Sapientia Foundation Journal of Education, Sciences and Gender Studies (SFJESGS), Vol.4 No2 June, 2022; pg. 181 – 193
ISSN: 2734-2522 (Print); ISSN: 2734-2514 (Online)

ENVIRONMENTAL MANAGEMENT DISCLOSURE ON ECONOMIC SUSTAINABLE DEVELOPMENT: EMPHASIS FROM LISTED CONSUMER GOODS FIRMS IN NIGERIA

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Abstract

This study investigated the effect of environmental management on economic sustainable development with emphasis on listed consumer goods firms in Nigeria. In order to emphatically achieve result, three hypotheses were formulated. Ex-post factor research design was employed. The population of the study comprised all the firms listed under consumer goods sector within the period of study (2015 to 2020) which is 26 and 10 of them were adopted as sample for the study. Secondary data were utilized in the analysis. The result revealed that technologies and strong environmental policies have statistically significant effect on sustainable economic development. Environmental performance award and environmental crisis were statistically insignificant. The study recommends that regulators should examine firms' annual reports with much emphasis on the amounts spent on processes of environmental management in order to encourage more disclosures as this contributes to the economic sustainability.

Keywords: Environmental Performance Award, Technologies, Environmental Crisis, Environmental Policies, Economic Sustainable Development.

Introduction

The negative impact of industrial activities was since 20 years observed globally on environment. This negative impact on environment aroused the public disclosures of firms' commitment to remedy the deteriorated environment for sustainability. Conspicuously, business is organized for profit maximization which however, transcends into economic sustainability. This has been the primary aim of any investor. Recently, this major aim has

been impaired as the economic sustainable development is being hampered due to poor environmental management disclosure (Egolum, Amahalu, & Obi, 2019). The global financial crisis, followed by industrial air pollution, carbonated operations process, and the spike in environmental degradation have accelerated the need for the yearnings of the stakeholders on the effective and due compliance of environmental management disclosure for an enhanced economic sustainable environment.

According to Egolum and Ezeh (2021), in order for the financial statement to be trustworthy and reliable, the auditor (especially the external auditor) is required to make a statement on it. In performing its duties, the auditor expresses an opinion on the fairness, in all material respects. Glaringly, environmental management is not only complying with the regulations, but the ability to manage the expenses associated with the costs of polluted air, generated wastes which are ploughed back into the firm total operational expenses for the achievement of environmental improvement. These costs tend to rise operating costs and as a result clamp down the expected economic sustainable development (Onyali, Okafor, & Egolum, 2014). The components of the costs range from payments made on penalties, fines, loss of potential customers due to failure in environmental orientation, and the existence of unfriendly relationship with the host communities which may lead to litigation. A strong management of environmental cost may lower the above costs incurred by the firm as well as appreciating the level of economic sustainable development in the country. Firms involvement in the pressing needs facing the society most especially environmental issues is very paramount and recommendable even though, its initial or temporary cost incentive may be high but may provide future sustainable benefits on the firm, such as good reputation, trust, customer loyalty, access to capital, human resource management, innovative capacity, and risk management (Aggarwal, 2013).

The rates of operational and carbonated wastes have increased and will continue to increase as the business community expansion continues to grow at a higher pace. Though not much have been researched on environmental management and its link with the economic sustainable development, this study addresses the problem by linking the environmental management with some pathways otherwise referred to as operational variables like environmental performance awards, technologies designed to manage the firm wastes, environmental crises, and strong environmental policies/governance.

Nevertheless, there are cup full of prior researches carried out abroad on this topic, but their findings cannot be fitted into Nigerian environment while others have been exerting conflicting findings. More so, most of the researches conducted on the above study based on Nigerian environment used exploratory and theoretical approach research designs. Few of the researches used quantitative data and this poses a challenge as empirical framework is very minimal. Ndubuisi-Okolo, Anekwe, and Ekwochi (2020) made use of exploratory research, Ogboru and Anga (2015) employed theoretical approach, while Goosen (2012) used coordinated approach.

The need for further research on the environmental management is highly essential as it propels effective management of operational wastes for economic sustainable development; hence this study.

However, this study is dwelling on a dimension of Corporate Social Responsibility (CSR) which is Corporate Environmental Responsibility Management (CERM), focusing on the effect of Environmental Management of Listed Consumer Goods Firms on the economic sustainable development. Looking at the operational strategies and policies present for the effective management of costs and labor associated to these spills/wastes for profit maximization which however transcends into economic sustainable development. The study proxy environmental management with environmental performance awards, technologies designed to manage operating process and post product wastes, environmental crises, and strong environmental management policies/governance, while economic sustainable development is proxy with Nigeria Gross Domestic Product (GDP). Arising from above, the objective of the study is to empirically investigate the link between environmental management and economic sustainable development within the purview of listed consumer goods firms in Nigeria Exchange Group Plc ranging from 2015 through 2020.

2.0 **Review of Related Literature**

2.1 **Conceptual Framework**

Environmental management encompasses all efforts geared towards the minimization of the negative environmental impact of a firm's operating processes of a product life cycle (Klassen & Mclaughlin, 1996).

Global Reporting Initiative (GRI) (2011), in its explanation opines "environmental dimension of sustainability concerns an organization's impacts on living and non-living natural systems, including ecosystems, land, air, and water". GRI environmental management and performance indicators encompass the link between the firm product input such as material, energy, water, and the related process outputs e.g, emissions, effluents, waste, and environmental certifications and expenditure.

Olusegun (2012), sees CER as the obligation of firm to manage its business process in such a way that minimizes negative impacts on human and biodiversity while profitability is enhanced.

Aggarwal (2013), refers environmental responsibility as a process by which firms are made to be accountable, by managing its product processes for a sustainable environment.

Hunt and Auster (1990), assert that a long-term goal of environmental responsibility management is to achieve environment that will be neutral to both human and biodiversity, by considering the type of product design, the entire manufacturing process, marketing, product delivery and use, consumer service, and post-consumer product disposition.

Environmental management is viewed to be beyond mere compliance with the environmental laws and regulations by the firms' management. It encompasses the firms' ability to use strong corporate governance/policies to control amounts that are spent on polluted air, solid wastes, forestry degradation, and ecosystem impairment through fines and penalties. The costs savings impact positively on the economic sustainable development as the outflow of cash is reverted back into the working capital of the firm.

Conversely, it may be argued that the costs of controlling the firm product processes may increase the operating cost and as well hurt the profit. This may be possible in the short-run, as the firm would reap the cost savings in the long-run. When a strong environmental management policies are in use, cost of product processes is at the lower end, as waste production is often eliminated or reduced to its barest minimum (Allen, 1992). Investing more on environmental responsibility management may control material waste which may come by the means of environmental spills, energy consumption, and other environmental crises which may arise as a result of poor management. The increased costs which could have been resulted from the above crises may be mitigated, saved and ploughed back into the business for increased production and profit boost.

Environmental management disclosure encompasses the disclosure of all efforts geared towards the minimization of the negative environmental impact of the firm operating processes of a product life cycle (Klassen & Mclaughlin, 1996). Disclosure is the release of information. Investor Responsibility Research Centre (1992), sees environmental management as the parameter that measures how successful a firm is in reducing and minimizing its effect on the host community environment; this is often relative to the industry average or firms in the same production process.

- Development is the key word that shifts the inefficient and insufficient economic activities to the stage of high maturity and consumption driven by sophisticated economic and political systems of the country, striving towards eradicating poor allocation of resources for increased production, poverty, illiteracy, ill-health, and so many other vices that can tag a country underdeveloped. According to Remeny (2004), development is a process that invents quality of life and increase the self-sufficient capacity of economies that are technically complex and anchors more on global relationship with the aim of creating enabling environment in which people would enjoy, and have long, healthy, and creative life. Development is factored on:

> structural transformation (i.e. governmental and non-governmental institutions, programs and policies);
> human development (i.e. human capital) comprising education, learning, training for enhanced skill;
> development of democracy and governance (i.e. people's participation, resolution of conflict, and equality and justice);
> environmental sustainability (i.e. environmental policy, environmental requirements, environmental responsibility, operational control, corrective and prevention actions, training, awareness and competence).

The achievement of development targets beckons for its twin sister sustainability. The ability to uphold an existing activities and resources for a long period of time without being exhaustive or fades away describes the word sustainability. Jenkins (2009), however, explains sustainability as the capacity to maintain entity, outcome, or process over time, while carrying out activities that do not exhaust the resources upon which the capacity depends. In the words of Duran, Gogan, and Duran (2015), Sustainable development is a development that protects the environment, because a sustainable environment enables sustainable development. Sterling, (2010) depicts sustainable development as a reconciliation of the economy and the

environment on a new path of development that will enable the long-term sustainable development of humankind. Environment is seen as one of the pillars of sustainability. A friendly environment allows the germination and deep rooted and lasting structural development (economy), human development (society), ecological development (natural resources and ecosystem) through strong democracy and governance in the country.

Apparently, sustainable economic development may be achieved through the maintenance of environment that will be neutral to both human and biodiversity, by considering the type of product design, the entire manufacturing process, marketing, product delivery and use, consumer service, and post-consumer product disposition, as well as intelligent resource allocation for economic growth. Environmental management and economic sustainable development are anchored on human activity. Economic sustainability is achieved only when the environment is properly handled in man's endeavor to attain his needs, while the ecosystem is maintained. Therefore, it implies that good environmental management sustains the economy, society and ecology at large.

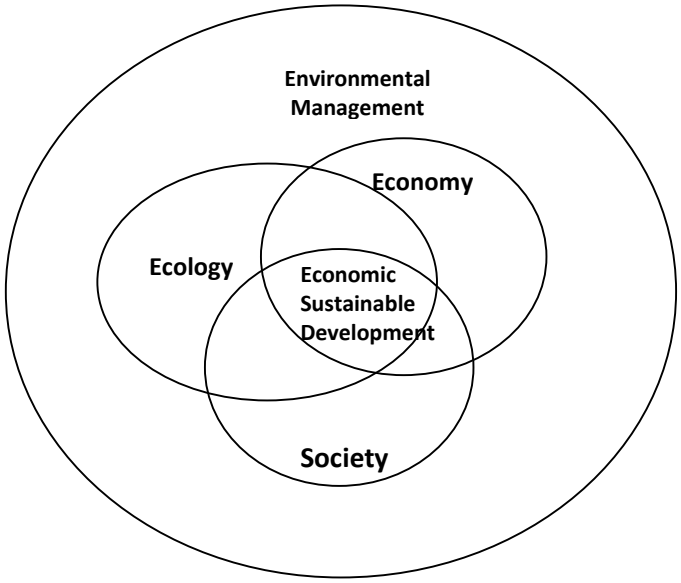

Fig 1: Interaction of Environmental Management and Sustainability Factors For Development
Source: ***The researcher***

Theoretical Framework

Legitimacy Theory

This study is anchored on legitimacy theory. The basic premise of the theory of legitimacy is the belief that a company influences the society in which it operates. At the same time, the company is also socially influenced, that is why its functioning is similar to a kind of social contract aimed at obtaining and maintaining social acceptance (Ada and Kozarkiewicz, 2014). The theory refers to the abstract contract existing between the society and company. Society is the individuals that make up the local community and as well provides the company with natural and human resources. The company produce goods and services for the society but generate waste which hampers the health of the society. The society therefore expects social needs from the company such as community welfare etc for allowing the company to exist, and as well accommodating the environmental pollution and degradation which their production causes on the environment.

Legitimacy theory supports the compliance and disclosure of corporate social responsibility. It proposes that management should respond to the community needs otherwise the society for allowing them to exist through their patronage, as well as air and water emission, degradation, and deforestation of environment which the community suffers as a result of the company's business processes. The theory is supportive to the study as the firm environmental responsibility management responds positively to the sustainable development. This theory is widely used within the context of sustainability reporting.

2.2 **Empirical Review**

Though not much have been researched on environmental responsibility management and its effect on economic sustainable development, Klassen and Mclaughlin (1996), investigates the impact of environmental responsibility management on firm performance. It uses environmental performance awards, environmental crises to measure environmental responsibility management, while stock market performance is proxy for financial performance. Significant positive returns were recorded for environmental performance awards, whereas, significant negative returns were observed for firm with environmental crises.

However, the paucity of empirical evidence on the impact of environmental responsibility management on listed manufacturing firms under consumer goods sector in Nigeria have affected the size of empirical review in the study. Meanwhile, several studies have dwelled on environmental responsibility and firm financial performance over many years with conflicting results. Ikponmwosa and Ogbeide (2021), recorded positive relationship in Nigeria; Aggarwal (2013), recorded Positive relationship in India.

- Environmental performance award is made possible through a consistent development, training and re-retaining of employees on operating process of firm. Firms may improve economic sustainable development through participative programs with customers and government agencies. Though self-reported information in firm annual reports could be subjective and may not be very appropriate in rating firm environmental performance. However, to avoid weakness, the most appropriate means is to specifically adopt the information announced by an independent third party of winning an environmental award. An environmental award is generally given after an extensive examination of product design, process operation and management systems. The award which is based on the assessments by the industrial and local experts is a signal proving the environmentally sensitivity of the firm, which may lead to increased revenue (more sales), costs savings, and profit oriented. The perceived effect is estimated from increase in firm profit which spills into economic sustainable development. This however answers the research question thus: Do environmental performance awards impose any effect on economic sustainable development?

- The control may be achieved by the use of modern technologies designed to re-process operating waste, and post product wastes. Re-cycling the product process and post product wastes will always give birth to new innovation, market share expansion, possible displacement of indolent competitors while enhanced profit is achieved. Firm can monopolize a certain market by establishing a technological process that re-

cycles their branded post-consumer waste which helps to reduce the environmental toxics, dirt like cans, nylons, bottles, that litter the environment while firms that cannot follow up with the trend may ouster from the business. It signals a green flag to such firms and may avail them increased revenue and higher profit at the end. Environmental responsibility management may preserve some markets in the longer term to firms that are oriented. For example, a branded drinking cans firm may be threatened or restricted for further use if an acceptable post consumer recycle system is not introduced. This gave rise to the research question: Do technologies designed by firms to manage wastes impose any effect on economic sustainable development?

- According to Hunt and Auster (1990), a long term goal of environmental management is to gradually and proactively direct the product processes of the firm with a vision to consider environmental aspects in an integrated fashion in product design, the entire production cycle, marketing, produce delivery and use, consumer service, and post consumer product disposition. Environmental crises may arise if the above processes are not carefully managed. When this is allowed to happen, the firm may spend more on penalties, litigations, and even on advertisement in order to re-introduce their re-branded product as the large part of their market share must have been lost to their rivals as a result of poor environmental responsibility management. This may reduce the firm profit as more cash outflow may be expended for remedial actions rather than used to beef up the working capital for inflow of revenue for an enhanced economic sustainable development. The above gave rise to the research question: Do environmental crises impose any effect on economic sustainable development?

- Corporate policy provides environmental orientation of firm to employees and customers for due compliance and future benefits. Firms profit may be affected by environmental responsibility management. Sustainability is possible through the increasing size of market share which determines the level of sales that impact greatly on the profit and maintenance of sustainable development. Customers are said to be more preferential to environmentally oriented firms (Rosewicz, 1990). Recycling of post consumer waste is an indication of firm that show-cases an effort to minimize the negative impact of their product processes on the environment, hence the research question: Do strong environmental policies/governance impose any effect on economic sustainable development?

3.1 Methodology

The study employs ex-post facto research design of firm level of environmental responsibility management. The data were retrieved from the information disclosure of the affected firms through annual reports. This information consists both qualitative and quantitative in nature. Panel data is employed using multiple regression statistics to analyze the data. The population of the study is26 firms in consumer goods. A sample size of 10 is purposefully chosen for study. The period of study is 2015 to 2020.

Model Specification

Operational of the study's variables are:

Environmental management disclosure is proxy by, environmental performance awards, technologies designed to manage operating processes and post product waste, environmental crises, and strong environmental management policies/governance. These are measure with dummy variable, whereas 1 is allocated if the disclosure is met, and 0 if it is not disclosed. Also, economic sustainable development is proxy by Gross Domestic Product (GDP), ranging from 2015 through 2020.

The functional model specification is as follows:

GDP = F(EPA+TECH+EC+SEP)

And the econometric specification is:

$GDP=B_0+B_1EPA_{it}+ B_2TECH_{it} + B_3EC_{it} + B_4SEP_{it} +e_{it}$ …….(1)

Where:

GDP is gross domestic product

EPA is environmental performance award

TECH is technologies designed to manage operating process and post product waste

EC is environmental crises

SEP is strong environmental policies.

B_0 is coefficient of the parameter estimate

e_{it} is error term of company i in time t.

4.1 **Results/Findings**

Table 1

DESCRIPTIVE RESULT OF THE SAMPLED FIRMS

	GDP	EPA	TECH	EC	SEP
Mean	0.006967	0.200000	0.800000	0.166667	0.833333
Median	0.013650	0.000000	1.000000	0.000000	1.000000
Maximum	0.026500	1.000000	1.000000	1.000000	1.000000
Minimum	-0.017900	0.000000	0.000000	0.000000	0.000000
Std. Dev.	0.018023	0.403376	0.403376	0.375823	0.375823
Skewness	-0.439626	1.500000	-1.500000	1.788854	-1.788854
Kurtosis	1.455134	3.250000	3.250000	4.200000	4.200000
Jarque-Bera	7.899236	22.65625	22.65625	35.60000	35.60000
Probability	0.019262	0.000012	0.000012	0.000000	0.000000
Sum	0.418000	12.00000	48.00000	10.00000	50.00000
Sum Sq. Dev.	0.019166	9.600000	9.600000	8.333333	8.333333
Observations	60	60	60	60	60

Source: Eview

The mean, median, maximum and minimum under GDP show 0.006967, 0.13650, 0.026500 and -0.017900. This proves the degree of effect environmental management disclosure is having on economic sustainable development hence the minimum is -0.017900.

The mean under environmental performance award (EPA), technologies (TECH), environmental crisis (EC), and strong environmental policies (SEP) show 0.200000, 0.800000, 0.166667, and 0.833333 respectively. This explains the level of disclosure of environmental management by the concerned firms in consumer goods sector.

Table 2:
CORRELATION RESULT OF SAMPLED FIRMS

	GDP	EPA	TECH	EC	SEP
GDP	1				
EPA	0.048025417	1			
TECH	0.017718115	0.145833333	1		
EC	0.164063991	2.482534153	0.111803398	1	
SEP	0.230039902	0.111803398	0.335410196	0.200000000	1

Source: Eview

Correlation analysis interprets how the variables relate to each other. In checking for multi-colinearity the study noticed that no two explanatory variables are perfectly correlated. This indicates the absence of multi-colinearity problem in the model used for the analysis. In table 2, EPA,TECH, EC and SEP are positively related to GDP . This means that environmental responsibility management disclosure impacts greatly on the economic sustainable development of the country. This is statistically proved with the following data in table 2, 0.0480254170, 0.017718115, 0.164063991 and 0.230039902 respectively. The correlation analysis result shows that EPA,TECH, EC, and SEP are positively related and guarantee higher economic sustainable development.

FIXED EFFECT

Dependent Variable: GDP
Method: Panel Least Squares
Date: 02/28/22 Time: 11:08
Sample: 2015 2020
Periods included: 6
Cross-sections included: 10
Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.015085	0.007126	2.117024	0.0397
EPA	0.003097	0.006546	0.473023	0.6384
TECH	0.001530	0.007053	2.216926	0.0032
EC	-0.005514	0.007085	-0.778308	0.4404
SEP	-0.010852	0.007496	-5.447654	0.0045

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.673639	Mean dependent var	0.006967
Adjusted R-squared	0.338159	S.D. dependent var	0.018023
S.E. of regression	0.019646	Akaike info criterion	-4.820933
Sum squared resid	0.017754	Schwarz criterion	-4.332253
Log likelihood	158.6280	Hannan-Quinn criter.	-4.629784
F-statistic	4.281280	Durbin-Watson stat	2.001122
Prob(F-statistic)	0.001450		

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	15.005894	3	0.0018

The Hausman test result shows a chi-square value of 15.005894 and probability value of 0.0018, the chi-square probability value is less than 10%. Based on the result, the study accepts the fixed effect and rejects the random effect, hence we used the fixed effect to correct the problem of homogeneity in the panel data used for the study. The study observes that $R^2$is 0.673639. This indicates that explanatory variables used in this study have 67% influence on the dependent variable of the sampled firms. F – Statistics value and its probability are 4.281280 and 0.001450 respectively, meaning that model used is statistically fit at 1% level of significance. Durbin Watson statistics result is 2.001122. It indicates the absence of autocorrelation in our model hence the model used is appropriate for the study.

5 Discussion

The study evaluates the effect of environmental responsibility management disclosure on economic sustainable development in listed firms of consumer goods sector in Nigerian Exchange Group Plc. The study uses environmental management disclosure to be the independent variables and as well proxy it with Environmental performance awards (EPA), technologies (TECH), environmental crisis (EC), and strong environmental policies while economic sustainable development stands to be the dependent variable and is measured with gross domestic product (GDP).

The regression analysis reveals that environmental performance awards disclosure has statistical insignificant effect on economic sustainable development. This contradicts the findings of Klassen and Mclaughlin (1996). The implication is that environmental performance award is subjective and may be manipulated by the officers involved, and as a result would not give the true environmental management in the real practical aspects of it. It does not actually drive the economic sustainable development in the sampled firms of consumer goods sector in Nigeria.

Technologies disclosures prove to be statistically significant on the economic sustainable development. This is in tandem with the findings of Klassen and Mclaughlin (1996). The above indicates that the disclosure of technologies propel high economic sustainable development in the country as it inspires competitive operation with firms in the same sector. This is so as the sophisticated equipments assist the firm management to convert different wastes into another set of products. It encourages innovation and expansion which give credence to economic development and its sustainability; maximization of profit, hence people's lives are standardized.

Environmental crisis disclosure is statistically insignificant. This portrays that firms with low or nil environmental oriented system do not support the economic sustainable development. The scenario indicates that such firms pay penalties, levies, as well as litigation. The expenses which could have been avoided but do not due to the indifference nature of the management tend to increase the operating costs. This however, reduces the volume of revenue which impact negatively on the economic sustainable development hence the environment is impaired, innovation halted, employment eroded, while the poverty rate continues to mount up.

Environmental policies disclosures prove to be significant. This signals that good environmental policies and governance propel the environmental management which has a multiplier effect on the economic sustainable development. This is made possible through system orientation, choice of production process, employee and customers' training on how best to maintain a clean and comfortable environment; an environment that would be emission, deforestation, and air pollution free.

6 Conclusion

Going by the above, it has been observed and concluded that efficacious management of environment by firms have much positive roles to play in the race of sustainable development. This is evident from the roles and benefits attributable by firms' efforts in improving on their

certification process while environmental sanity and standard are achieved for sustainable development.

7 Recommendations

The paper therefore, recommends that regulators of environmental activities in the country should:

- Examine firms annual reports laying much emphasis on the cost spent on operational waste process. This would give them the insight to fish out those firms that cut corners and therefore spend more on penalties and levies, as this would have been added up to their working capital for increased production which would have less or no incremental cost. The arrangement reduces the cost of product and avails the consumers a better purchasing power. The idea assures food to every average citizen as poverty is reduced tremendously.
- Again, recycling of post product waste by firms should be enshrined into environmental laws and serve as a prerequisite before the issuance of certificate of incorporation. This would go a long way in reducing wastes and dirt like cans, nylons, robber bottles that litter the environment. Therefore, firms should be compelled to train their consumers on the post handling of the waste after use to enable the possibility of recycling while environmental sanity is achieved.

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