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Editorial

Welcome to this volume of *Nkumba Business Journal* (NBJ). It is the goal of the journal to offer a visible outlet through which research done at Nkumba University and other parts of the world may be disseminated to scholars, policy makers and practitioners. Now in its fifteenth volume, we are happy that the journal has not only been published each year for the last fourteen years but also that it has *grown* a great deal—attracting a diverse range of contributions from various institutions around the world and reaching an increasing number of readers in academia, government, private sector and civil society. We are also happy that it has maintained a multidisciplinary scope under whose auspices it has allowed readers to appreciate developments in their areas interest from the vantage point of a business approach that recognises the interconnectedness of these areas to other areas of human endeavour.

In this issue, fifteen articles have been published. These touch on public management, health services, procurement, the environment, ICT, globalisation, microfinance, counselling and higher education. Each of the articles articulates insightful implications for business. In addition, in a number of instances, lines of similarity and contrast are seen across the various articles, reflecting disciplinary and other contextual peculiarities. It is our hope that readers will find this *intertextuality* useful. Indeed, we hope that future contributions will mirror and extend the discussions contained herein. Notes for contributors have been published at the end of the Journal and the editor invites contributions of manuscripts for the next volume of the Journal.

As usual, publication of the journal benefited from the institutional support of Nkumba University, the management board of the Journal and a team of anonymous reviewers who evaluated the quality of the submissions received. The editor wishes to thank them. As well, the authors worked hard to revise their submissions as was suggested by the reviewers and the editor wishes to thank them for their patience and conscientiousness.

Professor Wilson Muyinda Mande
Editor

Effects of Environmental Accounting on the Performance of Quoted Manufacturing Companies in Nigeria

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Abstract. *The objective of this study is to examine the relationship between environmental accounting and the performance of quoted manufacturing companies in Nigeria. Data were collected from 36 companies in the country and analysed using descriptive and simple regression techniques. The findings show that environmental accounting does not significantly affect return on capital employed and asset turnover but has significant effect on net profit and earnings per share. Also, a firm can increase its overall corporate performance by focusing on non-financial performance measures such as service quality and customer satisfaction. The paper concludes that business should not give priority to financial measures alone; it should also take non-financial measures into consideration because of their growing importance in most successful organizations. The study recommends that quoted manufacturing companies should account for, and report the effects of, their economic activities on the environment. They should also pay attention to their marketing performance because it represents an important aspect of their non-financial performance.*

Keywords: Environmental accounting, Customer accounting, Marketing

Introduction

The increasing trend in civilization and industrialization is generating wastes and pollution on an astronomically high scale. This has made the magnitude of pollution of the environment becomes quite alarming (Abdul, Nikhil and Bhangban, 2007). Well known tragedies like the chemical poisoning in Mima mate (Japan), massive oil spill by Terry Canyon accident have caused serious pollution to air, land, and other natural resources.(Abdul et al., 2007). These incidences have led to the increased awareness in recent times about the interaction between firms and the environment in which they function (Adediran & Atu, 2010). The awareness is as a result of the concern about factors such as resources scarcity, resources depletion, environmental degradation and the effect of the operation of firms which has led to the imbalances in the environmental system (Adediran & Atu, 2010). Asaolu & Osemene (2009) added that poverty and population pressure are some of the causes of natural resources depletion leading to serious havoc in the

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environment. These have led to the global concern for sustainable development and also for firms to be environmentally sensitive. Therefore, it became a necessity to account, measure and evaluate environmental impacts on investments in organizations. These goals would enable users of accounting information to make decisions that are economically sound. A sound and systematic approach of environmental accounting system must be integrated with other management system to be implemented so as to ensure that environmental issues are properly taken care of. However, accounting for the environment is more than determining the cost of production in a conventional way but it includes considering the environmental implication of production in determining the total cost of production.

The interrelationship between accounting, for the environment, management information; decision making and accountability is being examined (Environmental Protection Agency, 1995). Environmental accounting in Nigeria is an existing concept that studies the impact of production activities of companies on the physical environment (Adediran & Alade, 2013). Organizations whose activities impact the environment such as the telecommunication industry, oil, gas and chemical companies and manufacturing companies ought to as a matter of urgency imbibe the culture of environmental reporting and accounting. Willsher (2004) as cited by Osemene, Kasum and Yahaya (2012) noted that profit of organisations can be grossly affected if the environment is neglected or inadequately taken care of.

This paper therefore, contributes from an African country's perspective, to the global literature on environmental accounting in annual reports. It also provides a basis for corporate decision making as well as determining the effect of accounting for the environment on the performance of quoted companies in Nigeria. However, should companies continue with environmental accounting in a challenging business environment such as Nigeria when there might be an unfavourable economic return? This is why it is of importance to examine the relevance of environmental accounting practices to sustainability and performance of companies. The products or services of a company do not only determine its success or failure but also, the intricacy of its environment. The research questions raised in this study are:

1. What is the effect of accounting for the environment on the financial performance of business organisations?
2. Is there any relationship between environmental accounting and the non-financial performance measure of business organisations?

The study hypothesized that:

H_{01}: Accounting for the environment does not significantly affect the financial performance of business organisations.

H_{02}: There is no significant relationship between environmental accounting and the non-financial performance measures of business organisations.

Related Literature

Conceptual Framework

Environmental accounting is defined as the collection, analysis and assessment of environmental and financial performance data obtained from business management information systems, environmental management and financial accounting systems. The taking of corrective management action to reduce environmental impacts and costs plus, where appropriate, the external reporting of the environmental and financial benefits in verified corporate environmental reports or published annual reports and accounts (Environmental Agency, 2010).

It is a growing field in Accounting which identifies resource use, measures and communicates costs of an organization or national economy actual or potential impact on the environment (Osemene, 2010). Environmental accounting is an inclusive field of accounting which provides information for both internal use, that is, providing environmental information relevant for management use in area of pricing, regulating expenditure and budgeting; and external use which involves disclosing environmental information of public interest to the public and to the financial community (Yakhou & Dorweiler, 2004). Thus, with the increasing focus on the environment, Accounting fills an essential role in the measurement of environmental performance.

Environmental Protection Agency (1995), defined environmental accounting as "the identification and measurement of the costs of environmental materials and activities and using this information for environmental management decisions". In other words, the purpose of Environmental Accounting is to recognize and seek to mitigate the negative environmental effects of activities and systems on organisations. Howes (2002) defined environmental accounting as: 'the generation, analysis and use of monetized environmentally related information in order to improve corporate environmental and economic performance'. In the opinion of Howes, environmental accounting does not only focus on internal and external environmental accounting but makes the link between environmental and financial performance more visible. It assists in getting environmental sustainability integrated within an organization's culture and operations.

Environmental accounting is a flexible tool that can cover a variety of frameworks. Chen (2009) noted that when manufacturers decide to determine the type, quantity and prices of their products to factors such as market conditions and customer retention; the long-term growth of the industry is considered the most important factor in product costing. In most cases, different products are produced in the different manufacturing processes and each process has its own environmental costs of production. Environmental accounting is also used for investment analysis. The investors can more accurately assess the potential profitability of an investment when they are armed with environmental accounting reports. Keeping the environment in terms of understanding the long-term operating costs of each business unit is important. The range of environmental accounting through the analysis of the life cycle costs and environmental impacts of the company's inputs and outputs can be specified. It is important to be aware of the costs of environmental impacts and identify the past and future values of an organization's activities. The companies develop reporting systems to inform internal and external decision makers, after environmental impacts are identified and measured (Institute of Management Accountants, 1996).

According to Environmental Protection Agency (1995), the approaches to environmental accounting are monetary approach and physical approach.

Physical Approach: In order to assess cost correctly, an organization must collect not only monetary data, but also non-monetary data on materials use, personnel hours, and other cost drivers. It places particular emphasis on the material-related cost drivers, because material purchase costs are a major cost driver in many organizations. The use of energy, water and materials, as well as the generation of wastes and chemical emission are directly related to many of the environmental impacts of organizations. In contrast to monetary approach, it focuses on company's impacts on its environment and is expressed in terms of physical units such as tons.

Monetary Approach: This approach addresses the environmental aspects of corporate activities expressed in the monetary units. It generates monetary information for management use such as payment of fines for breaking environmental laws and investment in capital projects.

This approach does not only provides the basis for most management decision but also addresses the issues of how to identify, track and treat costs incurred as a result of the corporation's impact on the environment. Monetary approach contributes to strategic and operational planning, acts as a control and accountability device. It provides the main systematic source of information for decisions about how to achieve desired corporate goals. However, those costs are often hidden by poor material tracking data and inaccurate overhead allocation (Environmental Protection Agency, 1995).

According to Ranayamatian & Dirz (1996), 'environmental accounting shows the necessity of measuring the environmental performance costs and analysing it objectively, so that it can lead to the rationalization of administrative decisions. The mere measurement of environmental costs is considered useless unless it results in better decision making'. Osemene & Olaoye (2009) observed that industrial pollution, oil spillage, deforestation and other related economic activities might have been responsible for reduction in the quality and usefulness of lives. The natural resources and environment account systems assist competent authorities of the country in preparing the plan for long-term usage of their natural resources that is explored for future development. The provision of accounting data for the operations and environmental activities can make a country to determine the funds needed to achieve optimal management of the environment (Akabom, 2012). More so, environmental accounting when well-handled and implemented can bring great benefit to individuals and companies. Enahoro (2009) noted that turnover of companies can be increased due to enhanced image; company's shares could appear more attractive to investors due to enhance product image and environmental risk rating. This would probably bring about a better access and terms from lending institutions due to favourable environmental risk incidents (Adediran & Alade, 2013).

Nigeria's national development plans have components which address sustainable consumption and production patterns (Osemene, 2010). Some of the policies addressing the concerns are the National Policy on the Environment, Vision 2010, National Agenda 21, National Industrial Policy, National Policy on Agriculture, National Trade and Tourism Policy, Cultural Policy and the National Energy Policy. The institutional mechanisms involved in identifying environmental problems according to the National Agenda 21(1999) are:

Federal Ministry of Environment with the institutional arrangement of overall coordination of environmental management in Nigeria;

1. Niger Delta Development Commission with the mandate to, inter alia, monitor environmental sustainability of products for export;
2. Federal Produce Inspection service;
3. National Committee on the Implementation of Nigeria's National Agenda 21;
4. Standards Organizations of Nigeria (they establish and monitor industrial quality standard); and
5. National Agency for Food and Drug Administration and Control (they regulate health standards of food and drugs).

Environmental regulation in Nigeria existed as window dressing before 1998. This is because the major preoccupation of government was the provision of infrastructural facilities. Industrial pollution control and hazardous waste management was secondary while industrialization and economic development were of primary priority. However, the scenario changed as a result of an attempt in 1988 to dump toxic waste by Italy on a small port town (Koko) in the Niger Delta region of Nigeria (Adegoroye, 1997).

This event shocked the Federal Government of Nigeria and highlighted the porous nature of environmental regulation in the country. This incident gave rise to the promulgation of Decree No. 42 of 1988 by Federal Military Government of Nigeria. This decree made it a criminal offence for anyone to carry or dump any harmful waste within the entire land mass and waters of Nigeria (Nwagwe, 2008). This gave rise to the establishment of an agency to oversee environmental protection which is known as the Federal Environmental Protection Agency (FEPA). The Decree establishing the Agency was later amended in 1992 by Decree No. 59 of 1992, granting FEPA the responsibility for protection of the environment, biological diversity, conservation and environmental technology and research. It was this Decree that created the first standards of environmental regulation in Nigeria. The standards include water quality, effluent limitation, air quality, atmospheric protection, ozone layer protection, noise levels and the control of hazardous substances (Nwagwe, 2008).

The Federal Government of Nigeria is fully committed to the objectives, policies and mechanisms for achieving sustainable development as is stated in Agenda 21, Nigeria (1999). The Government mounted effective machinery to enhance environmental awareness through public enlightenment and environmental education; created a fora for building consensus and exchange of information and ideas among all stakeholders. They had Manufacturer Association of

Nigeria's (MAN) representative in FEPA ministerial governing council; involvement of workers and unions in promoting occupational safety, safe working environment through improved factory conditions, protection of workers and consumers' interests; promotion of environmental friendly production processes; among others(Agenda 21-Nigeria,1999). In the efforts to control pollution in Nigeria, Osemene (2010) observed that organized groups, big organisations and associations such as MAN are easier to deal and communicate with. However, Adelegan (2003) reiterated that available industrial pollution control guidelines and standards are neither sound nor correctly enforced in Nigeria. Adelegan (2004) noted that there are no incentives for the adoption of pollution abatement measures and when the environment is polluted, little or no disincentives.

Firm Financial and Non-Financial Performance

Performance measurement has become an important issue in many organizations, probably because it enables managers to predict the future outcome and direction of the business. Performance is simply defined as "...end result of activity" (Wheelen & Hunger, 2002). Performance as a concept has a variety of meaning, this include subjective and the objective measures (Appiah-Adu, 1998). The subjective is concerned with the firm performance relative to its expectation while objective method is based on absolute measures of performance. Businesses also measure their activity in terms of financial and non-financial performance. They tend to rely less on financial measures based on Accounting Standards such as profit, return on investment, return on assets, alone to assess overall corporate performance (Wheelen & Hunger, 2002).

However, such measures that focus solely on financial performance are seen as less appropriate to deal with the issues which confront organisations now (Kaplan & Norton, 1996; Ittner & Larcker 1998; Ambler, 2000; Ahn, 2001; Wheelen & Hunger, 2002; Pont & Shaw, 2003). Consequently, there has been increase appeal for non-financial performance measures (Malina & Selto, 2001). The use of non-financial measures may improve managers' performance ratings by providing a more precise evaluation of their actions, as many non-financial measures are less susceptible to external effects than financial ones (Spremann & Gantenbein 2002).

However, the time and cost involved to track numerous non-financial measures can be substantial, because they can be measured in varying ways which makes comparisons and evaluations difficult (Spremann &

Gantenbein 2002; Ittner & Larcker 1998). Examples of non-financial measures include: customer satisfaction, service quality, customer loyalty, customer complaints, brand awareness, attracting new customers and employee turnover etc. (Pont & Shaw, 2003). In other words, these non –financial measures can be regarded as marketing performance of a firm. Customers have become the most valuable asset to companies as a result of increased competition and changing customer profile (Weed, 2004). This scenario has led to the effort by companies to increase customer satisfaction. It is thought that by been customer centric will increase the firms' profit and financial performance (Ghosh, Dutta& Stremersch, 2006). The customer centric approach has led to the concepts of customer relations management and relationship based marketing. The concept of relationship marketing emphasis the retention of existing customers rather than embracing the traditional marketing philosophy of expanding the customer base (Kotler, Bowen & Makens, 2003). This is because the cost of reaching new customer is higher than the cost of maintaining existing customer in a competitive environment (Tanyeri & Barutçu, 2005). There is more responsibility placed on marketing in relationship between customer value and enterprise value, meaning that for performance measurement purposes non-financial information related to marketing must be converted into financial data (Seggie, Cavusgil & Phelan, 2007; Ryals, 2008).

According to Kosan (2014) marketing as an important activity for an enterprise has caused an increased in marketing related expenditure. Also, a higher level of investment in marketing activities will increase the enterprise performance. Marketing Accounting has emerged as a concept as a result of this phenomenon, and it explains the usage of cost accounting in a market centric fashion. The concept has been accepted as a component of the modern cost accounting system that has developed with the advances in the area of accounting (www.accountingtoday.com/marketing; Ceran and İnal, 2004). There is another concept based on customer centric approach which is called Customer Accounting. This concept includes the identification of economic values, measurement, communication and reporting regarding customers and customers group. The concept provides positive results to the enterprise in terms of performance appraisal. The relationship between Accounting and Marketing has shown in the review, that the synergy between the two areas may have possible contributions to the enterprise (Kogan, 2014)

Theoretical Framework

Resource dependence theory concerns itself with the strategy organizations adopt in drawing resources from the environment. This is because organizations are mutually dependent on their environment (Uwuigbe, 2011). This theory is of the opinion that companies derive their raw materials from their environment or from nature, therefore, it will be necessary for companies to protect the raw materials at all cost so as to make them available at all times. This can be done through giving consideration to the environment which they are being derived from. Any results from the use of resources consequently affect the environment and in turn affect the company (Uwuigbe, 2011).

ElKington (1997) reiterated via his triple bottom line approach theory, that capitalism must satisfy legitimate demands for economic performance.

With this, ElKington (1997) echoes Adam Smith's theory of the firm - that the firm has one and only one goal - to satisfy the desires of shareholders by making profits. However, profit may not be attainable if the environment in which the business operates is neglected. A corporation which accommodates the triple bottom line approach (social, economic and environmental performance) is contributing to sustainable development. Hart (1997) added that the achievement of sustainability would require a blending of product design and pollution prevention.

The Ecocentric theory stresses the importance of companies to produce a balanced report that contains the impact of their activities on the environment (Pepper, 1986; Dobson, 1990; Ngwakwe, 2008). Ecocentrism is focused on protecting the environment, aimed at protecting holistic natural entities such as species, ecosystems and landscapes. A balanced financial report should contain how the business has related with its environment. However, many businesses lack the proper approach to environmental management. The need for environmentally friendly products and environmental protection production process can never be over-emphasized.

Empirical Evidence

The International Federation of Accountants (IFAC) observed that environmental pressure is forcing many organizations to look for new, creative and cost-efficient ways to manage and minimize environmental impacts. Organizations have come to recognize the potential monetary rewards of improved environmental performance. They discovered that enhancing efficiency in the use of environmental resources brings not only environmental improvements but also significant monetary savings as waste treatment decreases.

In the study conducted by Osemene, Kasum and Asaolu (2012) on the impact of SMEs activities on human health and the environment in Oyo state, Nigeria, it was discovered that environmental problems led to inhalation of harmful smokes, emissions, noise pollution, etc. They added that the quest for rapid industrialization (not yet visible) and development pushed environmental management to the background. Meanwhile, El Serafy & Lutz (1996) noted earlier that consumers willingly pay more for products of companies that are environmentally friendly. In other words, people would pay higher prices for products of companies that preserve and clean the environment.

Hamid (2002) conducted a research on the measurement, evaluation and disclosure of environmental performance in financial statements or in its attachments. The author observed that measuring environmental performance depends on accounting systems but also needs more data other than the conventional accounting data.

Monetizing environmental issues may not be totally accurate, but economists and accountants have to give best estimates according to the current level of knowledge and techniques used. Several studies investigated the association between environmental expenditure and firms' performance. Various authors, accounting associations and researchers have addressed the environmental expenditure issues and concluded (based on different objectives) that environmental expenditure accounting and disclosures are important to both internal and external users (International Federation of Accountants, 2005; Enahoro, 2009).A number of studies have been undertaken in different countries to examine corporate environmental performance from different perspectives. Owolabi (2007) investigated the extent of incorporation of environmental costs into oil and gas accounting in Nigeria.

Based on response from stakeholders, his study revealed a high level of awareness of environmental issues and a positive attitude towards environmental cost and liability. He added that long term costs can be reduced as more efficient environmental practices are implemented while cost reductions can be achieved in the usage of resources as more efficient disposal and removal of waste production are established. Adediran and Alade (2013) investigated 14 different companies across different sectors that are listed on the Nigerian Stock Exchange as at 2010. They used multiple regressions analysis to analyse the data obtained from the annual reports and accounts. Their study revealed a significant negative relationship between environmental accounting and return on capital employed and earnings per share while it revealed a significant positive relationship for net profit margin and dividend per share.

Robbins (1991) pointed out the environmental issues and problems within industrial companies' strategies in the European countries and in the USA, where the disclosure of the environmental information was expanded. He sought to know whether such disclosure is as a result of environmental damage and their expected financial impact, or environmental events and its impact on the financial position and future business outcomes. The study revealed that environmental impacts affect the business and assets values. He opined companies' lack of commitment to environmental laws and the disposal of industrial waste properly and others as a reason for environmental pollution.

Methodology

The target population for this study consists of 36 purposive randomly selected quoted manufacturing companies whose activities have impact on the Nigerian environment. The research design used is the descriptive survey method which is in line with Olayiwola (2007) who asserted that descriptive research is concerned with the collection and analysis of data for the purpose of describing, evaluating or comparing current or prevailing practices, events or occurrences. This assertion is in agreement with the position earlier taken by Bello and Ajayi (2000) who asserted that descriptive survey research focuses on collection and analysis of data on prevailing circumstances. Survey research design fits into the current study; it involves the use of a representative sample from the population, because the study population is too large to collect data from each and every element. Furthermore, this study has to do with a prevailing current trend in the society and hence data obtained could be deemed to be a representative of the study population.

Secondary data obtained from the annual reports and accounts of the selected quoted companies from 2003 to 2012 were used for the study. Two operational variables were identified from the literature and examined. These are environmental accounting and performance variables.

The performance variables were classified into financial and non-financial or marketing measures. In order to measure the financial performance of the quoted companies, accounting ratios such as return on capital employed, net profit margin, asset turnover, and earnings per share were used in formulating the specified models with respect to environmental accounting indices as presented below.

Model Specifications

The regression models are as stated below:

Model 1

$ROCE_{it} = \beta_0 + \beta_1 EA_{it} + \varepsilon_{it}$ (i)

Model 2

$NPM_{it} = \alpha_0 + \alpha_1 EA_{it} + \mu_{it}$ (ii)

Model 3

$AT_{it} = \lambda_0 + \lambda_1 EA_{it} + \sigma_{it}$ (iii)

Model 4

$EPS_{it} = \psi_0 + \psi_1 EA_{it} + \delta_{it}$ (iv)

Where:

ROCE = Return on Capital Employed; NPM = Net Profit Margin; AT = Asset Turnover; EPS = Earnings per Share; EA = Environmental Accounting; β, α, λ, ψ = Co-efficient of Regressors; and ε, μ, σ, δ = Error Term.

Questionnaire was designed to obtain information about the marketing performance measures, from the staff of the selected quoted companies. The questionnaire was designed to provide information about the companies' position towards customer satisfaction, service quality, customer loyalty, customer complaints, brand awareness, attracting new customers and employee turnover. The random sampling technique was used to choose the respondents for the study from the quoted companies. A total of 480 questionnaires were distributed, which means 15 questionnaires for each company. Out of this total questionnaire distributed, 427 were filled and returned. This represented 89% response rate. A one sampled t test was conducted for the staff that perceived and those who did not perceived that a significant relationship exists between environmental accounting and non-financial performance of the organisations. The descriptive statistics was also used, to examine the differences in the mean and standard deviation of responses obtained from the selected staff about the marketing or non-financial performance measures. The measures include: customer satisfaction, service quality, customer loyalty, customer complaints, brand awareness, attracting new customers, employee turnover, etcetera.

Results and Discussion

The result obtained from the data indicated that 74% of the respondents selected for the study agreed that non-financial performance measures are important ingredient towards increasing enterprise profit, while 26% disagreed. A one sample t - test as shown in Table 1a, conducted for the respondents had a mean of 1.2576 and standard deviation of 0.43783.

There were significant differences (with $t = 59.354$, $df = 426$) in the means of staff who agreed and those who disagreed that a significant relationship exist between environmental accounting and non-financial performance measures of organization. This significant difference between the staff grouping is at 95% confidence level as shown in Table 1b. Hence, the null hypothesis that there is no significant relationship between environmental accounting and non-financial performance of organization is rejected. There is significant relationship existing between Environmental Accounting and non-financial performance measures.

Table 1a: One Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Staff Grouping	427	1.2576	.43783	.02119

Table 1b: One Sample t–test for relationship between environmental accounting and non-financial performance measures

	Test Value = 0					
	t	df	Sig (2 tailed)	Mean difference	Lower	Upper
Staff Grouping	59.354	426	.000	1.25761	1.2160	1.2993

In determining which of these non-financial performance measures are preferred, the descriptive statistics of the mean and standard deviation of the responses in Table 1(c), indicate that customer satisfaction is the most preferred, followed by service quality, customer loyalty and customer complaint. The other measures such as brand awareness, attracting new customers and employee turnover are given lower preference.

Table 1(c) Descriptive Statistics for the Non-financial (Marketing) Measures

Marketing Performance measures	Mean	Std. Deviation
Customer satisfaction	4.2529	1.29343
Service Quality	4.0960	1.04709
Customer loyalty	3.2974	1.71655
Customer Complaints	2.6276	1.54722
Brand Awareness	2.3958	1.37560
Attracting new customers	1.9508	1.27265
Employee turnover	1.8056	1.10575

The result obtained from the descriptive statistics has, therefore, revealed that a firm can increase its overall corporate performance by given focus on marketing performance measures such as: customer satisfaction, service quality, customer loyalty and pay attention to customer complaints. Business firms that give serious attention to these marketing and financial measures discussed in the study will record increase in their profit and overall performance. Also, there is need for a firm to adopt environmental accounting in measuring its impact on environment for sound decision making by its users.

Hypothesis Testing

It was hypothesized that "environmental accounting does not significantly affect return on capital employed". Table 2 revealed that the calculated p-value of 0.076 is greater than 0.05, therefore the null hypothesis was not rejected. Also, R which is 0.094(9.4%) indicates that environmental accounting and return on capital employed are positively correlated, that is they move in the same direction but the correlation is low. R^2 which is the coefficient of determination is 0.009 and this implies that 0.9% variability in return on capital employed is explained by a unit change in independent variable. Therefore, environmental accounting does not significantly affect the return on capital employed of selected quoted companies.

Table 2: Model Summary for Environmental Accounting and ROCE

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.094[a]	.009	.006	94.68930

Regression Coefficients for Environmental Accounting and ROCE

	Unstandardized Coefficients		Standardized Coefficients		
Model	β	Std. Error	Beta	t	Sig.
1 (Constant)	-3.930	13.391		-.293	.769
EA	25.657	14.431	.094	1.778	.076

The study also examines the relationship between environmental accounting and net profit margin.

Table 3 revealed that the calculated p-value of 0.014 is less than 0.05, therefore the null hypothesis was rejected and as a result the alternative hypothesis was accepted. Also, R which is 0.130(13%) indicates that environmental accounting and return on capital employed are positively correlated, that is, they move in the same direction but the correlation is low. R^2 which is the coefficient of determination is 0.017

which implies that 1.7% variability in net profit margin is explained by a unit change in environmental accounting. Therefore, environmental accounting affects net profit margin of selected quoted companies.

Table 3: Model Summary for Environmental Accounting and Net Profit Margin

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.130[a]	.017	.014	41.98169

Regression Coefficients for Environmental Accounting and Net Profit Margin

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 Constant)	-10.065	5.937		-1.695	.091
EA	15.841	6.398	.130	2.476	.014

Dependent Variable: NPM

The measure on the relationship between environmental accounting and asset turnover is shown in Table 4. The calculated p-value of 0.984 is greater than 0.05, therefore the null hypothesis was accepted. Table 4 shows that the calculated p-value of 0.984 is greater than 0.05, therefore the null hypothesis was not rejected. Also, R which is 0.001(0.1%) indicates that environmental accounting and asset turnover are positively correlated, that is, they move in the same direction but the correlation is low. R^2 which is the coefficient of determination is 0.000001 and this implies 0.0001% variability in asset turnover. Therefore, environmental accounting does not significantly affect asset turnover of selected quoted companies.

Table 4: Model Summary for Environmental Accounting and Asset Turnover

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	001[a]	.000	-.003	16.00499

Regression Coefficients for Environmental Accounting and Asset Turnover

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 Constant)	5.602	2.263		2.475	.014
EA	.049	2.439	.001	.020	.984

Dependent Variable: Asset Turnover

In determining the relationship between Environmental accounting and Earning per Share, Table 5 shows that the calculated p-value of 0.007 is less than 0.05. Therefore, the null hypothesis was rejected. Table 5 shows that the calculated p-value of 0.007 is less than 0.05, therefore, the null hypothesis was rejected. R (0.141) indicates that environmental accounting and asset turnover are positively correlated, but the correlation is low. R^2 is 0.02, implying that 2% variability in asset turnover is explained by a unit change in environmental accounting.

Table 5: Model Summary for Environmental Accounting and Earning Per Share

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.141[a]	.020	.017	586.48013

Regression Coefficients for Environmental Accounting and Earning Per Share

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 Constant)	14.159	82.941		171	.865
EA	240.477	89.380	.141	2.691	.007

Dependent Variable: Earning Per Share

Regression results revealed that accounting for environmental activities will improve net profit margin and earnings per share as they are positively related. The result of this research work is thus supported by Adam Smith's theory of a firm which emphasized the importance of satisfying shareholders. The study also agrees with El Serafy's (1996) assertion that consumers will pay higher if a company is environmentally friendly. Higher product price may ultimately lead to higher returns. Therefore from the result, environmental accounting impact on firm performance is in line with Adam Smith's theory of a firm because the integration of environmental accounting into the accounting structure of a firm will positively affect its net profit and thereby its earnings per share. Environmental accounting does not also significantly affect asset turnover from the result obtained. This is in line with the findings of Starkey (1998) and Environmental Agency (2010) that environmental performance improvement actually reduces costs through improvement of existing process efficiency which is achieved by maintenance of equipment and the introduction of modern efficient processes.

Conclusion and Recommendations

The study reveals that environmental accounting does not significantly affect return on capital employed and asset turnover but significantly affects net profit and earnings per share. Also, the study revealed that a firm can increase its overall corporate performance by focusing on non-financial performance measures such as customer satisfaction, service quality, customer loyalty and paying attention to customer complaints.

The paper concludes that business should not prioritize financial measures alone. It should take non-financial measures into consideration because of its growing importance in most successful organizations. Therefore, the study recommends that quoted manufacturing companies should account for, and report the effects of their economic activities on the environment to stakeholders in order to enjoy an improved and robust net profit and earnings per share. There is need for attention to be given to the marketing performance, which represents an important aspect of the non-financial measures of the organization's performance. Furthermore, the incorporation of environmental report detailing effects of every material activity into the annual financial statements of all manufacturing companies quoted on the Nigeria stock exchange should be encouraged.

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