The third study objective findings indicate that there is negative and significant relationship between Environmental investment cost and return on equity of the Nigeria oil and gas firms. The forth study findings indicate that there is negative and significant relationship between Environmental investment cost and share price of the Nigeria manufacturing while The fifth and sixth study findings indicate that there is positive and significant relationship between Environmental maintenance cost, return on equity and share prices of the Nigeria oil and gas firms.

Recommendations

i. Manufacturing firms should ensure proper management of community development costs to enhance their profitability. This should include, among other measures, the development of an environmental conservation cost budget as well as the facilitation of effective and efficient implementation.

ii. Nigeria manufacturing firms should ensure that expenditure on environmental costs reflect responsive social responsibility policy as dictated by international best practice. Such a policy should be implemented effectively by the firms in order to meet stakeholders' expectations.

iii. The manufacturing firms should take all necessary measures to avoid the payment of fines and penalties. To ensure this, they should strictly comply with environmental regulations as specified by the regulatory agency of the manufacturing industry.

iv. Government agencies should give tax credit, subsidies and financial/non-financial awards to organizations that comply with its environmental laws of the land which will encourage environmental reporting. · Manufacturing firms on their part should ensure that they comply with the environmental laws of the nation as it will go a long way in enhancing their performances.

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