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Impact of Environmental Management Accounting Practices and Report on Organisation Performance

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Abstract
This study examines the impact of environmental management accounting practices and report on organization performance. Specifically, the study investigates the present accounting practices for managing the significant environmental costs in the south-west Nigerian universities and to establish elements that can improve EMA sustainability within south-west Nigerian universities. The study made use of descriptive design survey type through structured questionnaire and the study employed stratified random and purposive sampling as sampling techniques. The findings of the study revealed that there is low present practice of environmental management accounting in South West Nigerian universities. The study also revealed that factors such as Low priority of accounting for environmental costs, resistance to change, Lack of institutional pressure, Lack of environmental responsibility & accountability and so on are strong factors that account for slow pace of EMA adoption in South West Nigerian universities. Therefore, it is concluded that the role of management accounting in improving environmental performance has not yet been recognised and this has impeded the EMA adoption in South West Nigerian universities. Based on these findings, it is a good time for organisations especially universities to integrate the two information systems both monetary and physical EMA for innovation. Moreover, the University should put in place procedures to assess environmental performance of key managers, or report environmental information for efficiency as well as University Authorities should adopt strategic planning and make available better incentives to manage environmental costs.
Keywords: Environmental Management, Accounting practices and University system

1. INTRODUCTION

1.1 Background to the Study

Management accounting is a set of practices and techniques aimed at providing managers with financial information to help them make decisions and maintain effective control over corporate resources. These include the methods and concepts necessary for effective planning, decision making (choosing among alternative business actions and controlling through the evaluation and interpretation of performance. Management accounting practice helps an organization to survive in the competitive, ever changing world, because it provides an important competitive advantage for an organization that guides managerial action, motivates behaviors, supports and creates the cultural values necessary to achieve an organization's strategic objectives. The increase in environmental-related problems and the award of ISO 14001 certificates to organisations that are environmentally friendly, has propelled government to promote environmental management accounting within countries (Simkins & Nolan, 2004). Accounting therefore is presently encountering the problem of accounting for environmental impacts and management of environmental performance. Environmental accounting is the provision of actual environmental costs incurred to stakeholders of an organisation (Deegan, 2003). Environmental management accounting as part of environmental accounting is the target of this study. Hence, Environment Management Accounting (EMA) can therefore be defined as the management of environmental performance through the benefit of environmental information in order to increase material efficiency, reduce environmental impacts and costs (James & Wolters, 2000).

EMA is an integral part of management accounting that assists in the accounting for environmentally-related management initiatives (Jasch, 2006). According to the International Federation of Accountants (IFAC 2006), EMA is the management of environmental and economic performance through the development and implementation of appropriate environment-related accounting systems and practices. While this may include reporting and auditing in some companies, environmental management accounting typically involves life-cycle costing, full-cost accounting, benefits assessment, and strategic planning for environmental management. Information generated through EMA can either be in monetary or physical terms. Correspondingly, the United Nations Division for Sustainable Development (UNDSD, 2001) states that: The general use of EMA information is for internal organizational calculations and decision making. EMA procedures for internal decision making includes both physical procedures for material and energy consumption, flows and final disposal, and monetarized procedures for costs, savings and revenues related to activities with a potential environmental impact. Accordingly, an adequate accounting system that considers both environmental and economic impacts is

important in assisting companies‟ to fulfill their environmental management tasks (Burritt, Hahn & Schaltegger 2002). Thus, some companies have started to develop integrated and complete management accounting systems, specifically taking into account the environmental impacts of their activities. Environmental management accounting allows for a better integration of the environmental information into the existing accounting systems. As it explicitly treats environmental costs and tracks environmental information, EMA --highlights hidden environmental costs and benefits (Jasch 2003). Nevertheless, little is known about EMA since the prior studies are dominantly prescriptive, often focusing on one specific EMA tool or managerial aspect of the organization. Accounting is now facing the challenge to account for the environment not only through its traditional role of recording and reporting financial information, but also through its role to manage environmental performance. Environmental accounting, which can assist in meeting this challenge, is an inclusive field of accounting, but represents a broader term that relates to the provision of relevant firm-level environmental performance information to internal and external stakeholders (Bennett & James 2000). Being a subset of environmental accounting, environmental management accounting (EMA) is regarded as an extension of conventional management accounting, and it is the focus of this research. Bye and large, for the purpose of this study, EMA is seen as the generation, analysis and use of monetary and physical (or financial and non-financial) environment-related information in order to improve organisational financial and environmental performance (Bartolomeo et al. 2000)

1.2 Statement of Research Problem

Energy can be identified as one of the causes of climate change, as it is the main factor of greenhouse gas emissions. In 2010, it was reported in the United States that 87% of greenhouse gas emissions came from energy-related gas (EIA 2011). Therefore, with increasing projection of energy consumption, environmental catastrophes such as earthquakes, tsunamis, hurricanes, droughts, and floods might occur frequently, which will negatively impact present and future generations (Hubpages 2011). In other words, the emergence of environmental issues which have increased the awareness for environmental protection among society, have pushed organizations to become environmentally responsible (Schaarsmith, 2005). Organizations which overlook this matter may not be able to sustain its position in the market in the long run as this issue has become a threat to business survival (Sulaiman & Mokhtar, 2010). One way to address environmental issue is to practice environmental management accounting. Environmental management accounting practices were implemented in order to overcome the limitation in conventional management accounting which cannot provide sufficient information relating to environmental management. Therefore, Ranganathan and Ditz (1996) pointed out that hidden costs for environment-related activities cannot be revealed with the use of conventional management accounting. Thus, the revelation of environment-related hidden costs would be beneficial to organizations in improving organizational performance. Besides the reduction of negative impacts on the environment, organizations can gain benefits from the adoption of environmental management accounting practices. These benefits include an improvement in corporate decision-making, cost reduction, stimulation of innovation and enhancement of organizational competitiveness, which will eventually lead to an improvement in the organization's bottom line (Sirisom & Sonthiprasat, 2011). However, a review of prior studies showed that organizations sometimes were unable to improve their performances. This was because, in order to implement environmental management accounting practices, high level of costs needed to be incurred. In view of this, some managers had questioned the benefits of being environmentally responsible, as to whether or not the benefits gain can outweigh the costs of implementing it. In fact, EMA has attracted interest in the management of environmental resources, but there is an absence of EMA studies on educational institutions (Burritt, 2004). This absence has culminated into this study, so as to fill the gap on the utilization of EMA by South-west Nigerian Universities. Tertiary education and industries outside Nigeria are being included in EMA research; however, universities as part of the service organisations have typically failed to be the focus of interest and attention. This is as a result of the fact that university produce less environmental impacts as compared to manufacturing organisations but they cause very noticeable environmental effects. These effects are the use of paper, energy, water and the production of waste materials. For the purpose of this, the costs of paper, energy, water usage and waste generation are the noticeable environmental costs for polytechnics. Having theses environmental impacts, universities can maintain the qualities that are valued in the physical environment through the enhancement of environmental sustainability. The environmental impacts caused by these universities need be investigated and managed for the purpose of enhancing environmental performance.

1.3 Research Questions

(i) How are the major environmental costs used in supporting environmental reporting and environmental management?
(ii) What are the Factors Influencing EMA Adoption for Nigerian Universities?

1.4 Objectives of the Study

The broad objective of this study is to examine the impact of environmental management accounting practices and report on organization performance while the specific objectives are to:

(i) Investigate the present accounting practices for managing the significant environmental costs
(ii) Establish elements that can improve EMA sustainability within south-west Nigerian universities

1.5 Scope of the Study

This study covered the Nigerian universities in south west Nigeria in exploring the impact of environmental management accounting practices and reporting on organization performance**.** Three states are considered in south west Nigeria which are Osun state, Ondo State and Ekiti State for promiscuous reason. Three universities in each state in which one will be federal, state and the other private university. For Osun state (Obafemi Awolowo University, Osun State University and Oduduwa University), Ondo State (Federal University of Akure , Adekunle Ajasin University and Elizade University), Ekiti State (Brigadier Adebayo University, Oye Ekiti, Ekiti State University and Afe Babalola University). Stratified and purposive samplings are employed as techniques to explore the study.

2. Literature Review

Concept of environment management accounting

According to Setthasakko (2010), environmental management accounting is "a business tool that provides essential data for corporate environmental management ranging from simple to comprehensive methods that link physical and monetary information for decision making". Environmental accounting is an inclusive field of accounting and covers all areas of accounting that may be affected by organizational responses to the environment-related issues. According to Gray and Bebbington (2001), environmental accounting includes: Accounting for contingent environmental liabilities/risks. Accounting for asset re-valuations and capital projections as they relate to the environment Cost analysis in key areas such as energy, waste and environmental protection Investment appraisal to include environmental factors, development of new accounting and information systems to cover all areas of environmental performance, assessing the costs and benefits of environmental improvement programs, developing accounting techniques which express assets and liabilities and costs in ecological (non-financial) terms. Vasile & Man (2012) define environment management accounting (EMA) as the process of identification, collection, calculation (estimation), analysis, internal reporting and use of cost information regarding materials and energy, and environmental costs within the decision process so as to adopt convenient decisions capable of contributing environmental protection. USEPA (2005**)** asserts that the term environmental accounting has many meanings and uses. It can refer to national income accounting, financial accounting, or internal business managerial accounting. National income accounting is a macro-economic measure. GDP is an example and has been frequently used as a key measure of the society's economic wellbeing with the consideration of environmental depletion and degradation costs. In this context, environmental accounting has been termed 'natural resources accounting'. Financial accounting refers to the estimation and public reporting of environmental liabilities and financially material environmental costs based on generally accepted accounting principles (GAAP). Management accounting is the process of identifying, collecting, and analysing environmental information primarily for internal purposes. Unlike financial accounting, which is ruled or governed by GAAP, management accounting practices and systems can be tailored to meet the needs of the business they serve. Deegan (2003) defines environmental accounting as a broader term that relates to the provision of environmental-performance related information to stakeholders both within and outside the organisation. While environmental accounting can be 'corporate-focused', it should also be appreciated that environmental accounting can also be undertaken at a national or regional level. Howes (2004) opines that environmental accounting is all about the link between environmental and financial performance more visible, getting 'environmental sustainability' embedded within an organisation's culture and operations and providing decision-makers with the sort of information that can help them to reduce costs and business risk and to add value. Environmental management accounting is viewed as an extension of conventional management accounting. Management accounting is defined as measuring and reporting 'financial and non-financial information that helps managers make decisions to fulfill the goals of an organization'. Environmental accounting and reporting is concerned with the aspect of accounting which assesses the financial effects (returns and gain) of environmental impacts on organisations to inform external stakeholders (e.g. investors, lenders and other financial stakeholders).

2.2 Evolution of Environmental Management Accounting (EMA)

In order to fill in the gap between environmental issues and accounting practices, the US Environmental Protection Agency was the first national agency to set up a formal programme to promote the adoption of EMA in the early 1990s (Jasch, 2006). Since then, there have been many environmentally-related management

initiatives being developed and implemented. However, these interests were categorised by the Working Group on EMA of United Nations Division for Sustainable Development (UN DSD EMA WG). Later, the International Federation of Accountants (IFAC, 1998) developed a guidance document on EMA based on the publications by UN DSD EMA WG. The aim of the guidance was to reduce some of the conflicts and confusions on this new accounting tool by providing a general framework and a set of definitions. According to Jasch (2006), EMA is the next step in the evolution of management accounting. Traditional Management Accounting (MA) has always focused on monetary and non-monetary items. The IFAC had outlined the evolution of MA over time in four stages with four different focuses, which are listed as below:

Stage 1 (pre 1950) – cost determination and financial control;
Stage 2 (by 1965) – information provision for management planning and control;
Stage 3 (by 1985) - waste reduction of resources in business processes; and
Stage 4 (by 1995) – creation of value through effective resources use.

In general, the focus of IFAC on MA had moved from monetary to nonmonetary (i.e., stage 1 to 2) and also from reduction of waste to generation of value (i.e., stage 3 to 4). Although EMA is a new accounting tool, the MA goals which are listed as above has been used by EMA. Besides, focusing on resource productivity in stage 3 and 4 corresponds with the EMA's focus on accounting for the flows of natural resources. In addition, EMA also has a strong hub on the Stage 1 and 2 which are goals of cost determination, financial control and information provision. Nevertheless, EMA is still continuing to improve and evolve, which is on the same track with the evolution of MA towards the resource productivity and value creation activities for which EMA data are well suited.

The Link between Environmental Management and Accounting – EMA

Management accounting techniques can support environmental management to improve both environmental and financial performance, but a link between environmental management and accounting is required (Bartolomeo et al. 1999). A literature review reveals a lack of research that documents the current state of the link as it relates to universities. Further, the reason for this lack remains unexplored. In view of this absence, the research has two objectives – understanding the current state of accounting practices for the purpose of environmental management, and exploring factors influencing EMA adoption within universities. Experiences from the business world suggest: a linking of these systems [environmental management and accounting systems] and better communication and coordination among affected personnel is easily attained, with little financial or personnel costs, and has significant organizational benefits (Epstein 1996). Financial or resource constraints does not seem to be the only barrier to provide the linkage as suggested by Epstein (1996). There might be some other barriers. Given that environmental management is an essential part of EMA, barriers (or drivers) to implement environmental initiatives could be potential factors having influence on the uses and applications of EMA. Therefore, barriers (or drivers) to implement environmental management specific to universities need to be examined for the purpose of providing a basis for exploring factors that might impede, or assist in, the establishment of EMA within universities.

3. Empirical Literature

Hoffman (2001) examines social activists which constitute a visible driver to changes in organisational environmental practices, including accounting. In addition to institutional considerations provided by institutional theory, the reason for organisations to incorporate environmental concerns into accounting practices may comprise cultural components 54, which can be explained by legitimacy theory. In other words, social responsibility could be an important motive to drive accounting changes. Florida and Davison (2001) investigate why organisations choose to adopt environmental management systems, and institutionalize pollution prevention programs. They find a positive correlation of the adoption/institutionalization to active engagement with community stakeholders. Building from the results of a survey of ISO14001 certified companies across 15 countries, it is suggested that the desire to be a good neighbour is one of the strongest motivators for companies to pursue certification. Bansal and Roth (2000) conducted a survey on 53 firms in the UK and Japan of the motivations for adopting initiatives to mitigate their environmental impacts. The results support that 'firms motivated by legitimation were focused on the stakeholders most influential in prescribing or articulating legitimacy concerns'.

Adler, Everett, and Waldron (2000) conducted a survey that asked management accountants, in New Zealand manufacturing businesses, to indicate the techniques adopted in their business. While many studies have focused on particular techniques such as ABC or target costing, Adler et al. provided a questionnaire that included a vast array of management accounting techniques to provide a fuller set of response options. Respondents were asked to rank management techniques on a five point scale "from most used to least used". A judgment sampling method was chosen to achieve a response rate of 19% that provided 165 completed questionnaires. Traditional management accounting techniques, such as full costing, direct costing and standard costing were found to be used more often than advanced management accounting techniques, such as strategic

management accounting. The study by Adler et al. (2000) is generally consistent with the lack of adoption of advanced management accounting techniques as stated by the Ainikkal (1993) and Hawkes et al. (2003) studies, but inconsistent with respect to individual techniques. It was found that firms in Australia adopted ABC, and cost of quality techniques and also that big firm were more likely to use modern accounting techniques Anand et al. (2004) in their study of cost management practices in India studied the responses furnished by 53 CFOs in Indian corporations. The objective of their study was to capture the development in cost management practices such as accounting for overheads, applications of budgetary control and standard costing in corporate India. The survey questionnaire also aimed to verify any significant difference in management motivation for the implementation and use of standard costing as a control tool between activities based cost management (ABCM) user firms and firms using traditional costing systems. The study established that the firms are successful in capturing accurate cost and profit information from their ABC cost systems for value chain and supply chain analysis. The results suggest that the firms have better insight for benchmarking and budgeting with ABC cost system yet the consistency in their priority of budget goals is lacking unlike the firms who are using traditional costing systems. Abdel-Kader and Luther (2006) studied management accounting practices (MAPs) in the food and drinks industry in the U.K. in order to understand the level of MAP's sophistication and the factors that affect implementation of MAPs in this industry. The research methodology used in this study was a survey questionnaire sent to 650 executives of the industry. In total, 245 usable completed questionnaires were received and analyzed. Respondents were asked to indicate the frequency of use of 38 management accounting practices (MAPs) using a Likert scale (1 indicating never and 5 indicating very often). They were also asked to assess the importance of each technique/practice by rating these as 'not important, moderately important or important. The study found that as companies moved into a more uncertain environment, the sophistication level of management accounting practices increased. Likewise, as their power relative to customers' diminished, companies moved up the stages of evolution. Analysis of the management accounting practices used suggested that the management accounting systems employed in many food and drinks companies were not particularly sophisticated. Taking the industry as a whole, there was little evidence of management accounting directly connected with 'value creation'. Liaqat (2006) carried out an empirical study to find out the application of contemporary management accounting techniques in Indian industry through a survey of 530 member companies of the National Association of Financial Directors and Cost Controllers. Sixty three companies responded which constituted the sample; a response rate of about 12%. The sample was stratified in two segments; ABCM user firms and Non ABCM user firms. A five point Likert scale was used. The focus of the study was to find evidence on how widely traditional and contemporary management accounting practices were adopted by Indian industry. The investigations revealed that improvement of overall profitability and cost reduction were the motivating factors for using management accounting in Indian companies. The researcher found a positive association between the adoption of ABC and company characteristics (e.g. degree of customization, pressure of competition, business size, and proportion of overhead to total cost). However, none of the differences was found to be significant at 10% level. Isa & Thye (2006) examined the usage of management accounting practices in manufacturing firms in Malaysia. They also studied the relationship between product variety, complexity of production process, level of competition, company size, overhead expenses and usage of advanced management accounting practices. Management accountants in 500 manufacturing firms were randomly selected from the 2004/2005 Federation of Malaysian Manufacturers Directory. A total of 75 usable responses were received, that represented a response rate of 15%. Respondents comprised of senior level managers, including Chief Executive Officers, General Managers and Management Accountants. In this study, the measures for traditional management accounting techniques (TMAT) and advanced management accounting techniques (AMAT) were adopted from Waldron and Everett (2004). The TMAT were represented by four techniques: full costing, standard costing, job order costing and process costing. The AMAT comprised thirteen techniques: Activity-Based Costing, Activity-Based Management, Target Costing, Kaizen Costing, Value Added Accounting, Cost of Quality, Economic Value Added, Life Cycle Costing, Target Cost Planning, Cost Modeling, Strategic Management Accounting, Throughput Accounting and Back Flush Costing. Salawu et al., (2012) did a survey of Activity Based Costing Adoption Among Manufacturing Companies in Nigeria. The study reveals that inability of the traditional cost systems to provide relevant cost was the most highly ranked reason in their decision to adopt ABC. Traditional methods of allocating overhead were therefore believed to be deficient in terms of improving global competitiveness. Also, 60% of the respondents have adopted ABC due to increased ranges of products, competition and increased overhead. Familiarity with and adoption of ABC was found to be across the manufacturing, more than half of the sample are familiar with it. The 40% of respondents who have not adopted ABC cited the cost and complexity involved with implementation as the main reason in non adoption. However, cost of implementing ABC was enormous which hinder the small scale manufacturing from adopting it. This result may reflect the fact that larger firms are more likely to have the diverse mix of products or services that makes the use of ABC advantages. Consequently, the study recommends that the companies who have not adopted ABC because of its high cost of implementation should endeavor to consider its adoption because in the

long run the benefits derive from it will outweigh its cost. It helps to identify inefficient products, departments and activities and helps to allocate more resources on profitable products. In conclusion, the senior management should also give their utmost support to the implementation and success of ABC. Waweru, (1999) study examined the management accounting practices, and management accounting techniques used by publicly quoted companies in Kenya and the type of management accounting reports produced and the frequency of their production. The study also explored the management accounting techniques used by these companies and the extent of their utilization. The basic premises of the study were that the success of any business in a competitive environment depends to a large extent, on the availability of timely and quality information for decision making. The study was a census study of all the publicly quoted companies in Kenya. Data was collected using a semi-structured questionnaire and analysed using tables, proportions, averages and percentages. The findings however revealed that there was no significant relationship between type and process of budgeting and the ownership and sector of the company. The most important purpose of management accounting reports were planning and control. Most of the management accounting reports are produced monthly. There does not exist a significant gap between management accounting theory and management accounting practice. However, there is limited application of quantitative management accounting techniques in Kenya. There is preference of simple management accounting techniques to the complex techniques. This is probably due to the cost involved and the complexity of these elaborate techniques which may outweigh their benefits. On the basis of these findings, the following managerial recommendations appear appropriate: Companies in Kenya should move towards strategic management accounting.

Thanju (2009) conducted a study on determinants of management accounting changes in three private Hospitals in Nairobi during the study period. Management accounting changes have been documented in developed countries and have been related to changes in business environment. However, no such study had been document in private Hospitals in Kenya. This was the gap that this research intended to fill. The objective of the study was to evaluate the management accounting changes and determinants of these changes that occurred in these three hospitals in Nairobi between the period of 2006 to 2011.To achieve the objectives, the researcher used descriptive cross sectional survey design where primary data was collected through structured questionnaires and personal interviews with financial managers/ management accountants of the respective Private hospitals. The data was analyzed using descriptive statistics, presented in narrations, graphical and pictorial designs for interpretation and summarization. The findings indicated considerable management accounting changes in these hospitals in all the areas. The firms also had adopted many modern management accounting techniques. The findings suggest the determinants of management accounting change included high competition, advancement in technology, need for financial and non financial measures, financial performance, board members expectation, statutory and regulatory bodies requirements as well as availability of resources. The study revealed that high accounting staff turnover, inadequate staffs, poor communication with line managers, strict government and regulatory bodies' requirements and difficulties in accessing strategic information about competitors as the main factors that hinder management accounting change.

3. Research Methodology

The study adopted a descriptive survey design. The population consists all principal accountants and the chief environmentalists in the Nigerian South West Universities. This study adopted a stratified random and purposive sampling to select a sample of 334 participants. 27 financial officers and principal accountants, 63 human resources and administrative officers, 171 health, safety and environmental officers and 63 quality assurance control officers were selected from nine universities and the samples are selected based on proportionality.

4. Discussion of Finding

Background of Respondents

Respondents' background were categorized into job position held, length of service, proportion of time spent on environmental management, and type of university which respondents' organization belong to. The results are presented in the following sub-sections.

1. Job Positions

Table 1: shows the different job positions of respondents in the survey.

S/N	Items	Frequency	Percentage	Valid Percentage	Cumulative Percentage
1	Finance Officers and Accountants	3	8.3	8.3	8.3
2	Human Resources and Administrative Officers	7	19.4	19.4	27.8
3	Health, Safety and Environmental Officers	19	52.8	52.8	80.6
4	Quality assurance Officers	7	19.4	19.4	100
	Total	36	100	100	

Just above half (52.8%) of the respondents were health, safety and environmental officers. This was

followed equally by respondents who are quality assurance officers as well as human resources and, administrative officers each with 19.4% of the sample. While, only 8.3 % of the respondents were finance staffs and accountants. The result indicates that personnel from other departments were also to a certain extent involved in environmental management in their organizations.

Table 2: Length of Service

Frequency	Percent	Valid Percent	Cumulative Percent
Less than one year	13.9	13.9	13.9
One to two years	11.1	11.1	25.0
Three to four years	8.3	8.3	33.3
Five years and above	66.7	66.7	100.0
Total	100	100	

It was apparent that two-thirds or 66.7% of the respondents have served their current organization for a minimum of five years or more. The result revealed that a majority of the respondents have vast experience and knowledge on their current organization's operations

Table 3: Time Spent on Environmental Management

S/N	Items	Frequency	Percent	Valid Percent	Cumulative Percent
1	1%-29% (very little)	8	22.2	22.2	22.2
2	30%-49% (to some extent)	9	25.0	25.0	47.2
3	50%-69% (to a great extent)	9	25.0	25.0	72.2
4	70%-100% (to a very great extent)	10	27.8	27.8	100
	Total	36	100	100	

The results revealed that respondents' extent of involvement in environmental management varies from extensive involvement to very little involvement. Approximately, 27.8% of respondents were extensively involved in environmental management, while 22.2% of them have very little involvement in this activity. Nonetheless, there were little differences in the distribution across organizations in the survey in terms of their degree of involvement in environmental management.

Table 4: Type of University

S/N	Items	Frequency	Percent	Valid Percent	Cumulative Percent
1	Federal University	12	33.3	33.3	33.3
2	State University	12	33.3	33.3	66.6
3	Private University	12	33.4	33.4	100
	Total	36	100	100	

The result indicates that 33.3% of the organizations belong to the Federal, state and private university respectively.

Table 5: Summary of present accounting practices for managing environmental costs in Nigerian Universities

S/N	ITEMS	1	2	3	4	5	Mean	Standard Deviation
1	Nigerian universities have main environmental challenges	0.0	0.0	35.2	40.8	24.0	3.84	0.425
2	Universities in Nigeria have an environmental policy	0.0	5.7	32.3	36.4	25.6	3.58	0.762
3	Nigerian universities have a procedure to assess the university's environmental performance	9.0	11.0	25	30.5	24.5	3.66	0.525
4	Any form of environmental reporting in Nigerian universities.	0.0	7.5	46.4	25.5	20.6	3.37	0.635
5	University traces any of the major environmental costs (either physical or monetary)	1.5	20	31.4	40.1	7.0	3.22	0.825
6	Nigerian universities account for the major environmental costs.	1.4	7.6	42.8	10	38.2	3.96	0.906
7	Total costs for electricity and water are separately identified in the accounting system, but they are accumulated in the same overhead account.	9.0	22.4	30.6	20.3	24.7	3.02	0.856
8	Paper cost is accumulated in an overhead account.	0.0	20.0	26.8	21.2	32.5	3.64	0.654
9	Waste costs are recognised as including the costs incurred to have wastes removed	0.0	20.6	30.4	40.8	10.2	3.06	1.026
10	For the major environmental costs captured within the accounting system, only monetary information is provided	9.6	14.4	40.2	30.8	5.0	2.16	1.250
11	There is no link between systems collecting monetary and physical environmental cost information	5.6	25.8	30.4	28.2	9.60	2.36	1.145
12	Key environmental performance indicators of the major environmental costs are not established	0.8	12	32.5	22.5	25	2.96	0.848
14	Managers are not assessed against their environmental performance	4.0	22.5	25.8	37.2	10.5	2.66	1.097
15	Environmental sustainability information is reported in annual reports	0.0	10.3	28.6	30.1	22.3	2.83	0.982
	Overall average for environment management accounting						3.17	0.694

The results revealed to some extent that the respondents perceived their universities had conducted appropriate environmental management accounting activities as reflected by the overall mean value of 3.17 (SD = .694). In addition, the results indicated that most of the environmental management activities were rated with mean values between 2.16 and 3.64 (standard deviation: .654 – 1.250). The universities awareness of environmental information, environmental policy and procedures to assess university environmental performance were rated with mean values between 3.22 and 3.84 (standard deviation: .425-.825). The overall average for environment management accounting was rated with mean values of 3.17 and standard deviation of 0.694. The environment management accounting practices was not of highly rated used in the universities.

Table 6: A summary of Factors Influencing EMA Adoption for Nigerian Universities

S/N	ITEMS	1	**2**	3	4	5	Mean	Standard Deviation
1	Low priority of accounting for environmental costs	0.0	0.0	2.5	27.5	59.5	4.47	0.44
2	resistance to change	0.0	0.0	2.5	30.0	56.5	4.45	0.41
3	Lack of institutional pressure	0.0	7.2	5.0	34.0	53.8	4.41	o.51
4	Lack of environmental responsibility & accountability	0.0	4.0	8.0	33.5	54.5	4.40	0.49
5	Environmental costs are not considered significant	0.0	12.8	0.0	37.2	50	4.36	0,62
6	Difficulties in collecting or allocating environmental costs	0.0	13.2	0.0	46.8	40.0	4.34	0.42
7	Low physical environmental uncertainty	0.0	2.5	7.5	47.2	39.0	4.31	0.43
8	Lack of institutional pressure	0.0	0.0	14.0	42.5	42.5	4.28	0.67
9	lack of legitimacy considerations	2.5	0.0	12.0	62.5	22.0	42.4	0.67
10	Few incentives provided to manage environmental costs	5.0	7.0	5.0	52.5	30.5	4.16	0.56
	Overall Average for factors influencing EMA adoption for Nigerian Universities						4.34	0.49

The table 5 shows the result of factors influencing EMA adoption for Nigerian universities: 89.4% of low priority of accounting for environmental costs, 89.0% of resistance to change, 88.2% of lack of institutional pressure**,** 88.0% of lack of environmental responsibility & accountability, 87.2% of environmental costs are not considered significant, 86.8% of difficulties in collecting or allocating environmental cost, 86.2% of low physical environmental uncertainty, 85.6% of lack of institutional pressure, 84.8% of lack of legitimacy considerations, 83.2% of few incentives provided to manage environmental costs . From the overall mean of 4.34, factors influencing EMA adoption for Nigerian Universities was rated as highly used. This implies that the foregoing factors appear to be responsible for slow pace of EMA adoption in South West Nigerian universities.

5. Conclusion

This study examines the impact of environmental management accounting practices and report on organization performance. Specifically, the study investigates the present accounting practices for managing the significant environmental costs in the south-west Nigerian universities and to establish elements that can improve EMA sustainability within south-west Nigerian universities. The findings of the study revealed that there is low present practice of environmental management accounting in South West Nigerian universities. The study also revealed that factors such as low priority of accounting for environmental costs, resistance to change, lack of institutional pressure, lack of environmental responsibility & accountability and so on are strong factors that account for slow pace of EMA adoption in South West Nigerian universities. Therefore, it is concluded that the role of management accounting in improving environmental performance has not yet been recognised and this has impeded the EMA adoption in South West Nigerian universities.

6. Recommendations

Based on these findings, it is a good time for organisations especially universities to integrate the two information systems both monetary and physical EMA for innovation. Moreover, the University should put in place procedures to assess environmental performance of key managers, or report environmental information for efficiency. University Authorities should adopt strategic planning and make available better incentives to manage environmental costs.

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