ENVIRONMENTAL MANAGEMENT ACCOUNTING AND FINANCIAL PERFORMANCE

CASE STUDY: HIMA CEMENT LIMITED

BY

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A RESEARCH REPORT SUBMITTED TO THE COLLEGE OF APPLIED ECONOMICS AND MANAGEMENT SCIENCES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE BACHELOR'S DEGREE OF BUSINESS ADMINISTRATION OF KAMPALA INTERNATIONAL UNIVERSITY

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DECLARATION

I, Mugabo Godwin, declare that this dissertation is my own work and that it has never been presented for a degree award to any university. The materials which are not my work, has been clearly identified and acknowledged.

Date 05/06/2014

Signed.....

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APPROVAL

I certify that the candidate was under my supervision. His work is original and worthy for the award of Bachelor of Business Administration Degree of Kampala International University.

Signature.....

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Date 5TH JUNE 2014

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ABSTRACT

The study was about environmental management accounting and the perceived financial performance of the cement industry in Uganda.

A comparative study of Hima cement limited (Uganda). The main objectives of the study were;

i) To examine the relationship between environmental information and the perceived financial performance in the cement industry in Uganda.

ii) To examine the impact of compliance of environmental laws on perceived financial performance of in cement industry in Uganda.

iii) To examine the impact of compliance of environmental laws on perceived financial performance of in cement industry in Uganda.

The research design took into account that involved observation and questionnaires that enabled to get both qualitative and quantitative data. The data was used for purposes of drawing valid conclusion

Data collections methods were both primary and secondary sources. 123 were sampled from Hima cement limited (Uganda) and they expressed their views on the importance of environmental management accounting in the company.

The findings from the primary data indicated the managers were aware of the importance of application of environmental management accounting and the need for compliance with the environmental laws, tracking of environmental cost saving, environmental evaluation and production of environmental information which are critical in improving the financial performance of the company.

There are efforts to comply with environmental laws, reducing the costs by avoiding wastage and provide a healthy conducive environment to the workers and the society at large.

The research recommended that all the stakeholders should be provided with information about the activities of the company, environmental evaluation be carried out periodically, need to keep pace of the regulatory framework put in place by government and other regulatory bodies, and that it is necessary for businesses, investors and society to conveniently understand and track corporate holistic performance.

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CHAPTER ONE

1.0 INTRODUCTION

This chapter entails the background of the study, the problem statement, the purpose of the study, the objectives of the study, the significance and scope of the study and finally in this chapter is the conceptual framework relating the independent variables and the dependent variables.

1.1 Background to the Study

The global profile of environmental issues has risen significantly during the past two decades, precipated in part by the major incidents such as the Bhopal Chemical Leak (1984) and Exxon Valdez Oil Spill (1989). These events received worldwide media attention and increased concerns over major issues such as global warming, depletion of non-renewal resources, and loss of natural habitants (Shane, 2005). Experience shows that decision-makers at the company level often fail to recognize the economic values of natural resources as assets as well as the business and financial value of good environmental performance (Staniskis & Stasiskiene, 2002).

Environmental risks cannot be ignored; they are now as much a part of running a successful business as product designs, marketing and sound financial management (FTC ACCA3.6, 2006). Poor environmental behavior may have an adverse impact on the business and its finances.

Environmental Management Accounting (EMA) systems have the dual purpose of managing and improving the financial and environmental performance of an entity. Application of EMA, which integrates two of the main principles of sustainable development – environmental and economics, can help to significantly improve corporate decision-making (UNDSD, 2003).According to Burritt, *et al*, (2002). EMA can generate information about the use of resources with environmentally related impacts and affects the financial position and performance of organizations.

Government programmes and policies can play an important role in encouraging and motivating businesses to adopt EMA systems as an integral part of a firm's management accounting practices, such that all project costs (including social and environmental costs) become clearly articulated, fully inventoried and properly allocated over the life of an investment (UNDESA,

2001). The fact that environmental costs are not fully recorded often leads to distorted calculations for improvement options. Studies on environmental accounting over the past years ave shed light on the lack of information reaching top management (Rappaport and Maclean, 1998) and therefore environmental costs often goes unrealized by corporate decision makers.

In Uganda, research in the area of environment-related management accounting is still at its infancy stage. However, the ever-increasing advocacy for sustainability and eco-efficiency indirectly demands attitudinal change with regards to environmental management among organizations. In view of the fact that little is known about the application and role of EMA in shaping corporate performance, more attention to the practice of EMA application and its influence on organizations' performances would certainly be valuable to the organizations.

Hence, this study assesses the EMA application on the perceived financial performance business organizations in Uganda using the cement industry as an example.

Financial performance means a firm's overall financial health over a given period of time. Financial performance analysis is the process of determining the operating and financial characteristics of a firm from accounting and financial statements.

The goal of such analysis is to determine the efficiency and performance of a firm's management, as reflected in the financial records and reports. The analyst attempts to measure the firm's liquidity, profitability and other indicators that the business is conducted in a rational and normal way, ensuring enough returns to the shareholders to maintain at least its market value.

Finance being disregarded in financial decision making since it involves investment and financing in short tern period. Further, also act as a retrain in financial performance, since it does not contribute to return on equity (Rafuse, 1996). A well designed and implemented financial management is expected to contribute positively to the creation of a firm's value (Padachi, 2006). Dilemma in financial management is to achieve desired tradeoff between liquidity, solvency, and profitability (Lizaridis *et al,* 2007). Management of working capital in terms of liquidity and profitability management is essential for sound financial recital as it has a direct impact on profitability of the company (Rajesh and Romana Reddy, 2011).

1.2 Statement of the Problem

EMA application improves the financial performance of businesses by serving as a tool for recognizing and understanding the full spectrum of environmental costs of current production processes, and to integrate information on these costs and benefits into day-to-day business decisions (UNDSD, 2003). Companies, which use EMA as part of integrated management system, are provided with accurate and comprehensive information for the measurement and reporting of environmental performance (Jasch, 2001). In Uganda, although the production volumes of cement are on the increase, the production costs of cement remain the highest in the world (Tresarrieu, 2005). The costs are subsequently built in the cement pricings and passed on to the final consumers and, this limits the volumes purchased. Lack of EMA application implies internal costs not fully internalized and external effects internalized leading to higher prices for final consumers. Given the above scenario, the EMA application in Uganda may be doubtful and therefore need to investigate its impact on the perceived financial performance in Uganda's cement industry.

1.3 Purpose of the Study

This research sought to study determinants of EMA application and its relationship with the financial performance in the cement industry by looking at the case of Hima Cement Limited (Uganda)

1.4 Objectives of the Study

i) To determine the relationship between environmental accounting information and the perceived financial performance in the cement industry in Uganda.

ii) To determine the impact of compliance of environmental reporting laws on perceived financial performance of in cement industry in Uganda.

iii) To determine the effect of tracking of environmental cost saving on perceived financial performance in the cement industry in Uganda.

1.5 Research Questions

i) What is the relationship between environmental information and the perceived financial performance in the cement industry in Uganda?

ii) How does compliance of environmental laws impact on the perceived financial performance of the cement industry in Uganda?

iii) What is the effect of tracking of environmental cost saving on perceived financial performance in the cement industry in Uganda?

1.6 Significance of the Study

This study was useful in the following ways:

a) The findings of the research provided reference for further research in the EMA application.

b) The findings have been useful to Processing/Manufacturing entities (like Hima cement limited) in addressing environmental issues that executives can readily understand.

c) The findings and recommendations of this research have assisted top management and other stakeholders in general to strengthen the financial management component of environmental aspects that affects the businesses performance.

1.7 Scope of Study

The scope of the study shows the extent, coverage, content and the time that will be covered during the research. Everything in the research will be confined to the scope of the study.

1.7.1 Geographical Scope

The study was carried out in the district of Kasese where the cement factory is located.

Hima Cement limited (U) Ltd is located in Kasese district in Western Uganda and about 400kilometers from Kampala city on the Mbarara-Fort portal road highway.

1.7.2 Content Scope

The study focused on the EMA application and how it can be applied to enhance financial performance in the cement industry(s). EMA application focused on how detailed these cement

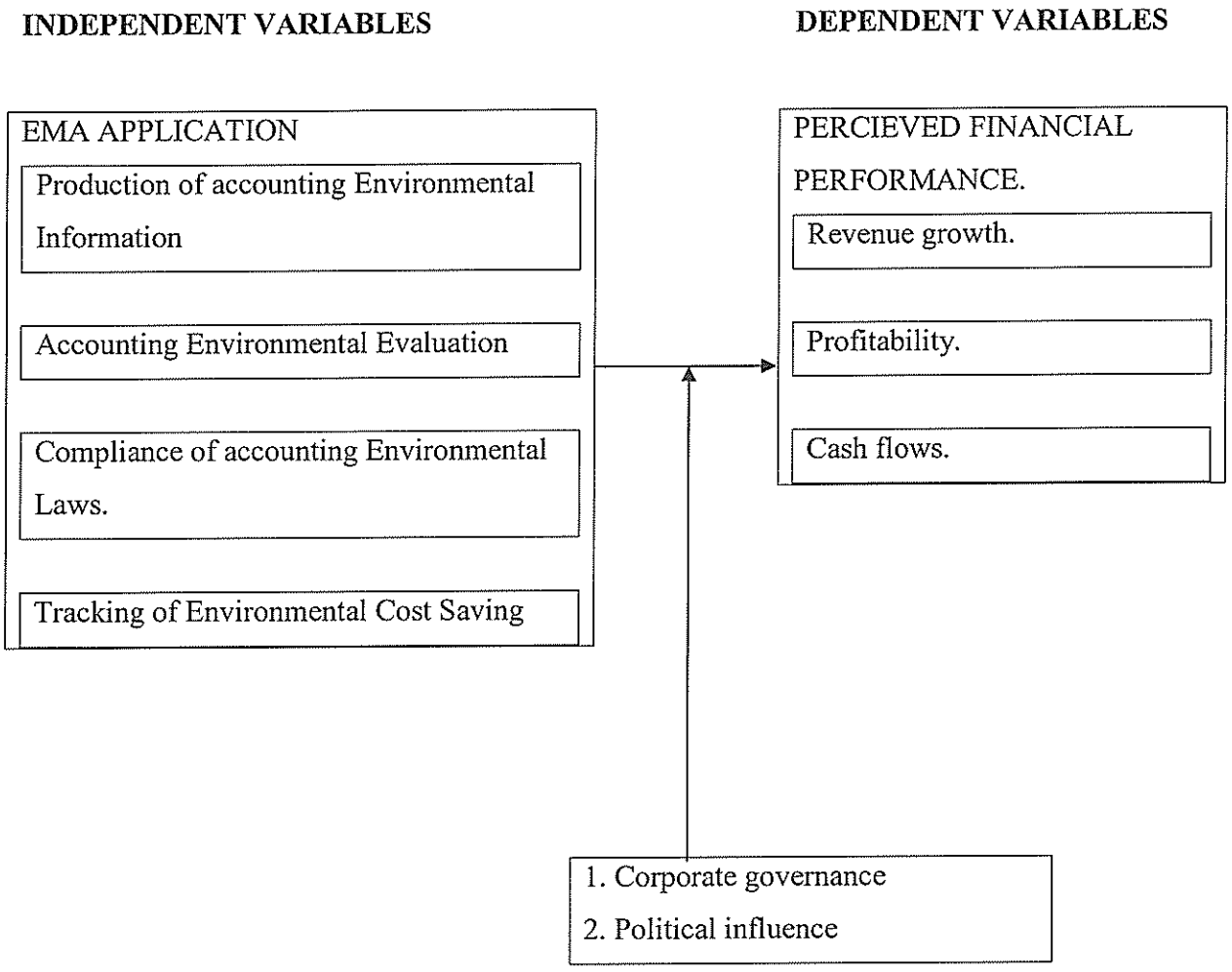
industry collects and disseminates environmental information, how they comply with environmental laws, and established processes of how tracking environmental costs savings are applied. Financial performance focused on revenue growth, profitability and cash flows of the company.

1.7.3 Time scope

The study covered a period of 16 weeks from January to May 2014. This time enabled the researcher to reach the respondents and get the information

1.8 Conceptual framework

Figure I: The EMA Application and Perceived Financial Performance



Source; self conceptualization

Conceptual Framework as developed from Reyes', 2002: New Requirements placed on Enterprises

Until today, research on environment-related management accounting (EMA) is still very scarce. However, the increased focus on environmental issues has indirectly forced organizations to consider environmental element in the conduct of their management accounting by adopting and adapting EMA which theyss believe best suit their situation. According to Reyes (2002), to operationalise the EMA application, the following variables have to be chosen; collection of environmental information, environmental evaluation, compliance of environmental laws, and tracking of environmental cost savings.

Resource efficiency is not just an environmental initiate; it is also an important business process that could save money. Waste costs money which studies typically show up to 4% of business turnover and by finding ways to reduce waste, the company could become profitable. According to Harold and Keller, (1998) contends that although many aspects of quality are compatible with environmental responsibility, a company's performance usually is measured in terms of profits. Therefore, companies will be motivated to undertake environmental projects and manufacture environmentally friendly products if the projects and products impacts on profits favorably. Progressive companies will go "beyond compliance" or are being responsible for the environmental aspects of their business (and their employees), will seek ways to eradicate their pollution credit card balance (Stacy, 2003) and, by doing so, save enormous amounts of money. From the foregoing, it can be inferred that when the EMA application requirements are carefully analyzed and implemented, it will lead to improved financial performance of the cement industry's in Uganda.

CHAPTER TWO

2.0 REVIEW OF RELATED LITERATURE

2.1 INTRODUCTION

This section reviews the literature related to the study variables. The study focuses on the application of environmental management accounting and its relationship with the financial performance of the cement industry in Uganda.

2.2 Environmental Management Accounting (EMA).

EMA can be defined as the generation and analysis of both financial and non-financial information in order to support internal environmental management processes (Shane, 2005). It is complementary to the conversional financial management accounting approach, with the aim of developing appropriate mechanisms that assist in the identification and allocation of environment-related costs (Bennett and James, 1998). The major areas for EMA application include; in the assessment of annual environmental costs / expenditures, product pricing, budgeting, investment appraisal, calculating costs, and savings of environmental projects, or setting quantified performance targets. Besides being a tool for reporting environmental costs to external stakeholders, the EMA has an internal company-level function and focus (Jasch, 2003; Lange *et al.*, 2003).

EMA is as wide-ranging in its scope, techniques and focus as normal management accounting. Burritt *et al* (2001) stated: 'there is still no precision in the terminology associated with EMA'. They viewed EMA as being an application of conventional accounting that is concerned with the environmentally-induced impacts of companies, measured in monetary units, and company11 related impacts on environmental systems, expressed in physical units. EMA can be viewed as a part of the environmental accounting framework and is defined as 'using monetary and physical information for internal management use' (ACCA, 2007). EMA encompasses environmental reporting which is the disclosure of information in the published annual report or elsewhere, of the effect that the operations of the business have on the natural environment.

The EMA application is thus becoming increasingly important not only for environmental management decisions, but for all types of routine management activities. The need for EMA was conceived in recognition of some of the limitations of conventional management accounting

approaches for management activities and decisions involving significant environmental costs and/or significant environmental consequences/impacts. This has led to a general questioning of business practices and numerous calls for change (Gray &Bebbington, 2001).

These questions have not only been raised by organizations such as Friends of the Earth, Greenpeace, or groups of 'eco-warriors', but from the United Nations, the European Union, insurance companies and pension funds (UNDSD, 2003). Recognition that our current way of life poses a threat to us and our planet, has led to global agreements on action to prevent future environmental damage. Such agreements as noted earlier include the Montreal Protocol, the Rio Declaration, and the Kyoto Protocol.

Besides the cleaner production assessment, EMA is very useful for example in evaluating the significance of environmental aspects and impacts and prioritizing potential action plans during the implementation and operation of an environmental management system (UNDSD, 2000; Lange *et al.*, 2003). This therefore requires a closer cooperation between the environmental manager and the management accountant resulting in increased awareness of each other's needs and concerns. From an accounting perspective, the initial pressures were felt in external reporting, including environmental disclosures in financial reports and/or the production of separate environmental accounts. Much has been written about the nature and quality of these accounts (Gray and Bebbington, 2001). These calls for environmental issues to be managed before they can be reported on and therefore will require management accounting system changes.

2.3 Conventional Management Accounting on Environmental Issues

It must be recognized that most management accounting techniques significantly underestimate the cost of poor environmental behavior. Many overestimate the cost and underestimate the benefits of improving environmental practices (Pezzoli, 1997). In an ideal world, organizations would reflect environmental factors in their accounting processes via the identification of the environmental costs attached to products, processes, and services (Bebbington, *et al*, 2001).

Nevertheless, many existing conventional accounting systems are unable to deal adequately with environmental costs and as a result simply attribute them to general overhead accounts.

Consequently, according to UNDSD (2003), managers are unaware of these costs, have no information with which to manage them and have no incentive to reduce them.

Management accounting techniques can distort and misrepresent environmental issues, leading to managers making decisions that are bad for businesses and bad for the environment. The most obvious example relates to energy usage. A recent UK government publicity campaign reports that companies are spending, on average, 30% too much on energy through inefficient practices (Shane, 2005). With good energy management, we could reduce the environmental impact of energy production by 30% and slash 30% of organizations' energy expenditure.

Frost and Wilmhurst (2000) suggest that by failing to reform management accounting practices to incorporate environmental concerns, organizations are unaware of the impact on profit and loss accounts and the balance sheet impact of environment-related activities. Moreover, they miss out on identifying cost reduction and other improvement opportunities; employ incorrect product/service pricing, mix and development decisions. This leads to a failure to enhance customer value, while increasing the risk profile of investments and other decisions with long term consequences (Prakash, 2002). If management accounting as a discipline is to contribute to improving the environmental performance of organizations, then it has to change. Environmental Management Accounting (EMA) is an attempt to integrate best management accounting thinking and practice with best environmental management thinking and practice.

2.4 Producing Accounting Environmental Information and Financial Performance

Identifying environmental costs and related financial opportunities is a tangible way of gaining the attention of upper management by linking environmental responsibilities with costs (Ann & Richard, 1998). In 1998, the USEPA argued that the definition of environmental costs depended on how a company intends to use the information, for example in capital budgeting or product design. Environmental aspects and their costs range from cooling water that is paid for twice (to supply and to treat), the cost of tracking, monitoring, inspecting, reporting, treating and disposing of hazardous materials and the associated liability costs which consume increasing human and financial resources. One should recognize that environmental costs are not a separate type of costs; rather they are part of money flowing throughout a corporation (Hu & Chong, 2003).

The most significant problem of EMA lies in the absence of a clear definition of environmental costs. This means it is likely that organizations are not monitoring and reporting such costs (Shane, 2005). The increase in environmental costs is likely to continue, which will result in the increased information needs of managers and provide the stimulus for the agreement of a clear

definition. Another difficulty associated with environmental costs is their identification and allocation. It can be said that most companies do not know about extend of their environmental costs and tend to underestimate them. This leads to distorted calculations of improvement options (Ditz *et al*, 1998).

EMA applicability can solve these problems through accounting techniques which are useful for the identification and allocation of environmental costs as: input/output analysis, flow cost accounting, activity-based costing (ABC), and lifecycle costing (Jasch 2003, UNDSD 2003).

According to a research by Bennett and James (1998), EMA is concerned with gathering data related to the environment (lowest levels), which are converted through techniques and processes (middle level) into information which is useful for managers (top). Key data is both nonfinancial and financial in nature. Management accounting techniques such as performance measurement, operational budgeting, costing or pricing are used for the transformation.

Not all aspects of producing environmental information are positive for the company (Paul & Eli, 2000). A company's environmental behavior may be of interest to other companies in the supply chain, competitors, or external stakeholders including regulators, communities, and public interest groups. According to ACCA (2007), there are two main vehicles that companies use to publish information about the ways in which they interact with the natural environment: the published annual report (which includes the financial statements, and a separate environmental report (either as a paper document or simply posted on the company website). The IASB encourages the presentation of environmental reports if management believes that they will assist users in making economic decisions, but they are not mandatory. An entity may therefore publish an environmental report to: differentiate it from its competitors, acknowledge responsibility for the environment, demonstrate compliance with regulations, or obtain social approval for its activities.

The concept at the root of the supply-chain design and improvement as a means of promoting sustainable development are not new. Life-cycle analysis, as a tool to understanding a product's complete impact on the environment, has been known for some time (White et al., 1995) and this understanding is also widespread in the business community. Information technology (IT) could play an important role in furthering the environmental and revenue benefits of such supply-chain initiatives (McNulty *et al*, 1998).

Some examples of potential IT uses include gathering information on inputs and outputs of different processes, surveying customers and using prototypes to understand environmental impacts during product design, tracking product movements, optimizing transportation policies, and analyzing recycling and reuse behavior (Paul & Eli, 2000). They contend that with data from the above sources, companies may improve the environmental aspects of their products at three levels: product and supply-chain design to minimize environmental impacts; ongoing waste minimization and risk mitigation after the product has been deployed; and diagnostic feedback from supply-chain participants to opportunities for new products and processes and to spawn future environmental initiatives.

2.5 Compliance of Accounting Environmental Laws and Financial Performance

It has been postulated that organization's compliance with legislative requirements is only the first step on the path to sustainable development (EMAS, 2003). Compliance of environmental laws (and or environmental regulatory compliance) requires companies to track the use of hazardous substances and emissions of pollutants. Although actual compliance varies widely, especially among small firms with less to lose in the event of environmental incidents, major companies in the chemical and process industries (as like Hima Cement industry) have devoted significant resources over the past decades to improving environmental performance (Jaffe *et al*, 1995).

Uganda's policy on the environment provides for rational and sustainable use of natural resources in order to conserve the resources for the present and the future generations (Wabunoha *et al*, 1999). The benefits of a cleaner, healthier environment according to Greg (2005), are obvious and inarguable. Society, business, and life itself flourish and prosper when pollutants are controlled and the potentially harmful impact on the world is minimized.

Environmental regulations are important tools for achieving these benefits.

For many organizations it has been said that for simple compliance with legislative requirements is only the first step on the path to sustainable development (EMAS, 2003). At one time, firms applied environmental compliance procedures largely to reduce their exposure to fines or penalties. Today firms use these procedures in response to the consumer-driven green demand; they want to be perceived as having a green corporate image.

This green corporate image can be used as a competitive advantage, even to the extent of facilitating global trade (Clare, 2004). However, Wabunoha *et al*, (1999) established that some developers claimed not be aware about the environmental impact assessment as they do not want to comply with environmental requirements because they added an extra cost to their investment. Reactive management strategies such as remediation cleanups and paying penalties for breach of legislation are financial burden to the firms that undermine profitability and impact on cash flows negatively. According to Patrick (2006), Hima Cement Industry faces closure for continued defiance to regulations by NEMA despite several warnings to stop disposal of large amounts of dust in the air during the night. This therefore could lead to loss of revenue by the cement industry should the regulators swing into action.

2.6 Accounting Environmental Evaluation and Financial Performance

Achieving the corporate goal of eco-efficiency requires firms to evaluate the internal and external benefits and costs of their activities. Understanding the environmental costs and benefits of processes and products can promote more accurate costing and pricing of products and can aid companies in the design of more environmentally preferable processes, products, and services for the future (USEPA, 1995). The evaluation exercise requires technical skills and equipment to formulate implement and monitor strategies, policies.

The UNDSD (2001) recommends that an accurate analysis of the investment's sensitivity to the environmental costs should be carried out. The analysis need to use appropriate time-lines and indicators that do not discriminate against long-term savings and benefits. It also needs to recognize the impact of input price changes and future changes in the regulatory regime (fees, fines and penalties). EMA applicability enables integration of environmental considerations into financial appraisals and decision-making for new environmental friendly investments that will show increased profitability in the long run.

According to Badagawa (2005), governments and the private enterprises in the developing world (and certainly in Uganda) have the challenge to strengthen their industrial performance and capabilities to be able to maximize their contribution made by the industrial sector to productivity and economic growth. The factory machinery in some industries in Uganda is obsolete and dilapidated, leading to inefficient production and heavy pollution (UNEP, 1999).

Serious effort has been made to revitalize the industry. New low-cost producers are entering global markets and tightening competition. Developing economies must face up to this challenge or get off the global shelves.

The realization of the above is premised on the ability by the various actors to formulate, evaluate, implement and monitor strategies, policies and programmes that can ensure attainment of international market standards. Literature on competitiveness such as Humpry & Schitz (2002), Adeboye (1995), and that established by On The Frontier (OTF) suggest that the most viable option is to "upgrade" – i.e make better industrial products (that are environmental friendly), make them more efficiently and move into more skilled activities. This will attract and retain customers thereby sustaining and improving on the revenue base.

A profitability analysis should be done using appropriate time-lines and indicators that do not discriminate against long-term savings and benefits. An accurate analysis of the investment's sensitivity to the environmental costs should be carried out, which takes into consideration the impact of input price changes and future changes in the regulatory regime (fees, fines and penalties) (UNDSD, 2003).

Thus, EMA applicability is important for integration of environmental considerations into financial appraisals and decision-making for new investments: environmentally friendly investments will show increased revenues, profitability and improved cash flows in the long term if all these factors are included in the EMA model.

2.7 Tracking of Environmental Cost Savings and Financial Performance

The focus on environmental impact has been on the rise and companies are struggling to keep up (Gupta & Sharma, 1996). As this trend continues, industries are challenged to manage productivity that increases revenues and profits without causing damage to the environment (D'Souza, 2001). One strategy is to integrate environmental related costs and benefits into the financial management accounting system to ensure efficiency of the resources including the environment. These costs need to be identified, which is possible by applying the EMA system (Jasch, 2003).

The EMA systems (EMS) identifies and controls environmental costs, which helps environmental managers justify cleaner production projects and identify ways of saving money and improving environmental performance. Often, companies and managers believe that

environmental costs are not significant to the operation of their businesses. For instance, the purchase price of raw materials and the unused portion that is emitted in a waste is not usually considered an environmental cost. These costs tend to be much higher than the initial estimates and should be controlled and minimized (Schaltegger *et al.*, 2003).

The solution is in the pursuit of environmental quality management via the development of an Environmental Management System (EMS) and this can only be achieved if "environmental audit" is a concomitant feature of such a system (Shane, 2004). In this respect the organization becomes self-regulating by tracking environmental costs with a view to making cost savings and thereby sustaining the cash flows. UNDSD (2003) identified management accounting techniques which are useful for the identification and allocation of environmental costs as: input/output analysis, flow cost accounting, activity-based costing (ABC), and lifecycle costing.

2.7.1 Input/ Output Analysis

The input/output analysis is a technique that can provide useful environmental information, sometimes referred to as mass balance (Envirowise, 2003). This technique records material flows with the idea that 'what comes in must go out - or be stored' (Jasch, 2003). Materials are measured in physical units and include energy and water. At the end of the process, the material flows can be expressed in monetary units. Process flow charts can help to trace inputs and outputs, in particular waste. They demonstrate the details of the processes so that the relevant information can be allocated to main activities.

Process flow charts bring together technical information and cost accounting information. Flow cost accounting is a tool of a new management accounting approach - flow management. It aims to organize production end-to-end in terms of flows of materials and information –all structured in an efficient, objective-oriented manner' (UNDSD, 2003). It is more than a simple assessment of environmental costs, because it is focused on assessment of total costs of production.

Flow management involves not only material flows, but also the organizational structure.

Classic material flows are recorded as well as material losses incurred at various stages of production. Flow cost accounting makes material flows transparent by using various data, which are quantities (physical data), costs (monetary data) and values (quantities x costs).

The material flows are divided into three categories, material, system, and delivery and disposal:

a) The material values and costs apply to the materials which are involved in the various processes.
b) The system values and costs are the in-house handling costs, which are '...incurred inside the company for the purpose of maintaining and supporting material throughput, e.g. personnel costs or depreciation'.
c) The delivery and disposal values and costs refer to the costs of flows leaving the company, for example transport costs or cost of disposing waste.

EMA can benefit from flow cost accounting because it aims to reduce the quantities of materials, which leads to increased ecological efficiency (UNDSD, 2003). With better information and accounting systems, firms are beginning to disaggregate revenues and costs to customer or account level. This analysis often reveals previously hidden subsidies across customers, products, and materials (DeWayne, 2004). This implies that small fraction of profitable customers subsidize the firm's other unprofitable or, at least, breakeven customers. Firms should therefore strive to identify those subsidized customers and work with them in either altering the servicing of those customers (including pricing) to a more equitable arrangement.

2.7.2 Environmental Activity-Based Accounting

Activity-based costing (ABC) '...represents a method of managerial cost accounting that allocates all internal costs to the cost centers and cost drivers on the basis of the activities that caused the costs,' (UNDSD, 2003). ABC applied to environmental costs distinguishes between environment-related costs and environment-driven costs. The former are attributed to joint environmental cost centers, for example incinerators or sewage plants. The latter are hidden in the general overheads and do not relate directly to a joint environmental cost centre, e.g. increased depreciation or higher cost of staff. Nevertheless they vary with the amount of throughput. Schaltegger and Muller (1998) stated 'the choice of an adequate allocation key is crucial for obtaining correct information'. The four main allocation keys are:

1. volume of emissions or waste
2. toxicity of emission and waste treated

3. environmental impact added (volume x input per unit of volume) volume of the emissions treated, and
4. The relative costs of treating different kinds of emissions.

Using an activity based costing engine, activity analysis provides clear insight into customer, product, and channel profitability, and is a core component of enterprise performance (Don, 2004). The ability of activity analysis to accurately determine costs also aids in the costing and cross-charging of shared services like IT, HR, and finance.

2.7.3 Lifecycle Costing.

The pursuit of environmental quality management via the development of an Environmental Management System (EMS) can only be achieved if 'environmental audit' is a concomitant feature of such a system. In this respect the organization becomes self-regulating and the undertaking of environmental audits on a regular basis provides the platform for organizations to adopt a self-critical and analytical posture as part of their routine organizational management processes (ACCA, 2005). Organizations should be striving to achieve an integrated environmental strategy underpinned by the same type of culture that is required for the successful operation of a programme of total quality management (TQM).

It is arguable that the two are inextricably linked insofar as good environmental management is increasingly recognized as an essential component of TQM (Gray & Bebbington, 2001). In common with TQM, the focus is upon 'continuous improvement' and the pursuit of excellence.

Such organizations pursue objectives that may include zero complaints, zero spills, zero pollution, zero waste and zero accidents. Information systems need to be able to support such environmental objectives via the provision of feedback - on the success or otherwise - of the organizational efforts in achieving such objectives. This approach to environmental quality management requires the development of environmental performance measures and indicators that will enable a comprehensive review of environmental performance to be undertaken (Gray &Bebbington, 2001). Many - if not all - total quality management accounting techniques can be modified and effectively adopted to help manage environmental issues.

Input/output analysis, environmental activity-based accounting and environmental lifecycle costing are therefore essential accounting techniques of tracking environmental cost savings.

2.8 Environmental Management Accounting and Financial Performance.

The above-mentioned accounting techniques are useful for EMA to identify and allocate environmental cost. In addition, there are alternative techniques to estimate environmental costs such as the 'environmental cost decision tree' as described by Rinner (2000). An understanding of how a company's environmental performance affects its financial prospects, and how the stringency of the environmental policy regime might constrain a company's financial opportunities are issues of concern to policy makers (Darnall, *et al*, 2006).

Collectively, organizations spend millions of dollars annually when installing mandated pollution control technology, applying for environmental permits, and monitoring and reporting their environmental impacts (Portney & Stavins, 2000). These costs create an incentive for companies to reduce their environmental impacts below minimum reporting thresholds. Doing so also benefits organizations by improving their operational efficiencies. At the same time, regulators can achieve greater environmental improvements without additional monitoring and enforcement (Darnall, 2006). However, questions remain about the extent to which the stringency of the environmental regulatory regime diminishes a company's financial performance.

Other uncertainties relate to whether or not more efficient companies may not be the ones that actively reduce their impacts on the natural environment. As such, a company's superior financial outcomes may be mistakenly attributed to its improved environmental performance when financial performance is related more to the fact that a company is more efficient from the outset (Stanwick, 2000; Russo & Fouts, 1997; Hart & Ahuja, 1996). Moreover, previous research has not explored how the stringency of the environmental policy regime affects a company's EMA applicability and financial performance. Perhaps most importantly, the link between EMA applicability and financial performance has not been studied across multiple countries (Darnall, *et al*, 2006).

It is often argued that good environmental and commercial performance go hand-in-hand (Nicole, *et al*, 2006). EMA as a new subject offers an interesting way of looking at ecological sustainability. It opens up the corporate gateway towards the continuous internalization of external effects (Bennett, *et al*, 2006). Until now, the main incentive to develop EMA has not been generated in business community itself, even though there are some interesting examples of companies implementing innovative forms of EMA. This means there is room for additional

government programmes to promote the adoption of EMA application. However, it is of great importance to actively involve the business community in developing those determinants (Martin & Wolters, 2003).

As much as a number of scholars have contributed to the wealth of knowledge on EMA application and financial performance, there is no conclusive evidence that the EMA application when applied on the cement industry in Uganda can enhance their financial performance, and therefore, this study addresses this gap.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with the practical procedures, which were used for carrying out the study. It specifies details of the research design adopted, the population of the study and sample, validity and reliability of the instruments used, research variables and their measurements, data processing and analysis, and limitations of the study. This, therefore, provides the entire framework within which the data was collected and analyzed.

3.2 Research Design

The study took into account two approaches that involved observation and questionnaires. This enabled the researcher to get both quantitative and qualitative data.

The study used a cross sectional design to conduct a study targeting Hima cement limited in Uganda and focused on the business units within the cement industry such as the manufacturing business unit; the procurement unit; the sales and administrative units.

3.3 Study Population

The study population of 178 included the staff and employees of Hima Cement Limited. These comprised of the top level, middle level and lower level managers.

3.4 Sample Size and Sampling Design

Sample size of 123 respondents was used, which is in line with Bailey (1994) who recommended a minimum sample size of 100 respondents being sufficient for most researches. It is also in line with Roscoe Rule of Thumb that states that a sample size between 30 and 500 is sufficient.

3.5 Sampling techniques

3.5.1: Purposive sampling

The respondents were purposively selected from the officials within Hima Cement Limited. They comprised of the staff from different departments such as human resource, finance, administration, marketing, production, and transport.

3.6 Sources of Data

3.6.1 Primary Data

Primary data was obtained from management and other workers of the cement industry. A questionnaire with closed ended questions was applied for collecting primary data.

3.6.2 Secondary Data

Secondary data was got from printed materials generated by management and other sources.
Data previous studies, management journals, and company bulletins was used. Secondary sources of data supplemented primary data in arriving at findings.

3.6.3 Data Collection Instrument

a): Questionnaires

A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from the respondents.
A questionnaire with close ended questions was designed and used for the collection of data from the employees of the cement company.

b): Observation

This was very important and it involved visiting the various departments in the week days to understand how the environmental management accounting was conducted.

3.7 Measurement of Variables

1) EMA application was measured by the degree to which environmental information is produced and disseminated in the cement company, degree of carrying out environmental evaluation, degree of compliance of environmental laws and the detail of tracking environmental costs.
2) In examining perceived financial performance, questions were asked to probe direction in growth of profitability, revenues and cash flow generation of the cement industry.
3) In examining environmental information, questions were asked to probe aspects of producing environmental information which is positive for the company.
4) Compliance of environmental laws were probed by establishing whether there has been cases of penalties for breach of legislation and the environmental safety measures in place.
5) Environmental evaluation was probed by establishing the accuracy of the analysis by which the company(s) investment sensitivity to the environmental costs has been carried out.
6) Tracking of environmental cost savings were probed by establishing whether management pursues environmental quality management via the development of environmental management systems (EMS) and any other measures to track environmental costs for cost savings.

3.8 Validity and Reliability of Instruments

The interview schedule and questionnaire was designed and piloted on the company staff based in Kasese, adjustments made following the results before a final questionnaire was prepared.

3.8.1 Validity test

Content validity index was used to measure the relevancy of the questions. All the CVI's for the two experts were above 0.5, implying that the questions were relevant to the study variables.

3.8.2 Reliability test

Cronbach's alpha coefficient was used to determine the consistency of the scales used to measure the study variables as shown in table 3.1 below:

Table 3.1: Alpha Coefficient

Variable	Alpha coefficient
Environmental information	0.9133
Environmental evaluation	0.7829
Compliance of environmental laws	0.7106
Tracking of environmental cost savings	0.8402
Perceived financial performance	0.6911

Source: Primary data

Since all the coefficients were above 0.6, then the scales used were reliable.

3.9 Data Analysis.

Data was collected, coded, edited and input in a Statistical Package for Social Science (SPSS). Frequency distribution tables, descriptive statistics and chi-squire test were used to examine the levels of EMA application and perceived financial performance levels in the cement company. Inferential statistics using Spearman's Correlation Coefficient to measure the degree of relationship between EMA application and perceived financial performance was determined. Multiple regressions were used to predict perceived financial performance in the cement company in Uganda.

3.10 Anticipated Problems

1) The major problem anticipated in the study was failure by the cement company to co-operate and allow access to carry out early collection of data.

2) The cement company management could not allow release of their financial reports for analysis of this study and therefore perceived financial performance responses in the research instrument were used.

3) There were delays to receive the filled questionnaires back on time. Consistent and persistent visits to the respondents; serious attention and personal efforts reduced the above problems.

CHAPTER FOUR

4.0 DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

This chapter deals with the presentation and analysis of the study. It presents findings on relationship EMA application and perceived financial performance using a Statistical Package for Social Science (SPSS) for the analysis. Data presentation in this chapter is mainly by use of frequency tables for primary data analysis. However, for further secondary analysis the researcher used Spearman's Correlation and Pearson's Chi-squire analyses. Of the total target number of 150 respondents, 123 respondents i.e (82%) of the target population returned the questionnaires completed satisfactorily.

The findings are presented in a format that reflects the objectives of the study stated earlier as follows:

i) To examine the levels of environmental management accounting application in the cement industry in Uganda.

ii) To examine the perceived financial performance levels in the cement industry in Uganda.

iii) To determine the relationship between environmental management accounting application and perceived financial performance in the cement industry in Uganda.

Based on the returned questionnaires, the results are documented below.

4.2 Characteristics of the Sample.

This section explains the general characteristics of the sample collected reflecting: age and gender of the respondents, educational qualification of the respondents, and experience of the respondents with the company and the operational area of the respondents with the company and shown in tables 4.1 – 4.5 below.

4.2.1 Age of Respondents

The frequency distribution table was used to describe the age distribution of respondents as shown in table 4.1.

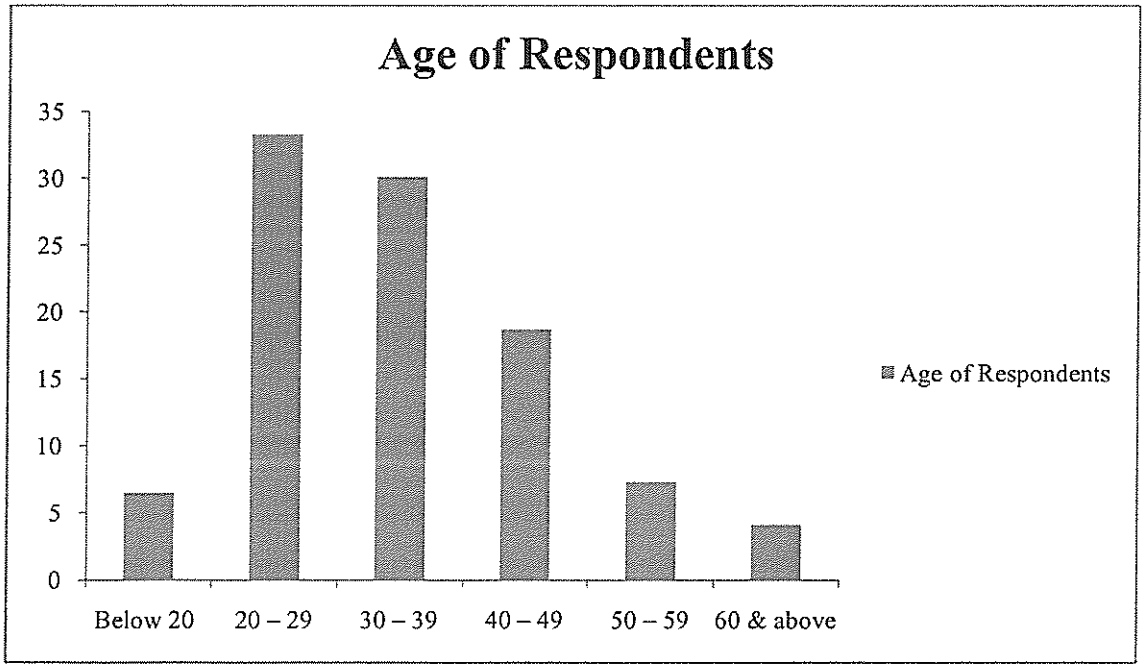
Table 4.1: Age of Respondents

AGE (years)	FREQUENCY	PERCENTAGE (%)
Below 20	8	6.5
20 – 29	41	33.3
30 – 39	37	30.1
40 – 49	23	18.7
50 – 59	9	7.3
60 & above	5	4.1
Total	123	100.0

Source: primary data

Table 4.1 shows that most of the respondents were in the productive age group of 20-49 years constituting 82% of the respondents, 11% were 50 years and above and only 7% were below 20years.

Figure 4.1: Showing the age of the respondents.



Source: Primary data

4.2.2 Gender of Respondents

The frequency distribution table was used to describe the gender status of respondents as shown in table 4.2.

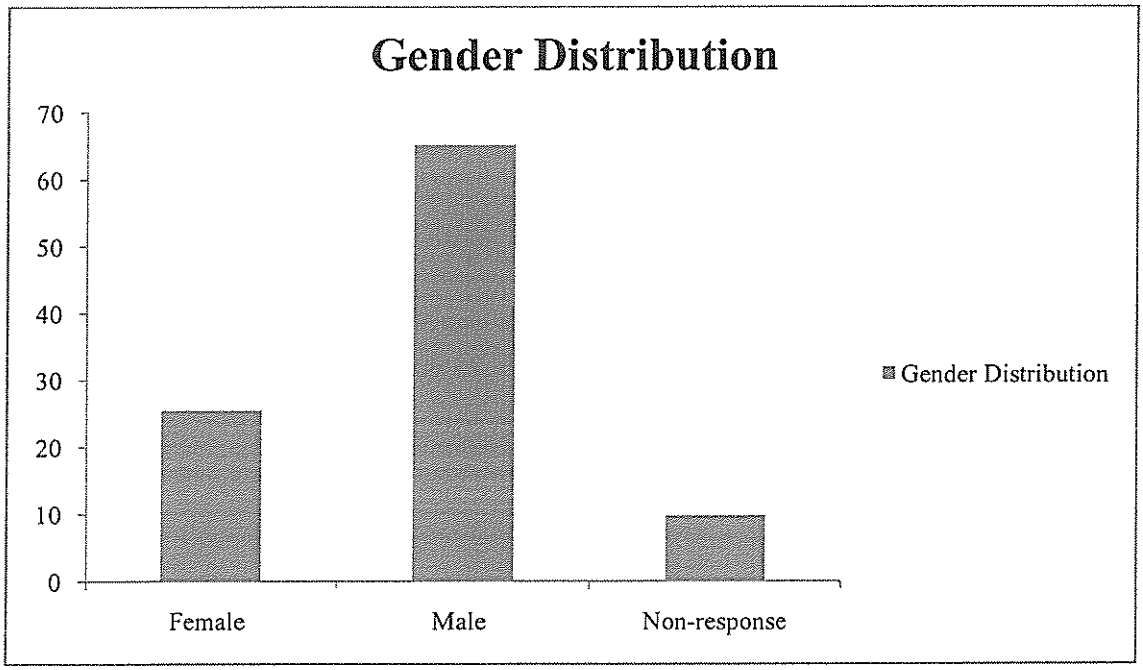
Table 4.2: Gender Distribution

GENDER	FREQUENCY	PERCENTAGE (%)
Female	31	25.5
Male	80	65.2
Non-response	12	9.8
Total	123	100.0

Source: primary data

Table 4.2 shows that most of the respondents were males constituting 65% which indicates the dominance of male gender in the manufacturing industry, 25% females and about 10% did not give response.

Figure 4.2: Showing gender distribution



Source: Primary data

4.2.3 Level of Qualification

The frequency distribution table was used to describe the educational characteristics of the respondents as shown in table 4.3.

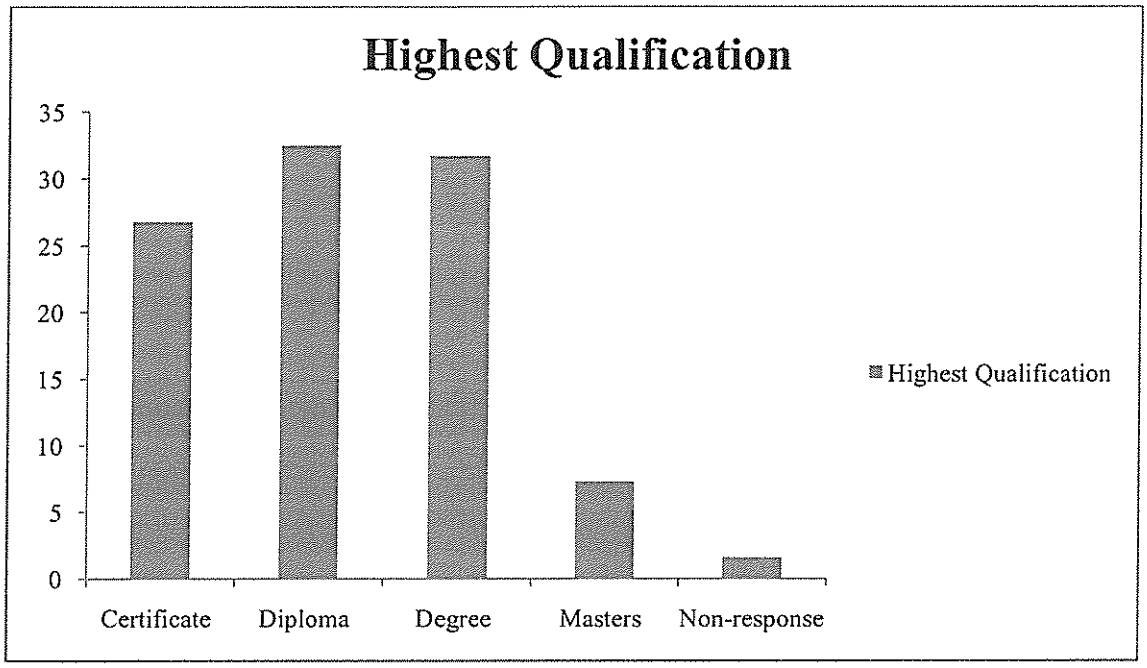
Table 4.3: Highest Qualification

QUALIFICATION	FREQUENCY	PERCENTAGE (%)
Certificate	33	26.8
Diploma	40	32.5
Degree	39	31.7
Masters	9	7.3
Non-response	2	1.6
Total	123	100.0

Source: Primary data

Table 4.3 shows that most of the respondents had attained at least diplomas and 1st degrees constituting about 64%, 27% were certificate holders and about 6% Masters. About 3% did not indicate their highest qualifications. This implies that most of the respondents understood the instrument and were able to answer the questions.

Figure 4.3: Showing highest qualification



Source: Primary data

4.2.4 Experience with the Company

The frequency distribution table was used to describe the working experience of respondents with the company as in table 4.4.

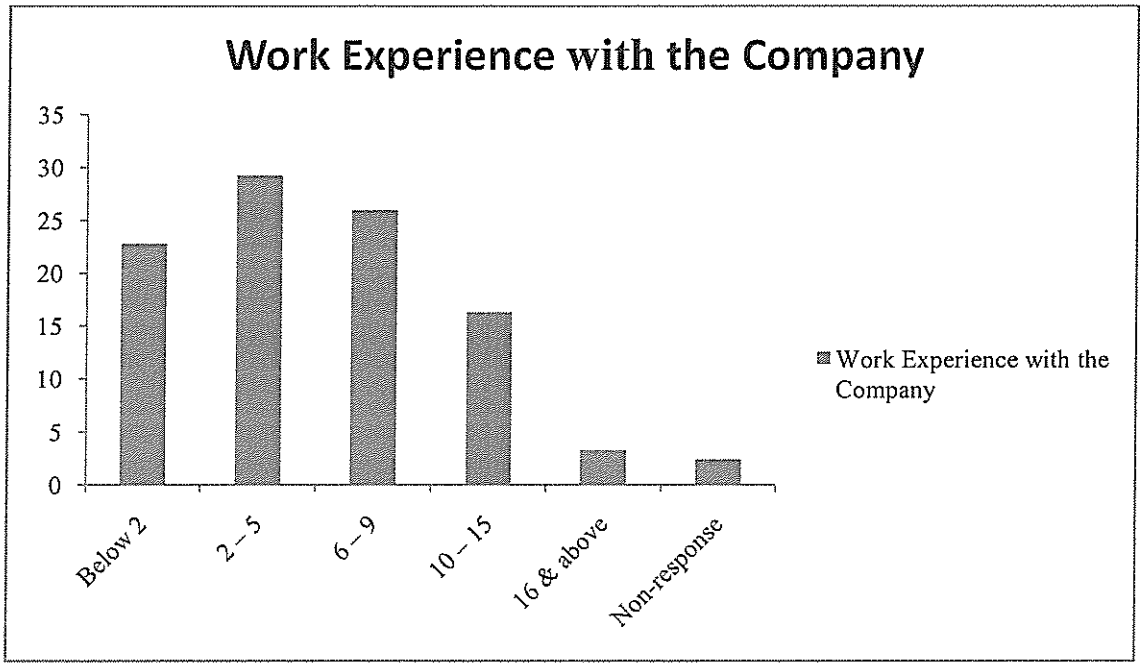
Table 4.4: Work Experience with the Company

EXPERIENCE (Years)	FREQUENCY	PERCENTAGE (%)
Below 2	28	22.8
2 – 5	36	29.3
6 – 9	32	26.0
10 – 15	20	16.3
16 & above	4	3.3
Non-response	3	2.4
Total	123	100.0

Source: Primary data

Table 4.4 indicates that most of the respondents had experience of over 2 years constituting 77%. This implies that most of the respondents understood very well the EMA application and perceived financial performance of the company.

Figure 4.4: Showing the respondent's work experience with the company



Source: Primary data

4.2.5 Operational Area

The frequency distribution table was used to describe the operational area of respondents in the company as indicated in table 4.5.

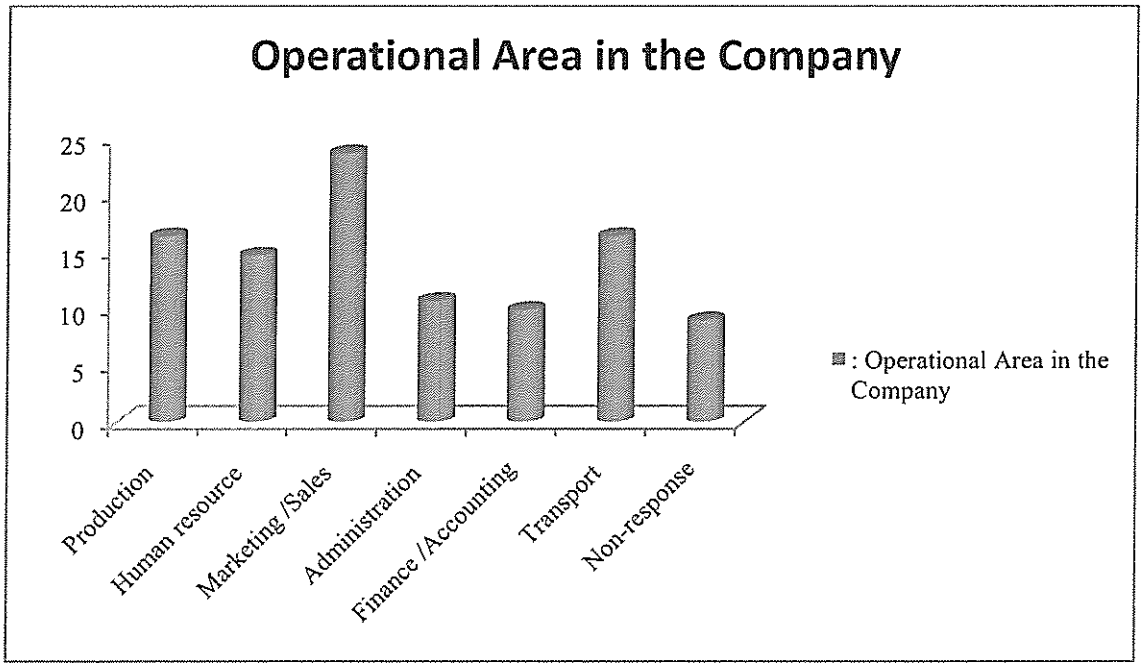
Table 4.5: Operational Area in the Company

AREA	FREQUENCY	PERCENTAGE (%)
Production	20	16.3
Human resource	18	14.6
Marketing /Sales	29	23.6
Administration	13	10.6
Finance /Accounting	12	9.8
Transport	20	16.3
Non-response	11	8.9
Total	123	100.0

Source: Primary data

Table 4.5 indicates that most of the respondents were in the marketing and sales areas constituting 24%, production 16%, transport 16%, human resource 15%, administration 11%, finance and accounting 10% and 8% did not indicate their operational area. This indicates a fair representation of all areas of the company.

Figure 4.5: Showing the operational areas of the respondents



Source: Primary data

4.3 Constructs of EMA Application

This section attempts to establish the levels of environmental management application in the cement industry in Uganda (which is in line with objective 1 of the study). EMA Application composed of environmental information, environmental evaluation, compliance of environmental laws, and tracking of environmental cost savings. The findings are as shown in tables 4.6 to 4.9.

4.3.1 Environmental Information

The frequency distribution table was used to analyze the satisfaction of environmental information in the cement industry as shown in table 4.6.

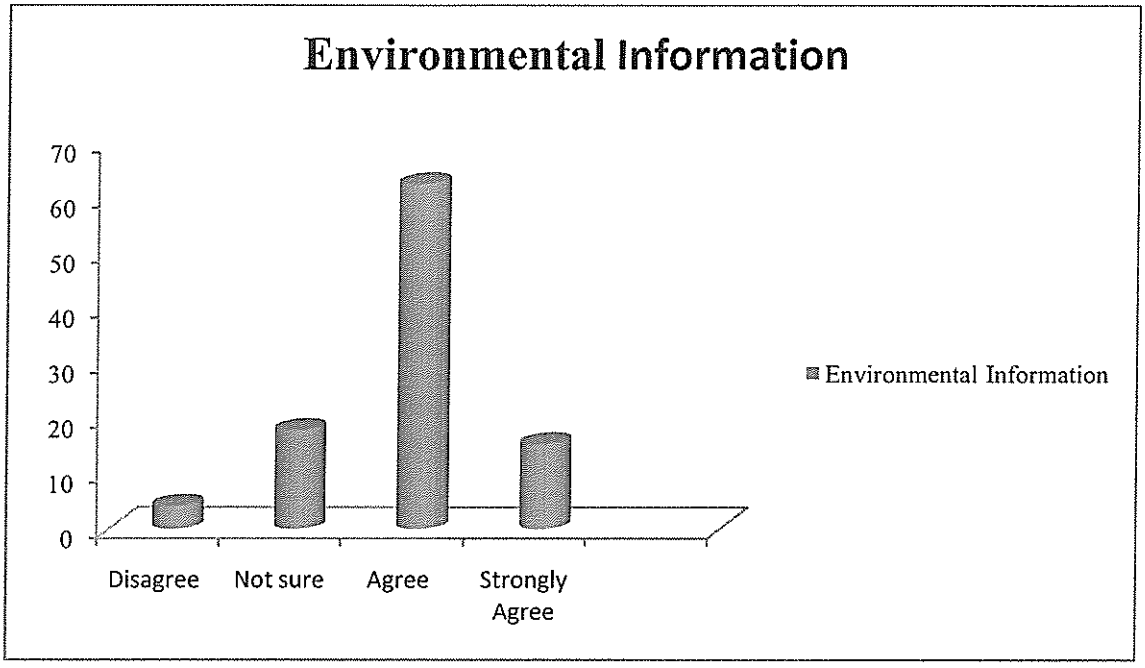
Table 4.6: Environmental Information

OPINION	FREQUENCY	PERCENTAGE (%)
Disagree	5	4.1
Not sure	22	17.9
Agree	77	62.6
Strongly Agree	19	15.4
Total	123	100.0

Source: Primary data

Table 4.6 shows that there were significant positive perceptions on environmental information in the cement industry (Chi-squire = 99.7, DF = 3, P-value = 0.000). This implies that the environmental information is adequate/good. Most of the respondents 78% indicated that there was adequate, timely, accurate, reliable and concise environmental information. 18% were not sure and only 4% were not satisfied with the environmental information.

Figure 4.6: Showing environmental information



Source: Primary data

4.3.2 Environmental Evaluation

The frequency distribution table was used to analyze the degree of the environmental evaluation of the cement industry as shown in table 4.7.

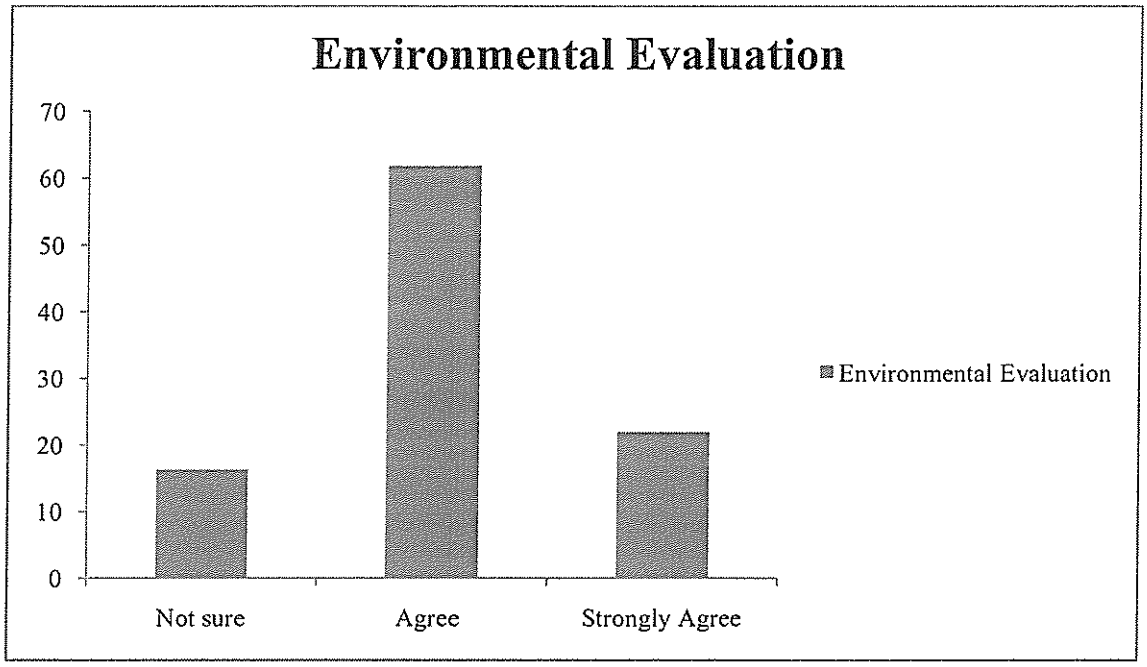
Table 4.7: Environmental Evaluation

OPINION	FREQUENCY	PERCENTAGE (%)
Not sure	20	16.3
Agree	76	61.8
Strongly Agree	27	22.0
Total	123	100.0

Source: Primary data

Table 4.7 shows that there were significant positive perceptions on the environmental evaluation (Chi-square = 46.8, DF = 2, P-value = 0.000). Most of the respondents 84% had a positive perception that the environmental evaluation of the company is good and only 16% were not sure of the environmental evaluation.

Figure 4.7: Showing environmental evaluation



Source: Primary data

4.3.3 Compliance of Environmental Laws

The frequency distribution table was used to assess the level compliance of environmental laws in the cement industry as indicated in table 4.8.

Table 4.8: Compliance of Environmental Laws

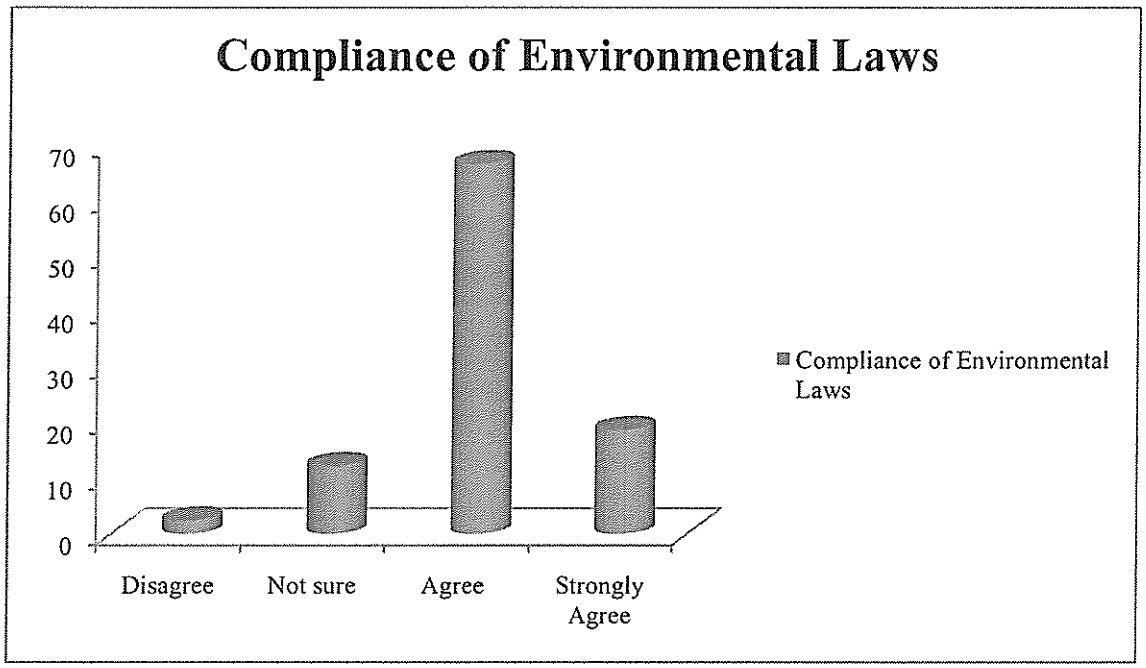
OPINION	FREQUENCY	PERCENTAGE (%)
Disagree	3	2.4
Not sure	15	12.2
Agree	82	66.7
Strongly Agree	23	18.7
Total	123	100.0

Source: Primary data

Table 4.8 shows that there were significant positive perceptions in regard to compliance of environmental laws in the cement industry (Chi-squire = 120.5, DF = 3, P-value = 0.000). Most

of the respondents 85% had a positive view on the compliance of environmental laws, 12% were not sure and only 2% had a negative perception.

Figure 4.8: Showing the compliance with environmental laws



Source: Primary data

4.3.4 Tracking Environmental Cost Savings

The frequency distribution table was used to analyze the level of tracking environmental cost savings in the cement industry as indicated in table 4.9.

Table 4.9: Tracking Environmental Cost Savings

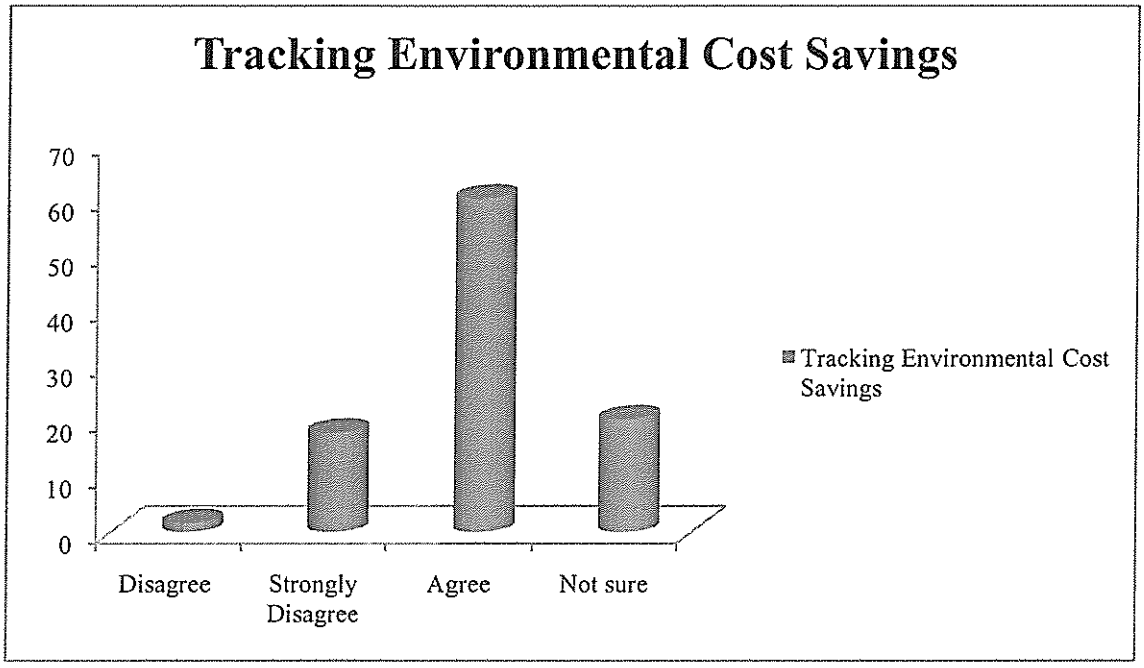
OPINION	FREQUENCY	PERCENTAGE
Disagree	2	1.6
Strongly Disagree	22	17.9
Agree	75	60.2
Not sure	25	20.3
	123	100.0

Source: Primary data

Table 4.9 shows that there were significant positive perceptions on the tracking of environmental cost savings (Chi-squire = 91.3, DF = 3, P-value = 0.000). Most of the respondents 78% had a

positive perception that there was good tracking of environmental cost savings, 20% were not sure and only 2% had a negative perception.

Figure 4.9: Showing tracking of environmental cost saving



Source: Primary data

4.4 Perceived Financial Performance

This section attempted to establish the level of perceived financial performance in the cement industry (which is in line with objective 2 of the study). The findings are as indicated in table 4.10 below. The frequency distribution table was used to analyze the level of perceived financial performance in the cement industry in Uganda.

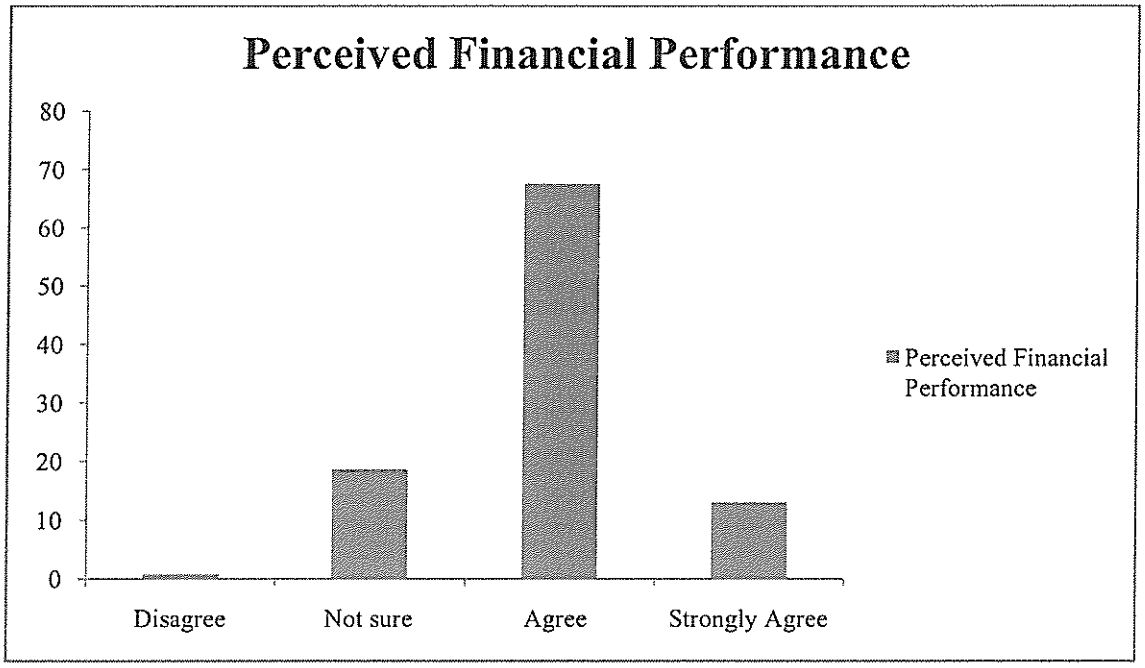
Table 4.10: Perceived Financial Performance

OPINION	FREQUENCY	PERCENTAGE
Disagree	1	0.8
Not sure	23	18.7
Agree	83	67.5
Strongly Agree	16	13.0
Total	123	100.0

Source: Primary data

Table 4.10 shows that there were significant positive perceptions on the perceived financial performance of the cement industry (Chi-squire = 126.6, DF = 3, P-value = 0.000). Most of the respondents 81% had a positive perception on the perceived financial performance of the cement industry, 19% were not sure and only 1% had a negative perception.

Figure 4.10: Showing the perceived financial performance



CHAPTER FIVE

5.0 DISCUSSIONS, CONCLUSSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This study was designed and carried out to establish the applicability of EMA on the financial performance of the cement industry in Uganda. The main variables of the study were EMA application – being the independent variable, and perceived financial performance as the dependent variable. The constructs used for EMA application were: environmental information, environmental evaluation, compliance of environmental laws, and tracking of environmental costs savings. The parameters used for financial performance were: revenue growth, profitability, and cash flows. The main instruments used to collect primary data were a closed ended questionnaire. Secondary data from final accounts of the cement industries could not be released to me for this study. So, perceived financial performance as rated by the employees in the research questionnaire was used.

5.2 DISCUSSION OF FINDINGS.

5.2.0 EMA Application Levels

5.2.1Accounting Environmental information

Most of the respondents indicated that there was adequate, timely, accurate, reliable and concise accounting environmental information. It was further found that the processes of generating, recording, and communicating of environmental information was efficient and effective in the cement industry in Uganda. The findings are consistent with theoretical work suggesting that recognition of environmental information has a positive reputation effect which positively augments firm value (Khaled & Paton, 2005).

Corporate environmental reporting has long been adopted as a communication tool and strategy for enterprises striving for sustainability (Allen & Chong, 2003). It not only accelerates stakeholder engagement, but also fosters an internal consensus at the management level to improve the company and its suppliers' performance. The findings therefore imply that with

good environmental information, there is positive effect on the firms' perceived financial performance.

5.2.2Accounting Environmental Evaluation

Most of the respondents had a positive perception that the accounting environmental evaluation of the company is efficient, systematic and appropriate. The findings indicate that the cement industry had efficient processes for evaluating the environmental effects of the company's activities and the executive committees of the cement industry took a key role in overseeing and monitoring of environmental management activities. With consistently environmental evaluation, there is a positive effect on financial performance as companies recognize that industrial processes harm and cause waste. There is therefore need for a continuous evaluation of the effects of the industries processes on the environment as technology and processes keep changing.

Recognizing that industrial processes that harm and waste are, by definition, less economic and therefore more costly in the long run, companies and industries are trying to dovetail their material and waste flows, attempting to eliminate pollution by tailoring manufacturing by products so that they become the raw materials of subsequent processes.

According to Hawken (2000), the purpose of integrating environmental evaluation in the industrial processes of a company is one of the pathways to innovations. The incentive to lower costs through continuous environmental evaluation is not to externalize these costs onto society, but implementing better design. This leads to more acceptability of products to society and therefore increased sales that has a positive effect on the perceived financial performance.

5.2.3 Compliance of Accounting Environmental Laws

Most of the respondents had a positive view on the compliance of environmental laws. The findings indicated that the cement industries in Uganda had systematic processes to respond to government policies on environmental issues and, adequate resources were provided to ensure implementation and monitoring compliance of government policies on the environmental activities.

Firms' adopting a stringent environmental standards (globally) have higher market value and awards result in significant positive returns which is consistent with the findings of Dowell, et al,

2000. As part of the environmental management effort, the government of Uganda legal framework has been overhauled so as to provide a sound basis for environmental management (Benjamin, 1993). The research shows that the cost of complying with the environmental laws would be equal or less than the direct benefits, even without including several key environmental benefits. ECOTEC, 2001 reports that companies that start the process of compliance early, will recoup much more benefits than companies that wait to comply until later. The benefits include less production costs, longer lives of workers and citizens, more jobs, and less strain on social services.

Poor environmental behavior may have a real adverse impact on the business and its finances. Environmental risks cannot be ignored, they are now as much a part of running a successful business as product design, marketing, and sound financial management. Early compliance of environmental laws by companies will therefore have a positive effect on the company's perceived financial performance as they avoid the repercussions which include punishment of fines, increased liability to environmental taxes, loss in the value of the company land, loss of sales through consumer boycotts, loss of insurance cover, law suits, and damage to corporate image, among others.

5.2.4 Tracking of Environmental Cost Savings

Most of the respondents had a positive perception that there was good tracking of environmental cost savings. The research found that established procedures for tracking the company's commitment to environmental issues were in place and management of the cement industries always encouraged employees to take initiatives that aimed at reducing the company's environmental negative effects. The findings concurs to Porter & Esty (1998) conclusions that firms are finding resource-saving opportunities by tracking of environmental cost saving opportunities that are bringing down costs and improving efficiency.

Corporate managers have limited time and capacity to focus on environmental issues, and many are just now beginning to appreciate the depth of the opportunities presented by paying attention to resource flows. Companies are now designing environmental strategies that can lower the customers' costs at the same time enhancing the products value. Management is often unaware of the extent of environmental costs and cannot identify opportunities for cost savings.

5.3.0 Levels of Perceived financial performance

Most of the respondents had a positive perception on the perceived financial performance of the cement industry in Uganda. The findings were that the perceived financial performance of the cement industry in general is in good status as perceived by the employees. Even the analysis of individual perceived financial performance parameters shows that revenue generation has been improving, cash flows are seen to be in a good state and profitability has been on the increase.

This is evidenced by the domestic sales revenue growth of Hima Cement Limited by 19% for the year 2002 (Tresarrieu & Njoroge, 2003). After controlling for variables traditionally thought to explain firm-level financial performance, Konar & Cohen (2001) found that bad environmental performance is negatively correlated with intangible firm value.

Recognition should be made that this study was made on a restricted sample and therefore other factors such as investments in themselves of the cement industry, market conditions are financially attractive and viable. Environmental performance is argued that go hand-in-hand with commercial performance according to Nicole, et al (2006). There was limited evidence as the senior management of the cement industry denied access of the financial performance reports to this research. The perceived financial performance perceptions may not therefore conclusive enough for this research.

5.3.1 Relationship between EMA Application and Perceived Financial Performance

Findings showed that EMA application correlates positively with the perceived financial performance in the cement industry. Environmental information, environmental evaluation, compliance of environmental laws and tracking of environmental cost savings had a positive relationship on perceived financial performance of the cement industry.

5.3.2 Relationship between Accounting Environmental Information and Perceived Financial

Performance

A strong positive correlation exists between accounting environmental information and perceived financial performance of the cement industry in Uganda. This implied that with good environmental information, the perceived financial performance of the cement industry

improved. Recently, the need to disclose corporate social performance has become an international consensus and many countries have moved to pass new legislation. In Belgium, Canada, France, Norway, Netherlands and the USA governments have adopted mandatory regulations regarding greater disclosure of environmental and financial information (Allen & Chong 2003). This overall trend towards greater environmental information disclosure shows that by the cement industry maintaining sound environmental information structures and good social responsibility practices have become essential components in pursuit of improved financial performance.

5.3.3 Relationship between Accounting Environmental Evaluation and Perceived Financial Performance

A significant correlation exists between accounting environmental evaluation and perceived financial performance of the cement industry. This means that environmental evaluation positively affected the perceived financial performance of the cement industry. Today when many people's bodies in industrial nations are, technically speaking, too toxic to be placed in landfills, it is time to establish a pathway to eliminate the poisons, a chain of actions and consequences that energizes business, that stimulates innovation, that preserves employment, and restores the environment (Frost & Gallopoulos, 1998). This can only be achieved through a continuous environmental evaluation of the processes of the company's.

The philosophy of continuous environmental evaluation in the cement industry may go beyond the hygiene of only curtailing waste; it garners sales as they are handled in the more acceptable way and therefore more income.

5.3.4 The impact of Compliance of accounting Environmental Laws on Perceived Financial Performance

A significant correlation exists between compliance of accounting environmental laws and perceived financial performance in the cement industry. This implies that compliance of environmental laws improved on the perceived financial performance of the cement industry. In our current global economy, what is good for global corporations and the market is not

necessarily good for the human future. Economic systems should be re-designed so that what is good for business is good for the global environment and the human future. If we want a decent future, we must make choices in the present to protect the future, both for ourselves, our children, and the larger global environment. According to Richard (2003), the cement industry in Uganda is cognizant of environmental awareness and some of the activities provide the benchmark for compliance of environmental laws.

To guide these choices, government puts in place laws and regulations to preserve the future of which the cement industry has to comply (Tuhumwire, 2002). By complying with the environmental laws, punishments such as fines, environmental restorative costs, closure of businesses have been avoided, and therefore the perceived financial performance of the cement industry improved.

5.3.5 The effect of Tracking of Environmental Cost Savings on Perceived Financial Performance

A strong correlation exists between tracking of environmental cost savings and perceived financial performance of the cement industry. This implies that good tracking of environmental cost savings improved on the perceived financial performance of the cement industry. The purpose of integrating cost into pricing is not to provide a toll road for polluters, but a pathway to innovation (Hawken, 1998). The incentive to lower costs is the same one that presently operates in all businesses, but in this case the producer's most efficient means to lower them is not externalizing these costs onto society; but implementing better design.

Competition in the market place should not be between a company wasting the environment versus one that is trying to save it. Competition should be between companies which can do the best job in restoring and preserving the environment, thereby reversing historical price and cost incentives of industrial system that essentially send wrong signals to consumers. The ultimate point of cost/price integration is to fully enfranchise the cement companies into the process of environmental restoration.

Conclusively, significant positive correlation exists between all the variables composing determinants of EMA application and perceived financial performance. This finding confirms the assertion advocated in the conceptual model of this research.

5.3.6 SUMMARY OF CONCLUSIONS

The study concludes that; there exist relationships between the variables of study as conceptualized. Constructs of EMA application (environmental information, environmental evaluation, compliance of environmental laws and tracking of environmental cost savings) are significantly positively related to perceived financial performance of the cement industry.

Environmental information significantly positively relate to the perceived financial performance of the cement industry in Uganda. Greater environmental information disclosure is an essential component of improved financial performance.

Environmental evaluation significantly positively relate to perceived financial performance of the cement industry in Uganda. Continuous environmental evaluation handled in an acceptable way garners sales and therefore improved incomes. Compliance of environmental laws also significantly positively relate to perceived financial performance. By complying with environmental laws, punishments by the regulatory authorities are avoided and therefore improving the perceived financial performance of the cement industry.

Tracking of environmental cost savings significantly positively relate to the perceived financial performance of the cement industry in Uganda. Integrating cost into pricing is a pathway to innovation and an efficient means to lower costs. Of the determinants of environmental management accounting application, environmental information and, tracking of environmental cost savings predict more of financial performance than environmental evaluation and compliance of environmental laws. The study further concludes that the perceived financial performance of the cement industries in Uganda is generally fairly good.

5.4 RECOMMENDATIONS

i) It is necessary that all the stakeholders (including investors and other interest groups like research students) are provided with all information regarding the activities of the company. This can be by way of weekly bulletins, worker education, stakeholder seminars and company management participation in public talk shows. It is also necessary to keep improving the communication mechanisms to share environmental information. Government should establish legal and regulatory frameworks to ensure public access to environmental information from the companies.

ii) It is necessary that environmental evaluation is carried out periodically (say every two years) by technical staff charged (and with skills) with environmental management.

The skills can also be conveyed skillfully to stakeholders to constantly get involved in the environmental evaluation of the company's activities.

iii) The companies need to keep pace of the regulatory framework put in place by government and other regulatory bodies (like NEMA). This will ensure that the companies invest in improving their environmental performance record. It is necessary that the companies aim to improve their environmental performance faster/earlier than the competitors and by doing so, may enjoy the advantages of being faster compliers.

iv) It is necessary for businesses, investors and society to conveniently understand and track corporate holistic performance. Employees should be required to identify energy-saving projects as part of their performance evaluation. New conceptual framework for tracking environmental cost savings should be integrated through the perspective of efficiency (looking at the companies work value created in terms of input-output) should be introduced. It is necessary for companies to integrate environmental costs into pricing as a pathway to innovation.

5.5 AREAS OF FUTHER RESEARCH

Analyze the cost of fully implementing the EMA application on firm financial performance.

Research is needed to investigate the importance of EMA application on more specific industry or firm-level.

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KAMPALA INTERNATIONAL UNIVERSITY

Bachelor of Business Administration (Accounting)

APPENDIX A

QUESTIONNAIRE ON APPLICATION OF ENVIRONMENTAL MANAGEMENT ACCOUNTING (EMA) ON PERCEIVED FINANCIAL PERFORMANCE

Dear Respondent,

A study on the applicability of Environments Management Accounting (EMA) is being carried out. This is purely an academic research but can help top management and other stakeholders to understand the application of EMA in enhancing the financial performance of the business organization.

In order to accomplish this study, you are requested to complete this questionnaire (with your sincere objective) by ticking the option provided to enable you spend as little of your valuable time as possible. The information you provide will be treated with utmost confidentiality.

In case you are interested in receiving a copy of the outcome of this study (by- e-mail),

Please indicate your address below.

E-mail Address.....

Company's Name.....

Thanking you for sparing your valuable time.

Section A

Please tick the box indicating your age bracket.

Below 20 years ☐ 20-29 years ☐

30- 39 years ☐ 49- 40years ☐

Please tick the box indicating your gender.

Female ☐ Male ☐

Please tick the box indicating your highest qualification.

Certificate ☐ Diploma ☐

Degree ☐ Degree Master's ☐

Others (Specify) .....

Please tick the box indicating your work experience with this company.

Below 2 years ☐ between 2-5 Years ☐

Between 6-9 years ☐ between 10-15 years ☐

16 years and above ☐

Please indicate your operational area in the company

Production ☐ Human Resource ☐

Marketing/Sales ☐ Administration ☐

Finance/Accounting ☐ Transport ☐

Other (Please specify).....

Section B

1.0	GENERAL/ENVIRONMENTAL MANAGEMENT	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
1.1	Environmental management is greatly understood by all staff members.					
1.2	Our company has greatly integrated Environmental Management aspects into the business process.					
1.3	Top Executives of our company is entirely responsible for maintaining environmental management policies.					
1.4	Environmental management is greatly viewed as important by our company.					
1.5	Roles of personnel responsible for environmental management are clearly defined.					
1.6	Our Environmental management responsibilities in our company are very clear.					
1.7	Environmental management has been greatly integrated into our work.					
1.8	Lower level manager of our company are entirely responsible for implementing environmental management policies.					
1.9	Our company has greatly integrated awareness of ecological sustainable development in carrying out our activities.					
1.10	All staff in our company clearly knows what environmental management entails.					

2.0	ENVIRONMENTAL INFORMATION	Strongly Agree	Agree	Not sure	Disagree	Strongly disagree
2.1	System of internal control of our company provides very accurate information on environmental management.					
2.2	Our company system of internal control provides timely information on environmental management issue.					
2.3	Our company system of internal control provides very adequate information on environmental management.					
2.4	System of internal control of our company provides very reliable environment management information.					
2.5	System of internal control of our company provides very concise environmental management information.					
2.6	The environmental management information generated by the internal control system is easily understandable.					
2.7	The process of recording environmental management information is very efficient in our company.					
2.8	Our company effectively maintains communication between employees on environmental issues.					
2.9	Management of our company always uses environmental cost information to support internal decision making.					
2.10	Management effectively responds to communications from other stakeholders on environmental impacts associated with our company operations.					

3.0	ENVIRONMENTAL EVALUATION	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
3.1	There is a very efficient process in our company to evaluate compliance of legal and regularly requirements of the environment					
3.2	The Executive Committee overseeing environmental monitoring and reporting of the company's activities is very efficient.					
3.3	The company often investigates the environmental performance of the hazardous waste disposals by our vendors.					
3. 4	Our company has a very systematic procedure to evaluate compliance of environmental legislation and regulations.					
3.5	The auditing programmes for our workplace health and safety are very adequate.					
3.6	There are very appropriate environmental audit procedures in our company					
3.7	The company reports internally regularly on our environmental performance.					
3.8.	The company activities that do have a significant impact on the environment can easily be measured.					
3.9	The company's objectives are regularly reviewed to ensure they support continual in environmental management performance					
3.10	There is abundance of skilled personnel in our company to carry out environmental management evaluations.					

4.0	**Compliance of Environmental laws**	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
4.1	There is a very systematic process in our company by which it responds to the environmental policies of government					
4.2	Management has ensured tat the documented environmental policies are always availed to all our staff in the company					
4.3	There are well detailed guideline on how to conduct operations in a manner that takes care of environmental aspects in our industry					
4. 4	Our company has always complied with the relevant environmental laws.					
4.5	All our company operations require compliance with environmental, health or safety regulations.					
4.6	Our company has an effective transport plan addressing environmental issues					
4.7	Adequate resources are always provided to implement and control environmental management systems in our company.					
4.8	. There are thorough training programmes in our company that positively address environment management issues					
4.9	Management of our company routinely reports on environmental performance					
4.10	Our company has a well written formal policy regarding material/resource conservation, reduction, re-use and recycling.					

5.0	TRACKING OF ENVIRONMENTAL COST SAVING	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
5.1	There are well established procedures to track our company's commitment to environment issues.					
5.2	The company often monitors disposal of any hazardous waste generated by our operations					
5.3	Operations that are significantly related to environment concerns in our company have clearly been identified.					
5. 4	There is adequate expertise in our company that is able to carry our tracking of environmental management aspects.					
5.5	Management always encourages employees to take initiatives that aim to reduce our company's environmental impacts.					
5.6	There are positively adequate programmes to maximize the use of environmental safer and more sustainable energy sources in our company.					
5.7	The company routinely does track chemical use through material accounting in addition to, tracking environmental releases.					
5.8	Our company does monitors trends in consumption of natural resources like water, energy, forestry etc.					
5.9	The company routinely tracks environmental release from our operations.					
5.10	The management always seeks to protect vulnerable (at risk) groups in communities directly affected by our company's operations.					

6.0	FINANCIAL PERFORMANCE (PERCEIVED)	Strongly Agree	Agree	Not sure	Disagree	Strongly disagree
6.1	The company's business in terms of revenue generation is growing rapidly.					
6.2	The company's profitability has greatly increased over the past 3years					
6.3	The cash flows of company over the past three years have greatly improved.					
6. 4	With good environment management practices, revenue generation of our company can greatly be improved.					
6.5	With well defined environment management practices, the company profitability of our company can increase tremendously.					
6.6	With good environmental management practices, our company's cash flows can greatly be improved.					
6.7	Our company's financial performance is very excellent compared with others in the cement industry.					
6.8	With good environment management practices, the financial performance of our company can greatly be improved.					
6.9	Management views environmental management practices as a costly activity that impact on our company's profitability negatively.					
6.10	The expenditures incurred on management environment aspects do not have a significant effect on the financial performance of our company.					

END

Thank you once again for your valuable time to participant in this study.

APPENDIX B

TIME FRAME FOR THE STUDY

The study will take 16 weeks, from January to May, 2014. The activities of the study will comprise of the following.

No.	ACTIVITY	DURATION IN WEEKS
1	Proposal Writing	4
2	Designing Research Instrument	2
3	Orientation and Formalization of the Organization	2
4	Reviewing of the documents of the organization	3
5	Administering the Interviews and observation	2
6	Data interpretation and Analysis	2
7	Report writing and submission	1
	TOTAL	16

APPENDIX C

BUDGET OF THE STUDY

ITEMS	QUANTITY	UNIT COST	AMOUNT
Stationary			50000
Communication			50000
Transport			80000
Typing and binding			60000
Binding proposal	3	2000	6000
Binding final report	4	10000	40000
Data collection			100000
Miscellaneous			75000
Total			461000