

Environmental Conservation Costs and Performance of Manufacturing Companies Listed in Nigeria

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Abstract: The performance of manufacturing companies has become something worrisome as performance has been on the decline over years from Accounting literature. Nigerian businesses do not have access to environmental accounting guidelines or pollution cost guidelines for communicating with various stakeholder groups; however, the government has made efforts to enact laws to improve environmental sustainability in Nigeria. This study investigated the effect of Environmental Conservation Cost on financial performance of listed manufacturing firms in Nigeria. An ex-post facto research design was used in the study. The study population consisted of 35 consumer firms as of December 31, 2021. A sample size of 10 firms was chosen using a purposive sampling technique for the 10 years (2012-2021). Data were sourced from annual reports, and their accuracy and reliability were certified by external auditors. Data were analyzed using descriptive and inferential (multiple regression) statistics at a 0.05 level of significance. The study found that Environmental Conservation Cost had a significant effect on Earnings per Share and Net Profit Margin of listed firms respectively ($\text{Adj } R^2 = 0.766$, F-Stat (5,96) = 35.460, $p < 0.05$); ($\text{Adj } R^2 = 0.813$, F-Stat (5,96) = 82.153, $p < 0.05$). The study concluded that Environmental Conservation Costs had a significant effect on the financial performance of listed manufacturing firms in Nigeria. The study recommended that the Management of firms should allocate more resources to training and engagement cost to foster innovation, improve operational efficiency, stay competitive in the market and experience improved financial performance.

Keywords: Earnings per share, Environmental conservation cost, Financial performance, Net profit margin, Training and engagement cost

I. Introduction

The pursuit of sustainable development has gained significant attention in recent years, emphasizing the need for businesses to integrate environmental conservation practices into their operations (Falope et al., 2019). As environmental concerns continue to grow globally, industries that have a significant impact on the environment are under increasing pressure to adopt environmentally responsible practices. The manufacturing industry in Nigeria is one such sector that plays a vital role in economic development but often faces criticism for its potentially negative environmental impact (Ezeagba, 2017). Some construction companies in Nigeria extract natural resources, such as stone, gravel, and sand, for construction and infrastructure development. However, these activities can result in environmental degradation, including deforestation, land degradation, air and water pollution, and ecosystem disruption. As a result, there is a growing recognition of the need for these companies to proactively address these environmental challenges and invest in conservation measures (Nwaiwu & Oluka, 2018).

Businesses around the world are realizing that environmental cost needs to be accommodated in their business models. Quinn and Dalton (2009) have argued that business practices are destroying life on earth and there is no polite way to say that business is destroying the world. Businesses as part of modern society and part of the problem must also be part of the solution (Dunphy, Benveniste, Griffiths & Sutton, 2000). The organizations role as the solution provider is important because organizations are the primary players in economic development and have the financial backing, technological know-how, and the institutional capacity to implement sustainable solutions. If they do not proactively incorporate environmental aspects into their business models, they are bound to experience a negative reaction through the media, public perception, brand reputation, government regulation, customer satisfaction, employees, shareholders' revolts, communities or organization trying to protect the environment. Today's, unfavourable environmental effect on economic development has become worrisome. The collective ecological footprint of the planets population is unsustainable and the current trends of growth and environmental degradation suggest we are going to encounter more problems in the future.

Measuring environmental performance and setting targets is a critical component for organizations to become more productive, more profitable, and more sustainable. The disclosure requirements of environmental cost information in corporate annual reports and their determinants have attracted considerable research attention in developed countries rather than developing ones (Akhtaruddin, 2005; Barako, 2007). Also, the limited awareness of environmental costing principles and methodology has

become an important issue to be addressed. If environmental issues and activities that are vital are not disclosed, financial statement cannot be said to present a true and fair view of affairs.

According to Bassey et al., (2013), environmental cost accounting helps the firm to record all environmental costs incurred by the business thereby finding a way of reducing the cost (environmental expenses) so that the business can increase profit. Also environmental cost accounting helps to disclose to the outside world the ability of the organization to be environmental friendly.

Ugochukwu and Ertel (2012) posited that environmental pollution arising from oil prospecting and exploration in the Niger Delta area of Nigeria has impacted negatively on the biodiversity of the affected areas. The main stresses arise from leakages of crude oil, gas flaring and the escape of other chemicals used in production processes. Effects on the flora and fauna of freshwater ecosystems in this part of Nigeria have been noticed. This is not far from the havoc air pollution from other manufacturing companies are causing at their various locations. In some occasions, the host communities have protested both peacefully and violently leading to loss of revenue.

Nigerian businesses do not have access to environmental accounting guidelines or pollution cost guidelines for communicating with various stakeholder groups; however, the government has made efforts to enact laws to improve environmental sustainability in Nigeria (Olushola, 2020). These laws include the National Environmental Standards and Regulations Enforcement Agency Act of 2004 and the Environmental Impact Assessment Act of 2004. They also contain the Environmental Guidelines and Standards for Petroleum Industry Act of 2002. Corporate entities that use environmental accounting, however, adopt specific guidelines from the GRI (Global Reporting Initiative) Guidelines.

Several policies and reforms have been put in place by the government such as the Environmental Protection Agency (EPA) that has to a very large extent affected Environmental disclosures positively and companies are now complying to a large extent in which stakeholders are now being able to know the impact of environmental disclosures on performance of business which brings about sustainable business growth (Mohamed & Faouzi, 2021).

Against these backdrops, it therefore becomes imperative and pertinent to conduct a study on Environmental conservation cost and sustainable business growth of listed manufacturing firms in Nigeria.

Consequently, various studies have been undertaken on environmental cost accounting and how it affects organizational performance. Agboet al., (2017) examined the effect of environmental cost on financial performance of Nigerian Brewery from 2011-2015. This study is an expansion on the scope of the work of Agbo et al., (2017) to include different firms in manufacturing sectors of the Nigerian economy from 2012 to 2021 in a panel data analysis.

The objective of the study was to empirically investigate the effect between Environmental Conservation cost and performance of Listed Manufacturing firms in Nigeria with specific objectives:

- i. To evaluate the effect between Environmental conservation cost and Gross Profit Margin of listed manufacturing firms in Nigeria
- ii. To ascertain the effect between Environmental conservation cost and Return on Assets of listed manufacturing firms in Nigeria

Research Hypotheses

H₀₁: There is no significant effect of Environmental conservation cost on Gross Profit Margin of listed manufacturing firms in Nigeria

H₀₂: There is no significant effect of Environmental conservation cost and Return on Assets of listed manufacturing firms in Nigeria

II. Literature Review/Theoretical Review

2.1 Conceptual Review

2.1.1 Financial Performance

The performance of firms is assessed in different perspectives using financial as well as non-financial indicators of banks. In contrast, structural approaches are based on theoretical models of banking behavior such as efficient and profit frontiers. The efficiency measures how best a firm performs over the other firms in the industry in the process of converting inputs into outputs.

To assess financial performance, banks and other financial institutions are being evaluated using a combination of financial ratios and benchmarking as indicators of performance relative to objectives (Wasiu et al., 2022). There are several elements that influence the advancement of a company's financial performance, and most studies have divided the variables that influence the performance of banks into categories. In addition to the state of various subsidiaries or divisions (for example, small or associated with support units, unit subsidiaries, or numerous divisions), the situation and size of the bank are examples of non-financial

aspects to take into consideration. There is increasing competition in the national and international banking markets, and developments in the banking system, as well as new technological developments, indicate significant revolutions in the banking environment, which place a burden on all banks to make appropriate arrangements to compete in the new competitive financial environment.

Nwaimo (2020) identified three distinct areas that contribute to a firm's performance: financial performance, market performance, and shareholders returns. Financial performance is a measure of an organization's financial health over time (Farrukh & Faizan, 2016). Kenton (2018) defined financial performance as a subjective measure of a firm's ability to use its assets and generate revenue.

It is a general measure of a firm's financial health that can be used for comparison across industries. Financial performance evaluates a business's profitability and financial strength (Kenedy & Macmilan, 2017), and is measured in terms of the firm's return on investment, assets, equity, capital employed, and profitability (Okafor, 2018; Ijaz & Naqui, 2016). Financial performance is crucial in enabling management to report on the firm's profitability, value, and growth to shareholders (Olasupo et al., 2017).

Solomon (2020) defines financial performance as the achievement of organizational objectives and policies in monetary terms. This is important for management to provide stewardship accounting to shareholders. Financial performance can be measured by comparing the starting point of a business to its target points within a specific timeframe.

2.1.1.1 Earnings Per Share

Earnings per share is an indicator that provides an assurance to the investor that investment impacts positively on the investors and a revelation of the successes of the company's management. Earnings per share can be described as a ratio which represents the amount of returns or profit per share to the shareholders and it specifies the amount of income or earnings on ordinary shares in any given accounting period. This ratio can be obtained by dividing the net income after tax with the number of outstanding ordinary shares. EPS is found to be one of the most popular and most widely used measure of financial performance, critical to key strategic financial decision making on merger and acquisition negotiations for instance (Rachmawati, 2021) providing an insight that an investment will render positive return to the investor (Badruzaman, 2020).

Earnings per share is a figure that can provide a clear and adequate information on performance of a company. It is considered as one of the most popular and most widely used measure of performance and it is adopted in taking wide key strategic financial decisions such as merger, acquisition, take over among other key decisions taken by the top management. Sumatri et al. (2021) focused on main determinants of bank profitability for financial institutions listed on the Indonesia Stock Exchange during the period of 2015–2019. Bank profitability was proxied by earnings per share, debt to equity ratio, and price to book value, while return on equity was regarded as a predictor. The authors concluded that the chosen predictor was relevant for shaping all of the profitability ratios.

2.1.1.2 Net profit margin

The net profit margin is a financial tool used to calculate the proportion of profit generated by banks from their total revenue sources. It calculates how much net profit a bank makes on every naira of revenue generated. It considers how much profit the firm retains after subtracting all expenditures involved in producing income. Net profit margin is sometimes referred to as net margin. On an income statement, net profits are identical to net income, and the term may be used interchangeably. One of the most crucial indications of a company's financial health is its net profit margin. Deposit money banks, may examine whether the institution's existing methods are working and estimate earnings based on income by analyzing growth and losses in its net profit margin. Comparison of banks' financial performance is possible by adopting net profit margin irrespective of the size because net profit margin is expressed in percentage rather than in a naira (Ibe, 2018).

Consequently, investors can effectively ascertain whether management of deposit money banks are generating enough profits from their earnings and also if operational and administrative expenditures are properly managed. This is important, as banks' earnings may be rising, while the net profit margin may be falling due to increasing operating cost, which implies that operating expenses are rising more than earnings. The net profit margins of listed deposit money banks are reported quarterly and annually in the financial statements. Companies, including banks, with consistent growth in net profit margins are likely to experience capital appreciation in their shares as profits, as growth is related to appreciation in share price (Murphy, 2020). However, it is important to mention that an extra-ordinary item (disposal of assets) may cause unusual upward movement on net profit margin and therefore, needs to be closely examined while reviewing bank's financial performance. Also, a low net profit margin may be seen as a sign of poor leadership, inefficient pricing model and bad business model, while the opposite signal efficiency and profitability (Corporate Finance Institute, 2020).

2.1.2 Environmental Conservation Cost

Environmental losses and environmental measures together make up environmental expenses. They include the costs of cleanup,

recycling, and energy conservation, as well as the costs of closure, capital expenses, and development expenses. These expenses are related to resource conservation and environmental damage prevention, mitigation, and repair. Environmental losses, however, are expenses that the business must pay for. For instance, fines, penalties, compensation, and disposal losses associated with property that must be scrapped or abandoned due to environmental damage (Noe, Hollenbeck, Gerhart, & Wright, 2006). Environmental costs are the costs incurred by an entity as a result of its operations on the environment and its users. There is also the widespread worry that environmental costs limit operating flexibility and lower business output.

Environmental costs are expenses related to the production, identification, remediation, and prevention of environmental degradation, according to Hansen and Mowen (2000). Green accounting, also known as environmental accounting, is described by the US Environmental Protection Agency (EPA) (1995) as the process of calculating the costs of environmental goods and activities and using that data to make environmental management decisions. Recognizing and working to reduce harmful environmental effects of systems and activities is the goal. According to Howes (2002), environmental accounting is the creation, evaluation, and application of small-scale environmental information with the purpose of enhancing business environmental and financial performance. The author believes that environmental accounting not only concentrates on internal and external environmental accounting but also more clearly connects environmental and financial performance. An organization's culture and operations can become more environmentally sustainable with the help of environmental accounting (Ibemgbor, 2011).

2.1.2.1 Regulatory and Compliance Cost

The importance of environmental conservatism leads to the provision of rules and regulations. These laws are to ensure compliance and encourage activities that will environmental preservation. Companies are no longer appraised based on their economic viability but rather on concerted efforts made at preserving the environment (Sekerez, 2017). Based on this, the costs of complying with policies or practices aligned with environmental conservatism form the basis of this study. These costs can vary depending on the specific actions taken and the scale of implementation. These costs often include expenditures for personnel, equipment, research, monitoring, and enforcement (Dubey, 2022).

2.1.2.2 Training and Engagement Cost

The concept of training and engagement costs are the costs associated with educating and motivating people to participate in environmental conservation efforts. It is the cost of activities embarked upon in ensuring that environmental conservatism efforts are successful. Additionally, these costs may include the expenses associated with environmental education, public awareness campaigns, and the implementation of sustainable policies and regulations (Act-Ifurueze et al., 2013).

2.1.2.3 Restoration Cost

Environmentalists have focused on programs that try to preserve the environment. Organizations have an impact on the environment in one way or another. Restoration of the environment involves spending money. These expenses must be compared to the potential advantages. The costs involved in restoring a damaged environment to its pre-damage condition are referred to as restoration costs. These expenses cover investments made in initiatives including habitat restoration, replanting, pollution prevention strategies, and the creation and upkeep of protected areas. According to Bayraktarov et al. (2016), rehabilitation involves replacing structural or functional aspects of an ecosystem that have been lost or weakened whereas restoration involves helping a degraded, damaged, or destroyed environment recover.

2.2 Theoretical Review

2.2.1.StakeholdersTheory

After the stakeholders' theory was first published in 1970, Freeman (1984) widened its applicability to a wider range of stakeholders. The stakeholder theory, according to Freeman (1984), asserts and maintains that a corporation has a stewardship commitment towards a variety of stakeholders, including customers, suppliers, employees, the government, the community, the environment, and future generations. A firm's relationship with the society in which it operates can be strengthened through integrated sustainability reporting, and failing to take stakeholder interests into account may have a negative impact on the firm's reputation, which would then have a negative impact on operational and financial performance, according to King (2002).

Environmental accounting, according to Lawal (2012), is based on the notion that businesses are systems that take into account both the interests of owners and the interests of other groups within the context of the environment in which they operate. The agency theory views businesses as a network of interactions between shareholders and management, which is the opposite of this point of view. According to the environmental accounting perspective, businesses cannot operate or exist in isolation from their immediate surroundings, and when making strategic decisions, it is important to take into account the interests of all relevant parties, including those of employees, clients, suppliers, governmental agencies, and local communities. As a result, businesses should consider all stakeholders' expectations in addition to those of their shareholders. This approach recognizes that businesses have a duty to act in a socially and ecologically responsible manner and to consider how their choices may impact the greater community.

The notion holds that businesses should conduct sustainability reporting and engage in sustainable practices to meet their ethical and social obligations to stakeholders while also boosting shareholder value. The ability of the company to manage its stakeholders will ensure its long-term growth and survival. A company's sustainability reporting is the only means for stakeholders to learn about its sustainability initiatives. A company's ability to create value for stakeholders is essential to its growth and survival, and this cannot be achieved if stakeholders' needs are disregarded (Clarkson, 1995; Jensen, 2002). In other words, if a firm can satisfy the expectations of its stakeholders, which can only be done through sustainability reporting, it will be able to survive.

Since they are the sources of funding, the interests of the stakeholder group must also be in line because any treatment of one would result in a reaction from those affected. Stakeholder integration is key to management effectiveness, and consideration of stakeholders' expectations throughout the entire decision-making process will impact the outcome of the organization or entity (Donaldson & Preston, 1995). How management creates value and responds is at the heart of stakeholder theory, and the relationship that exists between them is crucial to the success or failure of the organization. The study, therefore, is hinged on stakeholders' theory.

2.2.2 Signaling Theory

In 1973, Michael Spence created the intuitive signalling hypothesis, which has since spread widely. When asked if one could win the Nobel Prize in Economics for merely pointing out that certain market participants are not taking use of information that others might want to provide, Spence replied that the proper answer was probably "no." Nevertheless, he did point out that the theory takes into consideration the informational characteristics of market structures and allocates costs to information acquisition processes that remove knowledge asymmetries in a range of economic and social events. Signalling theory is fundamental because it helps explain how information is exchanged in markets and how people and corporations make decisions based on that information.

The underlying premise of this theory was that information asymmetry can be reduced when the party with more information alerts others to it, acknowledges the separation of ownership and management, and also acknowledges that managers are motivated to disclose information by market pressures because they know more about the business than other parties like owners and investors. The premise that underlies the criticism of the agency theory is that people are acting in their own best interests. This hypothesis also makes the assumption that organizations with strong performance are more likely to release their voluntary disclosures in a timely manner. According to Adekunle and Asaolu (2013) such disclosures are seen as a simple approach for businesses to set themselves apart from rivals in the marketplace. In order to eliminate information asymmetry and present themselves to their stakeholders as ethical businesses, organizations share information on their sustainability practices. This can improve their reputation and possibly increase their financial performance.

The signaling theory explains how businesses share information with their stakeholders to resolve information asymmetries. Companies are thought to show their superiority and set themselves apart from rivals by offering more information. The public may become more loyal as a result of the enhanced transparency, which may raise demand for the company's goods and services as well as its stock, leading to long-term success and sustainable growth.

2.3 Empirical Review

Okeke et al. (2022) looked at how environmental accounting charges affected the financial performance of a few Nigerian oil and gas companies that were publicly traded. Data for the study came from oil firms' annual reports, which covered the years 2000 through 2020. The study employed both descriptive and inferential statistics to analyze the panel data. The results of the study showed that environmental failure costs, both internal and external, have a favorable and considerable impact on the financial performance of Nigerian oil and gas businesses. The financial performance of Nigerian oil and gas businesses was not significantly impacted by the costs associated with environmental pollution prevention and environmental detection.

Al-Mawali (2021) looked into the connections between environmental performance, financial performance, and environmental cost accounting (ECA) in Jordan. The samples are businesses that are listed on the Amman Stock Exchange in the industrial sector. While ECA and EP are measured subjectively using questionnaires, financial success is measured objectively using data from the companies' annual reports. The study used structural equation modelling to analyze the data. The results showed that EP and FP, as well as EP, benefited from ECA. The results also confirmed EP's involvement as a mediator in the connection between ECA and FP.

Idowu and Agboola (2021) looked at how environmental expenses affected the Nigerian extractive industry's financial performance. 18 companies' annual financial reports from the Nigerian Stock Exchange were sampled for the study's secondary data. A panel regression estimation model was used to analyze the data, which covered the 11-year period from 2010 to 2020. Results indicate that expenses related to the environment, such as those for administration and environmental remediation, have a positive effect on financial performance. Business location expenses have a detrimental and very significant effect on financial

performance. Both social and R&D costs have little impact on the financial performance of a sampled extractive business in Nigeria.

Nwanwu (2022) looked into how environmental management expenses affected the financial results of listed oil and gas firms in Nigeria from 2011 to 2018. Net profit functioned as a metric for financial performance, while pollution cost served as a dimension of environmental management costs. Ten quoted oil and gas businesses that are listed on the Nigerian Exchange made up the study's population. Information was obtained from annual reports and accounts of the companies that were posted on the website of the Nigerian Exchange. Regression analysis and descriptive statistics were employed. The study's findings demonstrated that the cost of pollution has a positive and considerable impact on the financial success of Nigerian oil and gas businesses that are publicly traded. The performance of oil and company in Nigeria is found to be significantly impacted by environmental management costs.

Contrarily, a study on the environment accounting disclosure practice of Nigerian quoted firms was undertaken by Musa et al. (2015), with a focus on a few particular consumer goods companies listed on the Nigerian Stock Exchange. They included 8 out of 19 consumer products businesses in their study. The study discovered that accounting standards had no impact on environmental accounting disclosures by using one-way analysis of variance. Lack of a standard resulted in inconsistent disclosure procedures and inconsistent hypothesis testing. The authors advised businesses to share complete information about their operations while under pressure. They also advocated for the creation of a unified standard for environmental accounting disclosure by the group responsible for developing worldwide accounting standards.

In a study by Ezejiofor et al. (2017) titled "Effect of Sustainable Environmental Cost Accounting on the Financial Performance of Nigerian Corporate Organizations," the researchers examined time series data and found that environmental costs had a positive effect on the revenue generation of corporate organizations in Nigeria. In order to increase the stability of overall organizational performance, they advised both domestic and multinational enterprises to establish strict environmental accounting procedures.

Separate analyses using the Pearson product-moment coefficient of correlation and multiple linear regression analysis were carried out by Acti-Ifurueze et al. (2013), Nwaiwu and Oluka (2018), and Ezeagba (2017). Their conclusions showed that corporate environmental rules compliance and adequate disclosure of environmental expenses have a significant impact on financial performance. In order to ensure accurate environmental cost disclosure and reporting, they advised regulatory enforcement.

The authors have considered several areas as it relates to Environmental Accounting in which some of them relates to environmental accounting charges, environmental cost accounting, environmental expenses, environmental management expenses, environmental accounting disclosure and sustainable environmental cost accounting. There still exists a gap in environmental conservation cost and hence the study seeks to bridge the gap by investigating the effect of environmental conservation cost and performance of manufacturing firms in Nigeria.

III. Methodology

The *ex - post facto* research design was adopted making use of data from the Nigerian Exchange Group (NXG). The period covered 10years (2012 – 2021).

The population of the study comprised 35 consumer companies that are listed. The study adopted the purposive sampling technique making use of 10 of them. The model is as specified below:

3.1 Operationalization of Variables and Model Specification

$$Y=f(X)$$

Where Y = Dependent Variable represented by Financial Performance (FP)

y_1 = Earnings per Share (EPS)

y_2 = Net Profit Margin (NPM)

X = Independent Variable represented by Environmental Conservation Cost (ECC)

x_1 = Regulatory and Compliance Cost (RCC)

x_2 = Training and Engagement Cost (TEC)

x_3 = Restoration Cost (RC)

β_1, β_3 = Model Coefficient and parameter estimates

e_{it} = Error term

$$EPS_{it} = \beta_0 + \beta_1 RCC_{it} + \beta_2 TEC_{it} + \beta_3 RC_{it} + e_{it} \dots \dots \dots H_{01}$$

$$NPM_{it} = \beta_0 + \beta_1 RCC_{it} + \beta_2 TEC_{it} + \beta_3 RC_{it} + e_{it} \dots \dots \dots H_{02}$$

IV. Results, Analysis, and Discussion of Findings

4.1 Descriptive Statistics

Variables	Mean	Std. Deviation	Minimum	Maximum
RCC	0.420	1.55	0	4
TEC	0.002	0.022	0	5
RC	0.32	1.45	0	5

Source: Authors Computation (2024)

The table shows the summary of the statistics of all the variables from the quoted consumer goods under study.

RCC has a mean value of 0.420 and a standard deviation of 1.55 The standard deviation measures the degree of dispersion from the mean and shows the level of volatility which is 1.55. The mean of 0.420 shows the average disclosure practices as it relates to RCC. This is further seen in the difference in minimum value (0) and maximum value (4) which is 4.

TEC has a mean of 0.002 as well as a standard deviation of 0.022 showing no much dispersion in the series. This is further seen in the difference in minimum value (0) and maximum value (5) which is 5.

RC has a mean of 0.32 as well as a standard deviation of 1.45 showing no much dispersion in the series. This is further seen in the difference in minimum value (0) and maximum value (5) which is 5.

Pre-estimation Tests

In order to ascertain the appropriateness of the data used, the series was tested for multicollinearity using the Variance Inflation Factor (VIF) and correlation matrix tests. The VIF results reveal the presence or absence of multicollinearity through the mean value but do not reveal the degree of association among the variables in order to identify the variables affected. However, the correlation matrix reveals the magnitude of the associations among the variables under study.

Variance Inflation Factor (VIF) Test Result

Variables	VIF	1/VIF
RCC	1.10	0.909
TEC	1.20	0.833
RC	1.15	0.870
Mean VIF	1.15	0.871

Source: Authors Computation (2024)

The results show the mean VIF to be 1.15 which is below the threshold of 5 and signifies the absence of multicollinearity problems among the variables data series.

Pearson Correlation Matrix Test

	RCC	TEC	RC
RCC	1	0.0871	-0.1036
TEC	0.0871	1	-0.0343
RC	-0.1036	-0.0343	1

Source: Authors Computation (2024)

TEC is positively but weakly associated with RCC and RC.

Results of Regression Estimate Test for Hypothesis One

Variables	Coefficient	St. Error	T-stat	Prob
Constant	3.607	0.384	9.390	.000
RCC	.381	.087	4.370	.000
TEC	.280	.105	2.654	.009
RC	.036	.045	.783	.002
Adjusted R ²	0.766			
F stats	45.460 (0.00)			

Dependent Variable: Earnings per Share (EPS)

Source: Authors Computation (2024)

Interpretation

Regulatory and Compliance Cost emerged as a statistically significant predictor of Earnings per Share (β 0.381, $t=4.370$, $p=0.000$) in the regression analysis. These findings demonstrate that RCC has a significant impact on EPS. In addition, a unit increase in RCC would lead to increase in the eps by a factor of 0.381. Training and Engagement Cost has a significant effect on EPS ($\beta=0.280$, $t=2.654$, $p=0.009$) in the regression analysis. This implies that a unit increase in TEC would lead to an increase in EPS by 0.280. Restoration Cost also has a significant effect on EPS ($\beta=0.036$, $t=0.783$, $p=0.002$). This implies that a unit increase would lead to an increase in EPS by 0.036.

The regression model is expressed as:

$$EPS = \beta_0 + \alpha_1 RCC_{it} + \alpha_2 TEC_{it} + \alpha_3 RC_{it} + u_{it} \dots \dots \dots \text{Model 1}$$

$$EPS = 3.607 + 0.381RCC_{it} + 0.280TEC_{it} + 0.036RC \dots \dots \dots \text{Model 1}$$

The regression estimates of model 1 show that Environmental Conservation Cost measured by RCC, TEC and RChas a positive effect on Financial Performance measured by Earnings per Share (EPS). This is indicated by the signs of the coefficients.

The Adjusted R^2 of the model showed that 76.6% variations in EPS can be attributed to environmental conservation cost proxies used in this study, while the remaining 23.4% variations are caused by other factors not included in this model. This shows a moderate explanatory power of the model.

The null hypothesis is rejected, and the alternate accepted which means that Environmental Conservation Cost has a significant effect on the Earnings per Share of listed manufacturing firms in Nigeria.

Decision: At a level of significance 0.05, the F -Statistics is 45.460, while the P -value of the F -Statistics is 0.000 which is less than 0.05 adopted for the study. The study therefore rejected the null hypothesis and the alternate accepted which means that environmental conservation cost has a positive significant effect on the Earnings per Share (EPS) of listed manufacturing firms in Nigeria.

Results of Regression Estimate Test for Hypothesis Two

Variables	Coefficient	St. Error	T-stat	Prob
Constant	3.289	1.095	1.038	.301
RCC	.255	.070	3.605	.000
TEC	.119	.084	1.406	.003
RC	.072	.041	1.761	.000
Adjusted R ² overall	0.813			
F stats	82.153 (0.00)			

Dependent Variable: Net Profit Margin (NPM)

Source: Authors Computation (2024)

Interpretation

Regulatory and Compliance Cost emerged as a statistically significant predictor of Net Profit Margin ($\beta = 0.255$, $t=3.650$, $p=0.000$) in the regression analysis. These findings demonstrate that RCC has a significant impact on Net Profit Margin. In addition, a unit increase in RCC would lead to increase in the NPM by a factor of 0.255. Training and Engagement Cost has a significant effect on NPM ($\beta = 0.119$, $t=1.406$, $p=0.003$) in the regression analysis. This implies that a unit increase in TEC would lead to an increase in NPM by 0.119. Restoration Cost also has a significant effect on NPM ($\beta = 0.072$, $t=1.761$, $p=0.079$). This implies that a unit increase would lead to an increase in NPM by 0.072.

The regression model is expressed as:

$$NPM = \beta_0 + \alpha_1 RCC_{it} + \alpha_2 TEC_{it} + \alpha_3 RC_{it} + u_i \dots \dots \dots \text{Model 2}$$

$$NPM = 3.289 + 2.55RCC_{it} + 1.119TEC_{it} + 0.72RC_{it} \dots \dots \dots \text{Model 2}$$

The regression estimates of model 2 shows that environmental conservation cost measured by RCC, TEC and RC has a significant effect on Financial performance measured by Net Profit Margin. This is indicated by the signs of the coefficients.

The Adjusted R^2 of the model showed that 81.3% variations in Net Profit Margin can be attributed to environmental conservation cost proxies used in this study, while the remaining 18.7% variations are caused by other factors not included in this model. This shows a moderate explanatory power of the model. The null hypothesis is rejected, and the alternate accepted which means that environmental conservation cost has a significant effect on Net Profit Margin of listed manufacturing firms in Nigeria.

Decision: At a level of significance 0.05, the F -Statistics is 82.153, while the P -value of the F -Statistics is 0.000 which is less than 0.05 adopted for this study. The study therefore rejected the null hypothesis and the alternate accepted which means that environmental conservation cost has a positive significant effect on the Net Profit Margin of listed manufacturing firms in Nigeria.

Discussion of Findings

For hypothesis one the results were in tandem with the studies of Falope et al (2019) and Nwanwu (2022) who also agreed that Environmental Conservation Cost had a positive significant effect on Asset Growth of companies. The results however disagreed with the results of Musa et al (2015) who reported a negative result.

For hypothesis two the results were in tandem with the studies of Idowu and Agboola (2021) and Al-Mawali (2021) who also agreed that Environmental Conservation Cost had a positive significant effect on Turnover Growth of companies. The results however disagreed with the results of Ezeagba (2017) who reported a negative result.

V. Conclusion

Hypothesis one investigated the effect between Environmental Conservation Cost and Earnings per Share (EPS) and as a result objective one concluded that Environmental Conservation Cost had a significant effect on Earnings per Share of listed manufacturing companies in Nigeria and Hypothesis two investigated the effect between Environmental Conservation Cost and Net Profit Margin and as a result objective two concluded that Environmental Conservation cost had a significant effect on Net Profit Margin of listed manufacturing firms in Nigeria. It was therefore concluded from the study's findings that Environmental conservation cost has a significant effect on financial performance of listed manufacturing companies in Nigeria.

VI. Recommendations

The following recommendations are made in line with the findings of this study:

1. Management should allocate more resources to training and engagement cost to foster innovation, improve operational efficiency, and stay competitive in the market. By so doing firms will experience increased financial performance.
2. Regulatory agencies like the Environmental Protection Agency should emphasize environmental practices and restoration efforts to mitigate the impact of environmental activities on the surrounding ecosystems, which can positively influence the company's reputation and social acceptance, and Implement robust regulatory and compliance mechanisms to assess the company's performance regularly.

VI. Contribution to Knowledge

This study has contributed in the following ways:

Conceptually, this study has added to the body of knowledge that already exists by utilizing the various measures of Environmental Conservation Cost that have been adopted.

Theoretically, creditors are stakeholders in organizations and expect to earn a maximum return on their investments, which is dependent on inferences drawn from the financial statements that produce economic reality and the greater expectations of the investors being met by the real and actual reality. This has given the signaling theory and stakeholders theory more credence.

And lastly, to the accounting profession and the public who will be able to understand the significance of Environmental Conservation Cost and Financial Performance that will support and safeguard their decision-making as professionals.

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