

# Environmental Accounting Perception: Evidence from Nigerian Pharmaceutical Firms

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Article History: Submitted: 15.10.2019

Revised: 20.12.2019

Accepted: 07.01.2020

## ABSTRACT

This study aims to identify the level of awareness in the Nigerian pharmaceutical industry in terms of environmental accounting. We discuss the laws and regulation related to environmental accounting with respect to the Nigerian pharmaceutical industry. We use two different methods of investigation namely questioner and content analysis in order to maximize the reliability of research. We receive 40 valid questionnaires out of 50, then investigate the requirement of environmental accounting in different aspect such as availability of accounting information system, availability of environmental information system, awareness of environmental damage among the employees, awareness of environmental accounting standard, and

commitment with environmental standards. The investigated results indicate that the pharmaceutical industry of Nigeria is well aware of environmental responsibility and struggling to implement and practice environmental accounting standard.

**Keywords:** Environmental Accounting, Questionnaires, Awareness of environmental damage

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DOI: [10.5530/srp.2020.1.39](https://doi.org/10.5530/srp.2020.1.39)

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## INTRODUCTION

These days environmental problems become the global debate as it has the consequences about which public are unaware, such as global warming, water pollution, air pollution, marine pollution, and noise pollution. These environmental problems are generally originated from the emerging economies as a result of development. These issues are vital to be resolved because they are creating difficulties in the survival of living creature on earth most importantly for human beings. Therefore, studies related to environmental accounting are evolving around the world, whereby, researchers assess the environmental risk and suggest the accounting disclosure accordingly. The purpose of this global debate is to save the world from environmental pollution generated from the industries and particularly make them responsible for their mess. Environmental accounting disclosure would be the source that indicate the firm's progression towards the environmental and social initiatives (Mazahrih, 2019).

Natural environment plays an important role for the development of economy whereas environmental accounting is an essential tool to understand the hazard generated by the industries and the significant action to be taken in order to neutralize their effects. It also provides the contribution of natural resources for the wellbeing of economy and the associated cost to restore those resources in order to reutilize in future. Environment includes everything that is naturally available in our surrounding which is an essential requirement for the survival and the wellbeing of mankind (Minimol & Makesh, 2014).

Environmental accounting is all about the sustainable development across the world. It has different variety of meanings, in some context it is also called green accounting (Virag et al., 2014). Environmental accounting is the measure of the performance of an organization with respect to the environmental effect caused by the production and the necessary action to be taken in order to maintain the greenhouse safety. Some researchers

(Ezeagba et al., 2017) explain that it is more than the accounting in which environmental benefits taken by the organization are compared with the environmental cost it caused to the organization.

Environmental accounting is the subpart of financial accounting and the purpose of financial accounting is to provide the financial information to the stakeholders and satisfy their transactional requirement. It is almost the requirement of every size of organization with the aim of maximizing profits, improve liquidity and solvency ratio (Kusuma 2017). However, all the financial goals of the firm are subject to approval by financial accounting. Therefore, all the activities derived from environmental accounting are also subject to approval by financial accounting. The environmental data collected for the analysis purpose are connected with the comprehensive objective of management in order to practice the environmental accounting. There are two main objective of environmental accounting that are often proposed by the management in order to achieve the operational goals namely sustainable development and eco-efficiency. Sustainable development is considered as the necessary requirement for the survival of natural resource and as well as the economy in long run. Nowadays, it is desired by the world's economy to develop the sustainable environment for the wellbeing of nations and their businesses. Moreover, sustainability has been accepted internationally as a principle and the clusters continuously growing internationally in the form of social and environmental compliance, especially in developed countries. Whereas eco-efficiency is concerned with the efficient use of environmental resources with the aim of producing more with less use of natural resources. It is the fundamental approach that leads the development of strong sustainable environment (see e.g. Roche 1995). It is likely being adopted by the firm as the top goal of senior management (Bennett & James 2017). The adoption of eco-efficiency is promoted more by the firms internally in contrast with sustainability, instead sustainability

development is more influenced by the government or the industry groups.

Subsequently, environmental accounting has become the most concerning issue across the world as it required the firm to incorporate all the social and environmental issues in their reports and opt the decision which is in the favor of wellbeing of living world. Therefore, Nigeria is an underdeveloped country and the environmental issues of Nigeria include global warming, deforestation and associated soil erosion, ozone layer depletion, desertification, oil pollution and oil spillage. There are some other factors too that cause the environmental damages but these are happened due to the ineffective enforcement of environmental laws (AA, 2016). Unfortunately the government would be responsible of all inefficiencies including corruption, poor infrastructure, conflict of role in management and inadequate enforcement facilities.

Therefore, this study concerns with the degree of awareness in the Nigerian pharmaceutical sector with respect to the environmental issues and the positive step taken by the industry in order to implement the environmental law. Moreover, this study also incorporate the disclosure of environmental issues and the steps should be taken by the Nigerian pharmaceutical sector in terms of environmental accounting.

### Study Objective

The main objective of this study is to identify the degree of awareness in the related department of Nigerian pharmaceutical industry in terms of environmental accounting with the aim of focusing on the following objectives:

- Evaluate the degree of awareness the Nigerian pharmaceutical industry possess in relation with environmental responsibility.
- Evaluate the process of implementing environmental accounting laws by the Nigerian pharmaceutical industry.
- Evaluate the degree of commitment with the implementation of (NESREA) Act 2007 by the Nigerian pharmaceutical industries.
- Evaluate the degree of practicing the environmental accounting and disclosure by the Nigerian pharmaceutical industry.

### Research Problem

The main problem with this study is to identify the level of commitment undertaken by the administrative force of Nigerian pharmaceutical companies and compare it with the environmental responsibilities imposed by the environmental law. We formulated this problem in the following questions:

- Does the environmental law and regulation imposed by the government become the part of finance department of the industry?
- Do the environmental responsibilities and the associated cost become the part of financial strategy?
- Do the environmental policies become the part of Nigerian pharmaceutical industries' reporting accounts?

## LITERATURE REVIEW

The analysis of environmental disclosure was conducted by (Michelon et al., 2016), in which they found that those firms which have poor performance in environmental management have the extensive disclosure on their website in term of greenhouse safety. However, the disclosures on website does not highlight the actual environmental performance of the firms as the actual performance would remain at back stage reality and the website disclosure would be the front stage betrayal.

It has been realized that accounting ideology become the most concerning topic in terms of environmental responsibility (Aladwan, M. (2018). Regulatory bodies around the world emphasizes on the principle of environmental accounting and recommend the requirements of environmental commitment related to any specific project in order comply with environmental responsibilities. This study specifically target the contribution of Nigerian pharmaceutical industry in the field of environmental accounting with the aim of complying with the current environmental responsibilities and keep in pace to comply with future requirements.

Previously a researchers analyses the relationship of environmental performance and environmental disclosures using the sample data of US firms from the annual report of 1990. The results indicate that, with respect to the firm size and industry classification, the relationship of performance and disclosure of environment was found significantly negative for that period. In addition, they realized that those firms which were environmentally non-sensitive in terms of disclosure were more affected by the toxic release level as compared to those firms which were environmentally sensitive in their disclosure.

Another study highlighted the importance of social and environmental accounting and their reporting with the support of management accounting by focusing on the interrelationship of organizational changes and the social and environmental accounting practices (Russell et al., 2017). Consequently the study increases its pool of social and environmental practices by accumulating the factors of changes happening over time and the restriction developed by the system for the profit seeking organization. Moreover, the insecurity arises by involving management accounting also pay attention as it was a conventional accounting tool.

Previously EL-Shishini & Upadhyaya (2018), conducted a study on environmental management accounting in which he examine the support of environmental cost accounting for the augmentation of non-profit or non-governmental organization. He also examine the impact of making policies for the decision making under the shelter of environmental accounting. However, the results indicate that the environmental management accounting tool does not address all the dimensions of accounting operation as several accounting element left unaccounted. This study also suggest that these tools can be useful for initiating the environmental and social accounting

practices but required to enhance in order to satisfy complete accounting regime.

The awareness of social and environmental reporting growing around the world rapidly with the aim of investigating the contribution of firms by using the tool of environmental accounting. Previously (Solovida & Latan 2017), introduce the concept of graphical abstract for environmental disclosure. This concept brought the idealistic approach of analyzing the environmental management as the key preference include the air pollution, leftover waste, energy consumption and workforce requirement. It is observed that the profile industries or business sectors are involve more in using graphical abstract in order to analyze the social and environmental issues.

Nigeria is a developing country and has different laws and regulations related to social and environmental safety. One of the law known as (NESREA) Act 2007, which is described as the National Environmental Standard and Regulations Enforcement Agency. This act initially replace the federal environmental protection agency act (FEPA), 1988. (NESREA) Act 2007 is governed by the federal ministry of Nigeria under the section of environmental protection. This act promote the sustainable development of environment and the efficient use of natural resources. This act is all about protection and development of environmental resources through the embodiment of environmental technology and sustainable development for the Nigerian natural resources. It provide the authority to the regulatory bodies to ensure the compliance on both, domestic and international level with respect to the prevention and control of pollution and environmental sanitation in accordance with the environmental law. This act also covers the regulation of quality related issues of air and water, limitation of effluent and discharge of hazardous substance in the environment.

There are several other laws and regulation in Nigeria related to environmental protection which are given below:

- 1) Environmental Impact Assessment Act 1992
- 2) Harmful Waste Act 1988
- 3) Oil Pipeline Act 1956
- 4) Petroleum Act 1969
- 5) Niger-Delta Development commission (NDDC) Act

- **Environmental Impact Assessment Act 1992**

The purpose of this act is to identify the potential negative impact likely to have on environment from any type of project either public or private. It require the written application from the project to submit to the agency before embarking a project in order to take the prior approval. Agency will pre assess expected damages a project can give to the environmental and the approval will be subject to the legal liability in case of any contravention of provision.

- **Harmful Waste Act 1988**

This act was developed after the koko incident happened in Nigeria that the dumping of harmful

waste is prohibited. This act restrict the dumping of harmful waste in the air, land and water without the permission of lawful authorities of Nigeria. This act also have the provision of punishment for the offender as imprisonment to death as well as the forfeiture of land on anything used by the offender to commit misconduct. The offender also liable to pay to the family or person who got any injury due to the misconduct.

- **Oil Pipeline Act 1956**

This act concern with the social responsibility of the society as it oblige the owner of the pipeline to pay for any kind of damage happened due to the break or leakage of pipeline. He would be liable to pay for all kind of injuries either physical or economical along with the compensation for the person or society.

- **Petroleum Act 1969**

This act deals with the oil and gas development corporations in Nigeria. This act restrict the corporations to ensure the public safety and environmental protection in the surroundings of drilling and production field. They have three underline regulation to comply with. First is that the drilling and production site would be at least 50 yard away from the civilian's society, cut down of trees in the reserved forest would not be allowed and the firm would be responsible for every type of water pollution generated by the field? Second is that the manager of the production field would be responsible to establish the measure in order to prevent and control environmental pollution. Third one is related to the transportation which implies that the firm would be responsible for production, loading, transfer and storage of petroleum products without damaging the environment.

- **Niger-Delta Development Commission (NDDC) Act**

This act deals with the ecological issues generating in the Niger-Delta due to the exploration of oil minerals. This define the usage of allocated funds in order to handle these issues by empowering the commission to develop and implement the program that maintain sustainability in Niger-Delta. Moreover, it is the responsibility of a commission to coordinate with the companies and their stakeholders and advise them to take the necessary action in order to keep the environment safe from pollution.

The social and environmental laws in Nigeria require impressive mechanism and funds to implement and enforce the regulation fairly and effectively. As Nigeria is a developing country, it might be short of fund for social and environmental development. So, that fund can be financed by its major industrial sectors like, agriculture, healthcare, oil and gas, energy and power generation, etc. Sometimes, these kinds of funds require by the Law but in some cases firms step ahead and spend its own money for social and environmental development. In the field of accounts and finance, all these cases are measure in the head of environmental accounting.

## Research Methodology

There are more than hundred licensed pharmaceutical companies in Nigeria according to the record of security exchange commission. However, we include 40 companies out of total number in our study to find the perception and practices of environmental accounting in Nigerian pharmaceutical companies.

Hence, we applied the multi-method approach of research in which both the approaches quantitative and qualitative is used in a same time in order to examine the objective of research (Saunders, 2007). As the qualitative approach require a questionnaire and the content analysis is the activity that convert qualitative data in to quantitative form.

It would be a challenge to explore the level of awareness, the management of Nigerian pharma industry have with respect to the environmental responsibility. Moreover, it would be more difficult to analyze the likelihood of applying environmental accounting in the Nigerian pharmaceutical industry. In order to identify how much they are interested in applying environmental accounting we will use (Aladwan, M. (2018), questionnaire to obtain the required objectives.

In addition, the last objective of the study is related to the level of disclosure by the Nigerian pharmaceutical industry using environmental accounting and it would be achieve by content analysis. However, this study base on two primary methods of data collection, first one is

questionnaire and the second one is content analysis. Therefore both of the methods applied to achieve the results, as 44 of the questionnaire were return out of 50 distributed, whereby 40 were correctly analyzed.

## Findings

Below findings are the descriptive in nature and attempt to achieve required study objective. Section A based on the analysis of finding obtained from questioner. Similarly section B based on the analysis of content analysis method which was obtain from the financial reports of the firm I order to determine the level of disclosure present in the financial statement using environmental accounting.

### Section A: Descriptive Analysis

#### Question # 1

##### Accounting Information System (AIS)

The first question of the questioner was related to the accounting information system. Accounting information system is concerning with the centralized accounting software available in the firm based on information and technology which include simple accounting software or enterprise resource planning ERPs. AIS is a necessary requirement in present world in order to survive and compete in the market. Below table 1 shows the awareness of accounting information system in the Nigerian pharmaceutical industry and the standard of technology they are using to support the accounting department.

**Table 1: Accounting Information System (AIS)**

Availability of AIS	Frequency	Percentage
Available	40	100%
Not Available	0	0%
Unattended	-	-

Above results showed that all of the firm in our sample are using accounting information system which indicate that they are up to date and are well equipped with respect to information and technology.

#### Question # 2

##### Environmental Information System (ENVIS)

Firms were asked to determine the usage of environmental information system. The results are not hundred percent

positive with respect to the availability of ENVIS. The following table shows the breakup of sample in four categories as ENVIS available, ENVIS not available, working on implementation and the last one is future plan to implement ENVIS. The results indicate that 45% of the firms are using ENVIS, whereas 28% have no awareness of ENVIS. About 10% of the firms are in the process of implementing ENVIS and 18% have future intention to do that.

**Table 2: Environmental Information System (ENVIS)**

Availability of (ENVIS)	Frequency	Percentage
Available	18	45%
Not Available	11	28%
Implementing	4	10%
Future Plan	7	18%
Total	40	100%

#### Question # 3

##### Measurement of Environmental Damage Caused By Organizational Activity

The purpose of this question is to identify the awareness of environmental responsibility among the Nigeria pharmaceutical companies. It has three categories as the



first one has 58% which indicate that around 23 firms out of 40 are interested in measuring the impact on environmental damage causes by the organizational

activity. Mandatory requirements are met by 32% and 10% of the firms are only comply with disclosure requirement.

**Table 3: Environmental Damage**

Measurement of Environment Damage	Frequency	Percentage
Voluntary Action (above the mandatory)	23	58%
Mandatory Requirement	13	32%
Comply with Disclosure Requirement	4	10%
Total	40	100%

#### Question # 4

##### **Commitment with Environmental Accounting Standard**

The main objective of this study is to identify the level of commitment, the Nigerian pharmaceutical companies have with the environmental accounting standards. The

results are very positive in terms of commitment with environmental accounting shown in the below table 4. All the points have the mean greater than 3 which is the standard mean value. According to the results, this study indicates that Nigerian pharmaceutical industry is highly committed with environmental accounting by both aspect the internal policies and the environmental law.

**Table 4: The Degree of Commitment with Environmental Accounting Standard**

Measurement of Extant to which Companies are Complying	Mean	Std. Dev
Comply with environmental Law and Regulation	4.13	0.95
Comply with Social responsibility when setting Human Resource Policies	3.76	0.97
Commitment to the development of Environmental laws and Regulation with respect to environmental responsibility	3.56	0.92
Environmental Laws are for the sake of saving environmental resources	3.86	0.86
Compliance of Environmental Laws are Followed by Nigerian Regulator Authorities	3.72	0.79
Voluntary action taken by the Nigerian Pharma Industry Regarding Social and Environmental responsibility without imposing by the Law	3.38	0.88

#### Question # 5

##### **The Intensity in the Development of Environmental Accounting Function**

The following table carries the information related to the availability of electronic systems that would be required to increase the pace of development in environmental accounting function. In order to grow effective environmental accounting system, there is a requirement of centralized accounting system that should have branches in different departments especially in administration department. Moreover the employees

should be aware of social and environmental responsibilities and their consequences. In addition the work force of concerning department should be align with the accounting department for the development and disclosure of environmental accounting function.

Below results indicate that mostly respondents are positively align with the development of environmental accounting function. The arithmetic mean is higher than the standard mean 3. The results also indicate that the respondent have been facing issues in measuring cost related to environmental responsibilities.

**Table 5: The Degree of Commitment with Environmental Accounting Standard**

Measurement of Increase in the Development of Environmental Accounting Function	Mean	Std. Dev
Availability of Accounting Information System based on Information Technology (IT) to accomplish the requirement of Nigerian pharmaceutical industry in order to disclose the environmental performance	3.87	1.04
Availability of centralized information system that provide the awareness to the concern department with respect to the financial list of environmental accounting	3.54	1.24

Availability of centralized information system that provide the information to the management in order to make the decision related to environmental accounting	3.16	1.19
Training and educational documents related to the awareness of environmental disclosure	3.33	0.86
Training and educational workshops related to the measurement of environmental damages caused by production and the associated cost	3.15	0.79
Availability of environmental disclosure related to the performance on internet through companies web site or on open forums concerning environmental protection	2.87	1.00

#### Question # 6

#### The Efficiency and Effectiveness of Environmental Accounting among the Organizational Activities

The following table indicate the efficiency and effectiveness happen in the organizational activities due to the environmental accounting. The disposal of industrial waste have a mean value of 4.01 with the standard

deviation of 0.94. The provision of environmental cost have a mean value of 3.98 with the standard deviation of 0.85. Moreover, the pricing activity concerning with environmental responsibility also have a mean value of 3.88 with the standard deviation of 0.98. All the other aspect of environmental responsibility related to price of product and feedback of customers are the concern of administration department.

**Table 6: The Efficiency and Effectiveness of Environmental Accounting among the Organizational Activity**

Measurement of efficiency and effectiveness of environmental accounting	Mean	Std. Dev
The commitment of Nigerian pharmaceutical companies with the disposal of industrial waste make them superior from others	4.01	0.94
Production cost required to have a provision of environmental cost	3.98	0.85
Environmental responsibility need to be taken into account while determining prices	3.88	0.98
The lighting effect of production arena must be adequate and supportive for the performance and stability of workforce.	3.76	1.25
Environmental responsibility become the important feature of the industry and required by customers in their feedback report	3.68	1.01
Companies allocate the funds as a donation fulfill the environmental responsibility	3.54	1.06
Individual need are also a part of social responsibility which company identify and find a way to resolve it.	3.1	1.11

#### Section B: Content Analysis

The aim of this section is to identify the Nigerian pharmaceutical who are successfully using environmental accounting and meet the disclosure requirement. The level of disclosure by each firm are examined individually by their annual statements. In addition, below results

indicate that the level of awareness related to environmental accounting in Nigerian pharmaceutical industry is quite high as 75% of the firms are engage in fully disclosure of environmental responsibilities. These results are consistent with the above findings of environmental accounting which we achieve in section A.

**Table 7: Disclosure of Environmental Accounting**

Environmental Development	Disclosure		No Disclosure	
	Frequency	Percentage	Frequency	Percentage
Workforce Training	30	75%	10	25%
Compensation Policy	30	75%	10	25%
Environmental Protection	30	75%	10	25%
Environmental Policy	30	75%	10	25%
Environmental Performance	30	75%	10	25%
Corporate Social Responsibility	30	75%	10	25%
Public Health Care	30	75%	10	25%

#### CONCLUSION

This study aim to investigate the contribution of pharmaceutical industry of Nigeria in the field of environmental accounting and its disclosure. Initially we investigate the awareness of environmental responsibility among Nigerian pharmaceutical companies. Than we identify whether the firms have been taking steps to aware

their workforce with this information and trained them in order to exercise environmental accounting. Most importantly the availability of centralized electronic system for accounting that connect different department in order to assess the environmental accounting. The pace of development among Nigerian pharmaceutical companies in the field of environmental accounting is also

examined in this study. The efficiency and effectiveness of the environmental accounting system in Nigerian pharmaceutical industry is also investigated. We used two different methods of research namely: questioner and content analysis, in order to maximize the reliability of findings.

We achieve around 80% of the response from the questioner in which all the companies are using accounting information system and 45% of the firms have environmental information system. In addition, the arithmetic mean of rest of the question is more than 3 which is standard mean. The availability of environmental disclosure on internet is weak as its mean value is less than 3. In this study we discuss and investigate the environmental accounting and its disclosure from both aspect internal firm policies and governmental regulations.

## REFERENCES

1. Mazahrih, B. (2019). Integration of Environmental Costs into Accounting Information System. *Academy of Accounting and Financial Studies Journal*.
2. Minimol, M. C., & Makesh, K. G. (2014). Green accounting and reporting practices among Indian corporates. *Asia Pacific Journal of Research Vol: 1 Issue XIV*.
3. Virag, N. P., Mateş, D., Ardelean, D., & Feieş, C. G. (2014). Environmental accounting: a management tool for sustainable development. *Studia Universitatis „Vasile Goldiş” Arad, Seria Ştiinţe Economice*, 24(4), 164-171.
4. Ezeagba, C. E., Rachael, J. A. C., & Chiamaka, U. (2017). Environmental accounting disclosures and financial performance: A study of selected food and beverage companies in Nigeria (2006-2015). *International Journal of Academic Research in Business and Social Sciences*, 7(9), 162-174.
5. Kusuma, D. A. (2017). Social impact of environment 61834. Key words: Green Accounting, Environmental Accounting, Financial Accounting, Eco-efficiency, polluter-pays-principle.
6. Bennett, M., & James, P. (2017). *The Green bottom line: environmental accounting for management: current practice and future trends*. Routledge.
7. AA, K. (2016). An Assessment on the Level of Compliance in Handling and Disposal of Spent Oils from Retail Fuel Service Stations in Gwarinpa District of Abuja, Nigeria. *Universal Journal of Environmental Research & Technology*, 6(4).
8. Michelon, G., Pilonato, S., Ricceri, F., & Roberts, R. W. (2016). Behind camouflaging: traditional and innovative theoretical perspectives in social and environmental accounting research. *Sustainability Accounting, Management and Policy Journal*, 7(1), 2-25.
9. Aladwan, M. (2018). Undertaking of environmental accounting responsibility to achieve sustainable development: evidence from Jordanian chemical and mining companies. *International Journal of managerial and financial accounting*, 10(1), 48-64.
10. Russell, S., Milne, M. J., & Dey, C. (2017). Accounts of nature and the nature of accounts: critical reflections on environmental accounting and propositions for ecologically informed accounting. *Accounting, Auditing & Accountability Journal*, 30(7), 1426-1458.
11. EL-Shishini, H. M., & Upadhyaya, M. (2018). *Journal of Environmental Accounting and Management*. *Journal of Environmental Accounting and Management*, 6(1), 17-32.
12. Solovida, G. T., & Latan, H. (2017). Linking environmental strategy to environmental performance: mediation role of environmental management accounting. *Sustainability Accounting, Management and Policy Journal*, 8(5), 595-619.
13. Aladwan, M. (2018). Undertaking of environmental accounting responsibility to achieve sustainable development: evidence from Jordanian chemical and mining companies. *International Journal of managerial and financial accounting*, 10(1), 48-64.