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Achieving a Sustainable Business: The Role of Environmental Management Accounting in Corporate Governance

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Abstract *This paper establishes the relevance of Environmental management accounting (EMA) as an inevitable system for ensuring effective corporate governance. In contemporary business, corporate leaders globally stress on ensuring the interest of stakeholders through diverse means of which the use of Environment management accounting systems could be adopted for that purpose. Reluctance in handling environmental issues could culminate into huge financial loss to organizations in terms of environmental or other opportunity costs. It could also be the source of loss of goodwill on the part of stakeholders which can spell huge consequences for the entity's business relationships resulting into governance problems. Consequently, the paper suggests that there are several reasons by which environmental management accounting becomes inevitable in the corporate governance process. It further concludes that Environmental management accounting provides information to the CEO that enables companies improve upon their environmental performance which impacts on effective corporate governance. The paper finally suggests specific areas for future research in relation to EMA and corporate governance.*

Key words Environmental management accounting, corporate governance, chief executive officers, strategy, corporate leaders

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1. Introduction

Much increasing concern on environmental issues is to citizens, governmental personnel and corporate leaders globally are the related costs, revenues and benefits (Seal, 2006, Schaltegger *et al.*, 2013). However, conventional accounting practices are argued to simply not provide adequate information for properly supporting decision-making in environmental management responsibilities (Schaltegger *et al.*, 2013; Braendle and Kostyuk, 2007; Aldridge, 2014). Consequently, Environmental management accounting (EMA) came into being. According to IFAC (2005), the US Environmental Protection Agency was the first to pay attention to this issue and became the first national agency to establish a formal program to promote the adoption of EMA as far back over a decade ago. Since then, organizations in many countries have begun promoting and implementing EMA for many different types of environmentally-related management initiatives (Schaltegger *et al.,* 2013; UNDESA/DSD, 2001).

Corporate governance which emerged as an area of research few decades ago is now being applied to a different range of areas such as accounting, economic organization, corporate strategy, information technology and corporate social responsibility (Ilinitch *et al*., 1998; Seal, 2006). All these fields of study where corporate governance applies cut across environmental challenges of which Environmental Management Accounting (EMA) could contribute in addressing such challenges. Hence, an emerging area of study in corporate governance and sustainability is Environmental management accounting.

Becht *et al.* (2002) outline five reasons why corporate governance became so protuberant in the past two decades: i) the world-wide privatization emergence, ii) pension fund reform and recent prominence of private savings, iii) the takeover emergence of the 80s, iv) deregulation and integration of capital markets, and v) crises. These reasons where supported by Braendle and Kostyuk (2007) as they term it as "the prominent roles of corporate governance."

It is therefore not surprising that, several arguments put it that businesses are doomed to failure in satisfying stakeholders expectations in today's swift and enormous environmental transformation, unless they are fast enough to re-strategize in response to recent unpredictable shifting demands and conditions of stakeholders (Herzig *et al.,* 2012; Euske *et al*., 1993 ; Hopkin and Hames, 1994). Even though there is immense pressure from groups such as shareholders, government, media, consumers, investors and other organizations, these pressures can be controlled by adopting environmental management accounting in organizations. Thus, EMA would ensure that costs and process information on such organizations would be handled in a manner appropriate to report to the managers for decision making which positively influence these stakeholders interest (Herzig *et al*., 2012; Gholami *et al*., 2013; Schaltegger and Burritt, 2000). Otley (1994) and Marquardt and Reynolds, (1994) suggest that organizations must go beyond survival, but thrive, in a world of affluent pandemonium and unpredictable surprises. Ability to survive would immensely be for only those organizations which match their capabilities to unpredictable shifting demands of market conditions such as environmental management issues and other stakeholder issues (Otley, 1994).

EMA is based on the opinion that wastes and emissions (non-product output) that a company produces usually culminate into externalities elsewhere in the economy, implying inefficient service delivery and operations (Gale, 2005; Schaltegger *et al*., 2013). These inefficiencies however raise unpardonable doubts on governance issues that exist in such business organisations. Externalities of such nature ultimately become a cost to the company for an inefficient production process, one that is likely to become increasingly costly as regulatory pressures rise (Gale, 2005; Jasch and Schnitzer, 2002).

Most business operations have environmental effects and almost all environmental effects of these business operations also have business costs, such as consuming raw materials, using utilities such as water and energy, and generating waste (Jash 2005;2001). Consequently, timely and relevant Environmental management accounting information is a necessary tool in the hands of corporate leaders to knowing the details and gravity of externalities created and its likely consequences on the firm's performance (Herzig *et al*., 2012; Quinn *et al*., 2011).

Environmental management accounting is therefore required as frequently as possible in everyday corporate governance. However, Seetharaman *et al*. (2007) suggest that several organizations do not attach adequate importance to the establishment and sustenance of an efficient environmental management accounting system in spite of the fact that corporate leaders globally acknowledge its value to successful corporate governance. Quite a number of companies that do not pay much attention to environment management accounting do not believe that investment in environmental enterprise offers them either opportunity for cost saving or improved support from shareholders (Seetharaman *et al*., 2007; Jasch and Schnitzer, 2002). Non-manufacturing firms as well as smaller entities with lesser waste emissions and comparatively fewer stakeholders to satisfy might not experience as much risk as that of bigger manufacturing or processing organizations. For the bigger and complex manufacturing conglomerates, it is a very complex issue because of the myriad interfaces in their manufacturing process as well as parties and potential weaknesses involved in the process of handling waste and emissions (Kokubu and Nashioka 2009; Holt 2009; Schaltegger, 2008; Jasch and Schnitzer, 2002).

Jasch (2005) asserts that in order to maintain support from key stakeholders such as including shareholders and customers, Chief Executive officers (CEOs) want their firm to have a good reputation, and thus are motivated to comply with corporate governance codes which include environmental regulations. Seidl *et al.* (2012) and Schaltegger *et al.* (2013) in support of Jasch assertions also comments that environmental management accounting is a system for keeping track of the internal environmental performance of an organization, hence contributing to corporate governance.

This paper does not stop at the review of the activities of environmental management accounting systems in business organizations, but also it endeavors to expose the relevance of environmental management accounting system as an imperative element in strengthening corporate governance practices in any set up. Also recommendations for future research into specific areas of EMA and corporate governance were given. More specifically, this study focuses on areas where physical and monetary environmental resources of an organization could be applied to achieve effective corporate governance practices.

1.1. Research questions

This paper is generally intended to bring out the role of Environmental management accounting in corporate governance along with the following subordinate objectives:

i. How is Environmental management accounting a good practice standard for effective corporate governance?

ii. What are the key functions of corporate governance where EMA can be applied by corporate leaders?

iii. Why EMA is an imperative for all corporate leaders who want to be on top of their jobs?

2. Literature review

This section of the paper concentrates on the concept of corporate governance, principles of corporate governance, the definitions of environmental management accounting, purpose of environmental management accounting, why dynamic CEOs should be interested in EMA information for effective corporate governance, areas where EMA can apply to corporate governance and conclusions.

2.1. The concept of corporate governance

The term "Corporate Governance" is both narrowly and broadly defined, however these several definitions revolve around two perspectives of shareholders and (or) stakeholders in general orientation. Braendle and Kostyuk (2007) states that "It therefore revolves around the debate on whether management should run the corporation solely in the interests of shareholders (shareholder perspective) or whether it should take account of other constituencies (stakeholder perspective)". Below are some of the definitions of corporate governance:

The definition of corporate governance most widely used is "the system by which companies are directed and controlled" (Cadbury Committee, 1992).The Cadbury Report (1992) provides a straight forward definition of corporate governance, emphasizing the importance of shareholders and boards of directors. However, this definition explicitly ignores the accountability aspect of corporate governance to other stakeholders. Whilst the Cudbury report ignores other stakeholders but shareholders, Shleifer and Vishny (1997), stretches beyond mere shareholder perspective, as other providers of finance such as creditors, and banks are considered in addition to the shareholders are mentioned. They define corporate governance as mechanisms by which providers of finance to corporations assure themselves of getting a return on their investment. Furthermore, the Cudbury, and Shleifer and Vishny, consider only providers of finance and the Board interest. However, Adridge (2014) encompasses all stakeholders into his definition of corporate governance. According to the author, term "corporate governance" describes an enormously broad, multifaceted concept which encompasses the systems, procedures and structure a corporation uses to convey authority, responsibility and accountability among stakeholders (Aldridge, 2014).

Another definition was given by Centre of European Policy Studies (CEPS, 1995). They argue that corporate governance is the whole system of rights, processes and controls established internally and externally over the management of a business entity with the objective of protecting the interests of all stakeholders. From this definition it is undisputable that the objective of protecting the interest of all stakeholders is applied in the European context and not just shareholders.

The OECD (2004) gives comparatively a wider definition which includes almost all the above definitions. Thus, OECD (2004) asserts that corporate governance embroils a set of relationships between a company's management, its board, its shareholders and other stakeholders. In other words, it provides "the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined"(Braendle and Kostyuk, 2007).

Derived from the definitions and elaborations above, good corporate governance balances the interests of, and relationships among, entities, employees, owners and customers to maintain the long-term sustainability and success of a corporate venture. Consequently, it is the framework by which the various stakeholder interests are brought to equilibrium. This cannot be realized without management critically accounting for environmental cost and benefits so as to determine how it affects all stakeholders in diverse ways (Burritt, and Schaltegger, 2012). Environmental management accounting therefore forms an integral part of the entire process.

2.2. Principles of corporate governance

The OECD principle, issued in 1999 was revised in 2004 (OECD, 2004; Jesover and Kirkpatrick, 2005). The principles cover six key areas of corporate governance namely; i) providing the basis for an effective corporate governance framework ii) providing a basis for an effective system of corporate governance, iii) shareholder rights, equitable treatment of shareholders, iv)the role of stakeholders in corporate governance, v) disclosure and transparency as well as vi) responsibilities of the board. These areas in accordance with the OECD and Jesover and Kirkpatrick briefly described below.

2.2.1. Providing the basis for an effective corporate governance framework

First and foremost, the corporate governance framework should promote transparent and efficient markets, comply with the law and clearly outline the branches of responsibilities among different supervisory, regulatory and enforcement authorities.

2.2.2. The rights of shareholders and key ownership functions

The corporate governance framework should safeguard and expedite the exercise of shareholders' rights. In other words all shareholders should be able to exercise their rights without any constraints.

2.2.3. The equitable treatment of shareholders

A good corporate governance system ought to legitimize fair treatment of all shareholders, including minority and foreign shareholders. There ought to be for all shareholders the opportunity to obtain effective redress for abuse of their rights.

2.2.4. The role of stakeholders in corporate governance

The corporate governance framework ought to take into cognizance the legitimate rights of stakeholders or through mutual consensus and facilitate active co-operation between corporations and stakeholders in generating value, jobs, and the sustainability of financially sound enterprises.

2.2.5. Disclosure and transparency

Another issue that should be incorporated in corporate governance framework is to ensure that timely and accurate disclosure is made on all substantial matters regarding the corporation; which covers the financial situation, performance, ownership, and governance of the company.

2.2.6. The responsibilities of the board

Last but not the least, the corporate governance framework must ensure the strategic guidance of the company, the effective monitoring of management by the board, and the board's accountability to the company as well as the shareholders.

2.3. Environmental management accounting (EMA) Defined

Environmental management accounting (EMA) is an integral part of overall environmental accounting practices of organizations. Interestingly there is no single definition of environmental management accounting, for the purpose of this paper, below are some selected definitions of environmental management accounting:

International Federation of Accountants (IFAC, 2005, 1998) defines Environmental management accounting as "the management of environmental and economic performance through the development and implementation of appropriate environment-related accounting systems and practices." IFAC further adds the components of environmental management accounting as life-cycle costing, full cost accounting, benefits assessment, and strategic planning for environmental management.

UNDSD (2003) also defines Environmental management accounting with emphasis on EMA being a mechanism for reducing cost emission and waste which eventually affect organizational performance. According to them EMA serves as a mechanism to identify and measure the full range of environmental costs of existing production set up and the economic gains and saving of pollution prevention or cleaner processes, and to assimilate these costs and benefits into day-to-day business decision-making.

Another definition given is by United Nations Expert Working Group on EMA (2001) as EMA being the identification, collection, analysis and use of physical and monetary environmental information for internal decision making. This definition as compared to others actually identifies the types of information provided by EMA for decision making.

In support of United Nations Expert Working Group on EMA, Graff *et al.* 1998 also defines Environmental management accounting as "the way that businesses account for the material use and environmental costs of their business". The authors however differentiate between two key issues in environmental accounting, thus material accounting and environmental cost accounting. According to them "materials accounting is a means of tracking material flows through a facility in order to characterize inputs and outputs for purposes of evaluating both resource efficiency and environmental improvement opportunities". However, environmental cost accounting is how environmental cost are identified and allocated to the material flows or other physical aspects of a firm's operations."

Last but not the least, Bennett and James (1998) give a snapshot of all the definitions above. They argue that environmental management accounting is "the generation, analysis and use of financial and non-financial information in order to optimize corporate environmental and economic performance and to achieve sustainable business."

In summary, the above definitions implies that EMA system generates information in diverse ways that directly or indirectly influence managerial decision making and governance which in the long run affects stakeholder interest in different directions.

2.4. Why dynamic CEOs should be interested in EMA systems for effective corporate governance

The reasons why an increasing number of CEOs and managers should be interested in EMA information can be attributed to several factors. The first motivation is from the promotion of EMA by international, national and local government bodies as well as some educational institutions (Rikhardsson *et al.,* 2005; Enahoro, 2012). Academic research into EMA practices is highly recommended and being promoted through internationally reputable networks such as EMAN in Europe, Asia Pacific and the Americas (Rikhardsson *et al*., 2005). EMA promotion goes beyond the class room; it is being promoted by prominent international groups as well. This is because of potential social and environmental benefits from widespread use of environmental management accounting tools that addresses the need for organisations to include all environmental costs in operating decisions, investment project analysis as well as to invest in clean technology (Herzig *et al*., 2012; Schaltegger *et al*., 2013). Consequently the United Nations Environmental Programme has held several conventions and provisions in promotion of EMA systems amongst others which would regulate environmental impacts of business activities. Enahoro (2012) list conferences such as The International Convention for the prevention of pollution from ships, in 1973 and 1978 but enforced in 1983, The Montreal Protocol on substances that deplete the ozone layer in 1987 and enforced in 1989, IMO resolution A 672 (16); International Maritime Organization (1989), The Basel Convention (1989), The Bamako Convention (1991) at the African regional level, International Tropical Timber Agreement in 1994, The UN Framework Convention on Climatic Change in 1992 (Adopted in December, 1997), Ottawa Convention on landmines in 1997 and ASEAN Agreement on Trans-boundary haze pollution in 2002. Both academic and non-academic promoters of EMA endeavor for organizations to agree on the give and take rationality behind the adoption of EMA practices (UN DSD, 2003, Schaltegger and Burritt, 2000; Rikhardsson *et al.,* 2005). Hence, environmental performance and financial performance of the organization are promoted on the basis that organizations can take actions that improve both types of performance (Osborn *et al*., 2002).

In addition to the reason above, environmental legal obligations also impose requirements on companies. Several nations have legal provisions which when enforced can increase environmental cost (Gray and Bebbington, 2001; Gray *et al*., 1993). Hence, these cost need to be seriously controlled and reduced by management. For instance, Superfund Liabilities for site Cleanups (remediation) in the USA and take-back (extended producer responsibility) provisions in the European Union (Ansari, 1997; Gray and Bebbington, 2001; Gray *et al.*, 1993; Rikhardsson *et al*., 2005).

In addition to EMA promotion by both academic and non-academic institutions, there is also an increase in voluntary acceptance also known as self-regulation by managers on the relevance of managing business environmental consequences on stakeholders. Interestingly, Deegan, (2002) asserts that CEOs and managers are gradually realizing the growing importance of the monetary consequences of corporate environmental impacts to the performance of their corporations. Similarly, Schaltegger *et al.* (2013) and Rikhardsson *et al.* (2005) argue that if managers wish to lower their costs or environmental impacts such as to reduce penalties for non-compliance or the outrage of different stakeholders, then EMA information voluntary acceptance is necessary. This is because it maintains corporate legitimacy in the eyes of customers, society and other stakeholders since it leads to commitment, assessment, monitoring and elimination of the causes of adverse environmental impacts and costs, as well as control (Deegan, 2002; Rikhardsson *et al*., 2005).

Another reason according to Schaltegger *et al*. (2013) and Rikhardsson *et al.* (2005) is that several EMA tools are increasingly available to management for decision making. Tools such as cost accounting or life cycle costing, environmental cost management, material flow cost accounting, life cycle costing, environmental capital appraisal, and environmental corporate performance evaluation has been demystified , thereby enhancing efficiency for successful implementation to be attained (Herzig *et al*., 2012; Schaltegger *et al.,* 2013). This makes it relatively easier to adopt EMA in recent years as part of corporate governance measures.

2.5. Environmental management accounting application in corporate governance

Environmental management accounting systems provide information that encourages corporate governance practices in different ways. Some of the areas of its applications are legal compliance, decision making as well as strategy formulation and implementation. These are discussed in detail below.

2.5.1. Environmental management accounting and Legal Compliance

The success of good corporate governance depends on compliance to relevant laws, regulations and codes of business practice. EMA enables environmental protection through cost-efficient compliance with environmental regulation and self-imposed environmental policies (IFCA, 2005; German Environment Ministry, 2003). The Sarbanes- Oxley Act (2002) mandates a statement of compliance be endorsed by the CEO and the chief financial officer (or equivalent thereof), and it's accompanied by suctions, for anyone who deliberately signs such a statement whilst being aware that they don't conform to all the requirements of the act. Mayanja and Poll (2011) and Seidl *et al.,* (2012) explain that companies should either comply with code provisions or must explain why they do not comply. Thus, "Comply or Explain" requires companies to make available to their stakeholders the information they need to judge the adequacy of the company's governance arrangements. This concept was put forward by both Sarbines-Oxley Act and the Cadbury Committee in the UK as a practical means of instituting a code of corporate governance (ibid). Non-compliance to corporate governance provisions can easily lead to fraud (Kaplan and Norton, 2006). Hence, the Environmental management accountant, through his expertise may uncover fraud that relates to the flow of materials, energy and water and present reports which reflect realistic value. This can lead to improvement upon investors' confidence being a sign of effective corporate governance (ibid). It is therefore incumbent upon the board to ensure that the company managers are operating ethically within the company's code of conduct even to compliance to processes and performance level (Kaplan and Norton, 2006; Mayanja and Poll, 2011). This could be achieved through much environmental management accounting control mechanism such as planning and implementing pollution control, investments investigating and purchasing cost determining effective substitutes for toxic materials (IFAC, 2005). These Environmental management accounting activities can be adopted by corporate leaders, to assist in the monitoring and evaluation of the compliance process.

2.5.2. Environmental management accounting information and decision making

The system for gathering information is critical to the success of any CEO. Fuller (1999) states that "the main purpose of environmental accounting "is to provide relevant in-house information that will support the making of environmentally compatible decisions by management" (p.287). The decision of the

CEO, as the number one man of the board of directors greatly affects the success of the company. Since the board is expected to provide the necessary support and counsel to ensure success, it is recommended that, chief executives perceive their boards as a perpetual source of counsel and support, rather than being a monitor and a compensator for their work (Charan, 2005; Cadbury, 2002). Environmental management accountant in conjunction with the board give professional counsel and support to the CEO to attain pertinent and detailed reports to the specific areas which can require counsel (Mayanja and Poll, 2011).

Furthermore, at the business level, EMA ensures better internal management and decision-making. For instance, EMA can be applied in investment appraisal, cleaner production, improving eco-efficiency and calculating savings within organizations as well as forming a basis for external accounting and reporting (Burritt and Schaltegger, 2012; Jasch 2005, 2001). Thus, business level managers can adopt EMA to enable the organization effectively track and manage its physical and associated monetary resources, and to identify opportunities for cost savings. The advantages of adopting EMA at this level include efficiency improvements; better decision-making based on consistent and reliable information systems (Schaltegger, *et al*., 2013; Bennett *et al*., 2003; Eurowise, 2003).

Furthermore, it is recommended that the board should have free and unlimited access to all company information, records, documents and property at any time they wish (Sarbines-Oxley, 2002 and Cadbury, 2002). The essence of having access to relevant information is to assist the directors in providing good counsel and support to the CEO (Mayanja and Poll, 2011). Independent management assessments ought to present the board with a constructive analysis of the pertinent issues in both internal and external business environment without forgetting some insights on the activities of management (Sussland, 2005). This responsibility cannot be completed without an efficient environmental management accounting system. At the departmental level, Fuller (1999) also suggests the following six areas in which environmental management accounting information can support. These areas include "marketing and managerial decisions: product mix decisions, choosing manufacturing inputs, assessing pollution prevention projects, evaluating waste management options, comparing environmental costs across facilities and pricing products".

2.5.3. Environmental Management Accounting and Organizational Strategy

EMA enables the assessment and implementation of cost effective and environmentally friendly programs for ensuring an organization's long-term strategic position. Montabon *et al.* (2007) find a positive correlation between different environmental management practices and other strategic dimensions such as product innovation and process innovation and sales growth. Thus environmental Management accounting involves a set of tools and techniques to support strategic planning, decision making and control in businesses (Schaltegger *et al.,* 2013; Burritt and Schaltegger, 2012; Collier, 2012; Mayanja and Poll, 2011). Hence, environmental management accounting may be of value to the board of directors in formulating and controlling the strategy of the organization. Strategy is often defined as: "a contingent plan of action designed to achieve a particular goal" (Caves, 1984). Similarly, Porter (1996) states: "strategy is the creation of a unique and valuable position, involving a different set of activities". The essence of formulating a competitive strategy is relating a company to its environment (Porter, 1998; Charan, 2005; Ghemawat, 1991 and Caves, 1984). This implies that a major aim of effective strategy could be to fulfill stakeholder expectations. On the external reporting side, EMA, in collaboration with frameworks also called Environmental Financial Accounting (EFA), avails information to external stakeholders such as shareholders, rating agencies, environmental regulatory agencies and statistical agencies on organizational performance and risks (Schaltegger *et al.,* 2013; Burritt *et al*., 2002; Mayanja and Poll, 2011). Environmental management accounting tools and techniques consequently equips the company in a manner that makes it easier to identify the several dynamics of its environment that can affect it and may also be able to assess the impact of such effects in monetary and physical terms.

3. Conclusions

As an essential conduit for accomplishing the outlined roles of corporate governance, environmental management accounting function stands out as an indispensable tool in the hands of corporate leaders. CEOs with the support of the Board should constantly attempt to ensure that there exists a balance in the satisfaction of stakeholders' interest. Corporate leaders need not be reminded that their corporate governance responsibility includes prevention of environmental externalities due to internal mismanagement. The inclusion of internal environmental consideration in its governance will assist a company in working to achieve effective corporate governance in diverse ways. As an accounting information generation tool, environmental management accounting will rightly precede decision making and serve as an imperative for quality corporate governance. Also, it gives a great impetus to the fair view of the internal environmental state of affairs of the organization on which external financial environmental reports can be based for stakeholders' decision making.

4. Suggestions for future research

Even though research on EMA and corporate governance exists, they are countable. Consequently, based on the highlighted importance of environmental management accounting in corporate governance, we suggest that further research should cover these given objectives:

i. To establish the relationship between EMA and shareholder protection.
ii. The role of EMA in ensuring legal compliance.
iii. To explore EMA practices in firms in emerging markets.
iv. To identify the effects of EMA on firm performance.
v. To examine the effect of corporate governance on EMA.
vi. To identify the relationship between strategy formulation and EMA.

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