

**RELATIONSHIP BETWEEN ENVIRONMENTAL MANAGEMENT
STRATEGIES AND PROFITABILITY AMONG KENYAN
MANUFACTURING FIRMS**

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MASTER OF COMMERCE

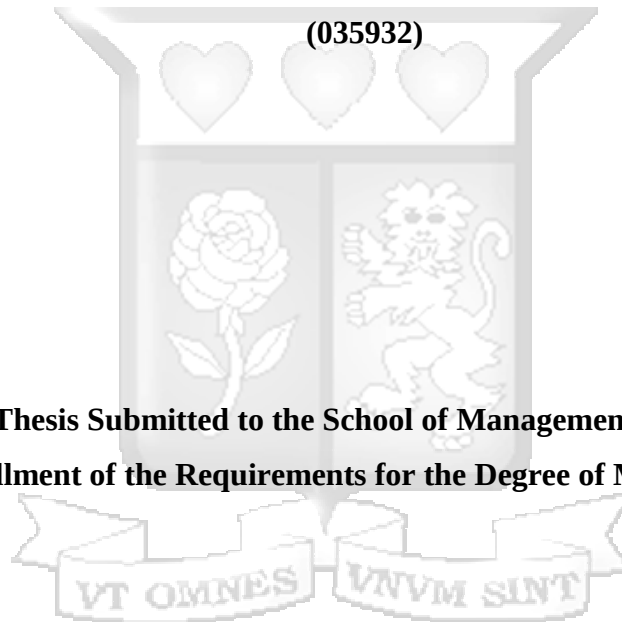
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**RELATIONSHIP BETWEEN ENVIRONMENTAL MANAGEMENT
STRATEGIES AND PROFITABILITY: A SURVEY OF MANUFACTURING
FIRMS IN KENYA**

By

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**A Masters Thesis Submitted to the School of Management and Commerce in
Partial Fulfillment of the Requirements for the Degree of Master of Commerce**



**SCHOOL OF MANAGEMENT AND COMMERCE
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APPROVAL

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In such a vast undertaking of this nature, it is not possible to acknowledge the contribution of all. However, the temptation to acknowledge the role of the following is irresistible.

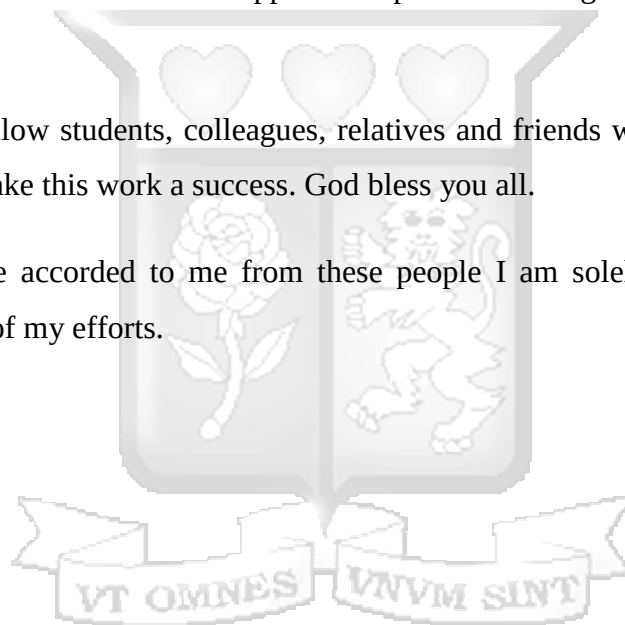
I wish to recognize the role played by my lecturers. Special tribute goes to Dr. David Wang'ombe -my supervisor for his tireless efforts in guiding and correcting my work.

I also acknowledge the respondents who took time to provide information which led to the realisation of this thesis.

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Despite the assistance accorded to me from these people I am solely responsible for this thesis. It is a product of my efforts.



DEDICATION

This thesis is dedicated to my mother, who has constantly demonstrated that neither age nor difficult circumstances should hinder one from furthering their studies.



TABLE OF CONTENTS

DECLARATION.....	i
ACKNOWLEDGEMENT.....	ii
DEDICATION.....	iii
LIST OF TABLES.....	v
LIST OF FIGURES.....	vi
ABBREVIATIONS AND ACRONYMS.....	vii
ABSTRACT.....	viii
CHAPTER ONE.....	1
INTRODUCTION.....	1
1.1 Background of the Study	1
1.1.1 Environmental Strategies	2
1.1.2 Manufacturing Industry in Kenya.....	4
1.2 Problem Statement.....	6
1.3 Research Objective	6
1.3.1 General Objective	6
1.3.2 Specific Objectives	7
1.4 Research Questions.....	7
1.5 Significance of Study.....	7
CHAPTER TWO.....	9
LITERATURE REVIEW.....	9
2.1 Introduction.....	9
2.2 Theoretical Review	9
2.2.1 Environmental Strategies	9
2.2.2 Benefits Accrued From Implementation of Environmental Strategies.....	11
2.2.3 Environmental Strategies Adoption in Kenya	12
2.2.5 Theoretical Framework.....	13
2.3 Empirical Review.....	15
2.4 Conceptual Framework.....	18
CHAPTER THREE.....	19
RESEARCH METHODOLOGY.....	20
3.1 Introduction.....	20
3.2 Research Design.....	20
3.3 Target Population.....	21

3.4 Sampling	21
3.5 Data Collection Methods	22
3.6 Data Collection Procedure	22
3.7 Validity and Reliability.....	23
3.8 Data Analysis	23
3.9 Ethical Consideration.....	24
CHAPTER FOUR.....	26
DATA PRESENTATION, ANALYSIS AND INTERPRETATION	26
4.1 Introduction.....	26
4.2 General Information.....	26
4.3 Environmental Strategies	30
4.3.1 Environmental Strategy Component.....	30
4.3.2 Purposes and Aims of Adopting Environmental Strategies.....	32
4.4 Environmental Strategies and Profitability	33
4.4.1 Link between Environmental Strategies and Costs	33
4.4.2 Extent Adoption of Environmental Strategies Influences Firm Costs.....	34
4.4.3 Link between Environmental Strategies and Revenues.....	34
4.4.4 Adoption of Environmental Strategies and Firm Revenues	35
4.4.5 Environmental Strategies and Firm Profitability	35
4.5 Relationship between Environmental Management Strategies and Profitability	36
4.5.1 Data and Measures	36
4.5.2 Regression Analysis.....	36
CHAPTER FIVE	39
DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS.....	39
5.1 Introduction.....	39
5.2 Summary of Findings.....	39
5.3 Limitations of the Study.....	41
5.4 Conclusions.....	42
5.5 Policy Recommendations.....	42
5.6 Suggestions for Further Studies	43
REFERENCES.....	44
APPENDICES	53
Appendix I: Introductory Letter	53
Appendix II: Research Questionnaire	54

Appendix III:	Stepwise Regression SPSS Output	61
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LIST OF TABLES

Table 1.1: Size of firms.....	5
Table 3.1: Sampling Frame.....	21
Table 4.1: Designation of the Respondents	27
Table 4.2: Company Annual Turnover	27
Table 4.3: Adherence to Parent Company Direction	30
Table 4.4: Environmental Strategy Component.....	31
Table 4.5: Purposes and Aims of Adopting Environmental Strategies	32
Table 4.7: Environmental Strategies and Costs	33
Table 4.8: Extent Adoption of Environmental Strategies Influences Firm Costs.....	34
Table 4.9: Environmental Strategies and Revenues	34
Table 4.10: Environmental Strategies and Firm Revenues.....	35
Table 4.11: Environmental Strategies and Firm Profitability.....	35



LIST OF FIGURES

Figure 2.1: A Conceptual Model of the Relationship between Environmental Management Strategies and Profitability.....	18
Figure 4.1: Duration of Firms Existence.....	28
Figure 4.2: Number of Employees in Firms Surveyed	29
Figure 4.3: Subsidiary Company	29



ABBREVIATIONS AND ACRONYMS

CEP	Council on Economic Priorities
CITES	Convention on International Trade in Endangered Species
CPI	Clean Production Initiatives
CSR	Corporate Social Responsibility
EA	Environmental Audit
EMAS	Eco-Management and Audit Scheme
EMCA	Environmental Management and Coordination Act
EMS	Environmental Management Systems
EU	European Union
GDP	Gross Domestic Product
ISO	International Organization for Standardization
KEBS	Kenya Bureau of Standards
KNCP	Kenya National Cleaner Production Center
MEAs	Multilateral Environment Agreements
NEMA	National Environmental Management Authority
R&D	Research and Development
SMEs	Small and Medium Enterprises
SPSS	Statistical Package for Social Sciences
UNEP	United Nations Environmental Programme
UN-Habitat	United Nations Human Settlements Programme
WCED	World Commission on Environment and Development

ABSTRACT

Organizations formulate and implement varied forms of strategies to improve their performance. Environmental strategies are largely borne out of push by regulation unlike other strategies which are motivated by need to improve performance and profitability. Therefore the influence of environmental strategies on profitability presents a fertile ground for research. The general objective of the study was to find out the relationship between environmental strategies and profitability of manufacturing firms in Kenya. A descriptive study was conducted with a target population of 735 manufacturing firms who were members of KAM as at 2013. A sample size of 110 firms was selected from which primary data was collected using questionnaires. Data was analysed using SPSS through descriptive analysis and multiple OLS regression analysis. Results were presented using charts and tables for ease of interpretation. Study findings revealed that majority of the Kenyan manufacturing firm had adopted ISO certification to a great extent. However, environmental components such as training on EMS, redesigning of products, developing EMS policies, environmental auditing, documentation of environmental issues, implementation of EMS, investment in green technology, undertaking eco-friendly activities, production of green products, adopting renewable energy and recycling activities were adopted to a moderate extent. The study further established that most of the respondents indicated that adoption of environmental strategies increased firm revenues. Further, study results indicated that environmental strategies applied enhanced cost saving from safer workplace conditions, ensured cost savings from conservation of natural resources and cost reductions associated with reduced emissions. Study results further revealed that environmental management strategies had a positive relationship with profitability of firms. The study recommends that there is need for increased compliance on environmental regulations and adoption of environmental strategies so as to increase revenue for the firms, improve corporate image, increase efficiency in production by reducing wastage thus achieving ISO certification and gaining competitive advantage. The study also recommends that the government should give incentives to companies adopting the environmental management strategies and also provide more information through research and case studies, so as to guide the firms adopting these strategies. The companies also need to allocate more resources and employ services of environmental consultants to guide the firms in adopting and implementing the environmental management strategies.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Environmental issues have become variables of great concern to top managers in the last few decades. There are both external and internal pressures in regard to environmental awareness which have forced top company executives to critically consider the environment as a critical strategy variable. External pressures include pressures from the public, government, regulatory forces, environmental movements and financial institutions. Internal pressures include employee attitude towards care for the environment. (Lee and Rhee (2007) cite that these external and internal pressures have made executives to always include the environmental as a key variable for gaining competitive advantage. This made the environmental awareness to be a critical factor in the strategy making process of any organization, more so, the organizations that are engaged in activities that provide more harm to the environment. In coming up with the environmental strategy, the top management of an organization must analyze the internal and external factors that affects the organization. The external factors include competition, market conditions and the regulations in place. The internal factors that need to be considered include the organizational culture, technology applied, resources available and the infrastructure that the organization has in place (Buyse and Verbeke, 2003).

Depending on the importance placed on environmental issues by management, the environmental variable can be integrated into the strategy making process at varying levels. Management that perceive the environment to be an integral variable in the strategic planning process integrate the environment at the higher strategy making hierarchy. However, management that do not put much emphasis on environmental issues have them integrated into the latter stages of the strategy process. However, regardless on the importance placed on environmental issues by management, the environment has critical effects on the organization. Further, environmental strategies have a profound effect on the performance of the organization, specifically, financial performance (Esty and Winston, 2009). Husted, Allen and Kock (2012) observed that there is lack of consensus in regard to how environmental strategy influences organizational financial performance. It is from this background that the current study sought to investigate how environmental strategies influence on profitability of organizations in Kenya.

1.1.1 Environmental Strategies

The 'Brundtland Commission Report', which is the name given to the World Commission on Environment and Development Report of 1987, made many top management executives in various organizations to question why and how organizations should consider environmental issues in their strategic planning process (Aragon-Correa et al., 2008). The Brundtland Commission Report established that organizations had a major role in caring for the environment as they do business in the environment. The report advocated for sustainable development where the organization plays a positive role in helping the government in dealing with environmental issues. This therefore indicated that organizations should not just focus on making profits while leaving the role of caring for the environment to the government. Caring for the environment should therefore be integrated into any business activity pursued by organizations (Cronin et al., 2011). Paulraj (2009) observed that the Brundtland Commission Report created awareness in managers as to the importance of considering environmental issues in the strategic planning process.

Lee and Rhee (2007) observed that though organizations may be in the same industry facing similar competitive context, their strategies may differ. Banerjee (2001) further noted that firms dealt with environmental strategies differently depending on their perceptions on the importance of the environment. The major determining factors into how the organization deals with environmental issues in their strategic planning processes are the threats and demands from the stakeholders. Bakker and Nijhof (2002) noted that, since an organization belongs to a network of stakeholders with different interests, there are various threats and demands placed on the organization by these stakeholders. This makes the organization to be wary of how it deals with the environment in order to satisfy the various stakeholders. Managers are influenced on their decisions about the environment by their perceptions regarding the environmental opportunities and risks, the resources commanded by the organization and the capabilities that the organization possesses. These factors further influence the corporate responses the organization designs towards the environment (Banerjee, 2001). As such, strategy is therefore a "choice and commitment" of a firm. A firm selects the strategy to follow and commits to it to ensure that the end results are accomplished as per the strategy. Diabat and Govindan (2011) indicated that the environmental strategy an organization adopts depends on the areas that a company emphasizes on and the resources

that it commits on those areas. This concept of choice and commitment leads to the organizations having different environmental strategies.

An environmental strategy is defined by Lee and Rhee (2007) as “a firm's selection of the width and depth of environmental-friendly practices and activities”. The depth and extent of a corporate strategy concerning the environment entails the degree of strategic responses taken to cater for the environment and the commitment the organization shows in engaging in sustainable development (Darnall, Henriques and Sadorsky, 2010). Clarkson et al. (2011) cited that organizations consider a variety of factors in their environmental strategies which include the organization and its systems, the products, the organization's supply chain and the processes. Further, the organization also considers the external organization factors such as regulations, what competitors are doing and the stakeholder demands.

There are four major types of environmental strategies that were suggested by Lee and Rhee (2007) which include proactive, reactive, opportunistic and focused strategies. Organizations that follow the proactive strategy are those that take all environmental variables into all major decision areas including in their strategic management. These organizations are at the forefront of adopting environmental practices as part of their processes and culture (Paulraj, 2009). Organizations that adopt reactive environmental strategy portray inclusion of environmental issues in few management decision areas. These organizations ignore environmental issues completely and they only cater for them when it is demanded by regulations or when stakeholders put pressure on them. Opportunistic strategy is adopted by those organizations that have major concerns about the environment and consider environmental issues in all major decision areas. However, these organizations lack commitment in deploying resources in environmental awareness issues and lack clear environmental management strategies. Lastly, focused environmental strategy entails an organization focusing in specific environmental areas (like planting trees) and focus large amount of resources in the selected areas. This makes the organization very successful in impacting the environment in the selected focus areas.

1.1.2 Manufacturing Industry in Kenya

The manufacturing industry in Kenya is large and able to serve the local market and export some of its products abroad. The Kenyan manufacturing industry deals in steel, oil refining, cement, batteries, soap, cigarettes, clothing, flour, aluminium, vehicle assembling, lead and various other small scale consumer goods(World Bank, 2010).

The manufacturing industry in Kenya is dominated mostly by multinational companies. The sector contributed 9.9% of the Gross Domestic Product (GDP) in 2010 and 9.4% in 2011. Several factors and recent developments are having varied effects on the manufacturing industry in Kenya. The factors which have motivated the growth of the manufacturing sector include tax incentives, tax reforms that favour growth of the industry and vigorous policies that promote exports. Other factors enhancing growth of the industry include increased production of agricultural products, trade incentives and expanded markets as a result of partnerships and common markets such as East African Community (EAC), COMESA and AGOA. On the other there are major challenges to the manufacturing industry in Kenya including power supply, cost challenges and cheap imports from China (KNBS, 2012).

Kenya Association of Manufacturers (KAM) is an umbrella body for the firms operating in the manufacturing industry. Established in 1959, KAM operated as an umbrella body to cater for the private manufacturing companies. However, it has recently evolved into a big force that offers all manufacturers (public or private) a bargaining and common voice. The organization is vibrant, dynamic and respected in the sector and is seen as a unifying force that caters for the needs and delivers a common front for all manufacturers. Currently KAM has 735 member firms involved in manufacturing in Kenya (KAM, 2013)

In Kenya, manufacturing firms are classified into six classes which as shown in Table 1.1. The basis of the classification is the number of employees and organization has. This classification is as per the Kenya Industrial Research and Development Institute (KIRDI).

Table 1.1: Size of firms

Size of class code	Number of employees
A	5-19
B	20-49
C	50-99
D	100-199
E	200-499
F	Over 500

Source: Kenya Directory of Manufactures Industries, 3rd Ed. 1997.

Based on this information Ondiek, (2011) classified the firms into small, medium and large categories. Firms that had employees between 5 and 49 were classified in the small category while those 50 to 199 employees were categorized as medium. Organizations with over 200 employees were categorized as large.

Kiambi (2009) notes that in Kenya, firms and government agencies have taken environmental strategies largely as corporate social responsibility efforts meant to improve corporate image. Earnhart, Khanna & Lyon (2012) argue that this is largely because the benefits of organizations having effective environmental strategies are not well documented in the emerging and developing economies. This results from the poor enforcement of environmental regulations and weak social pressures. However this is currently changing and firms in Kenya are taking proactive action in adopting and implementing environmental strategies. Kamande (2013) found that Kenyan manufacturing firms fall into two categories with regard to adoption of environmental strategies. There are those who have adopted environmental strategies for the purpose of being compliant with minimum requirements of legal and social rules and regulations. This therefore calls for compliance with National Environmental Management Authority's (NEMA) Environmental Audit (EA). However, there are other manufacturing companies that have incorporated pro-environmental actions such as Clean Production Initiatives (CPI) and ISO certifications which are environmental strategies considered to be proactive. This study focused on manufacturing firms who have reactively and/or proactively adopted environmental strategies and thus get a balanced viewpoint on how environmental management strategies impact the profitability of the organization.

1.2 Problem Statement

Organizations formulate and implement varied forms of strategies to improve their performance. As noted by Canon-de-Francia & Garces-Ayerbe, (2009) and Tutore, (2010) environmental strategies are largely borne out of push by regulation unlike other strategies which are motivated by need to improve performance and profitability. Therefore the influence of environmental strategies on profitability presents a fertile ground for research.

Despite the importance of environmental concerns in business management and operation there is limited literature on environmental strategies. The available literature from scholars and practitioners does not find consensus on how environmental strategies influence firm profitability. Some studies like Ambec and Lanoie (2008) and Buysse and Verbeke (2003) have established a positive correlation between applied environmental strategies and financial performance of an organization. These studies revealed that when organizations operate in strict environmental regulatory regimes, they become environmental conscious which helps them to gain competitive advantage. However, there are other studies, such as Hart and Ahuja (1996) and Wagner (2005), which deny any relationship between environmental strategies and organizational financial performance. Further, a study by Surroca et al (2010) established that environmental strategies have an indirect relationship with environmental strategies. The study established that environmental strategies only have a mediating effect on firm profitability.

Most of the studies conducted in relation to the influence of environmental strategies on organizational financial performance are largely foreign. It is from this perspective that the study was proposed and undertaken to illuminate on this subject of environmental management strategies and firm profitability.

1.3 Research Objective

The current study was guided by the following general and specific objectives.

1.3.1 General Objective

The study's general objective was to establish the relationship between environmental management strategies and profitability of manufacturing firms in Kenya.

1.3.2 Specific Objectives

The study sought to achieve four specific objectives;

- i. To investigate nature of environmental management strategies in Kenyan manufacturing firms
- ii. To assess the effect of environmental management strategies on revenues in Kenyan manufacturing firms
- iii. To assess the effect of environmental management strategies on costs in Kenyan manufacturing firms
- iv. To assess the relationship between environmental management strategies and profitability in Kenyan manufacturing firms

1.4 Research Questions

The study sought to answer the following research questions;

- i. What is the nature of environmental management strategies adopted by manufacturing firms in Kenya?
- ii. What is the effect of the environmental management strategies on revenues of manufacturing firms in Kenya?
- iii. What is the effect of the environmental management strategies on costs of manufacturing firms in Kenya?
- iv. What is the relationship between environmental management strategies and profitability in Kenyan manufacturing firms?

1.5 Significance of Study

The study will be of value to the following stakeholders.

Management and Employees

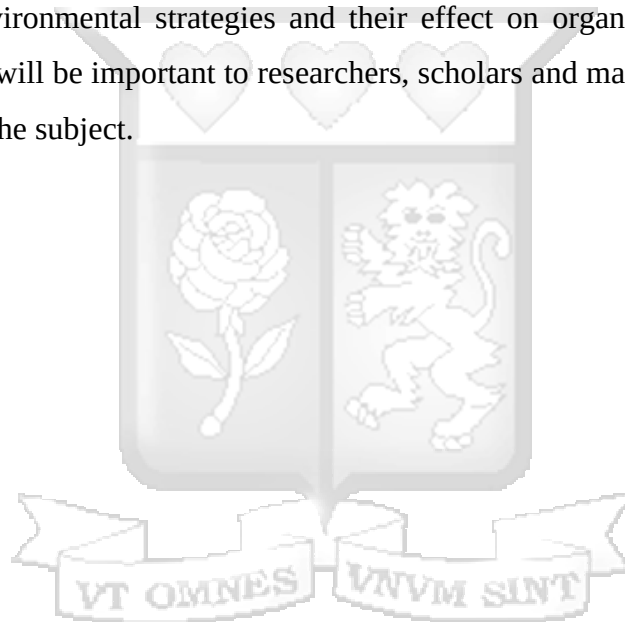
The study will draw the attention to management as to what is required in order to exploit environmental strategies as a tool for competitive advantage, not only in Kenya but in the competitive regional and global market. The study will create awareness among employees as on environmental concerns and how firms respond to them.

Policy Maker and Regulatory Agencies

The policy makers and regulatory agencies will benefit from the study as it will shed light on the environmental strategies adoption and how they influence the operations of the firms. This will aid in coming up with appropriate policy and regulatory framework to guide how firms respond to environmental concerns. The study will also stimulate debate on this important subject which has been neglected.

Scholars and Practitioners

This study will also prove to be of significance to scholars and practitioners in the subject of environmental strategies in Kenya. The study findings will provide more empirical literature on the subject of environmental strategies and their effect on organizational performance. This literary material will be important to researchers, scholars and managers who seek to get more information on the subject.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the theoretical foundation of the study. It begins with a theoretical review where nature of environmental strategies is discussed. The study then discusses the stakeholder theoretical framework which guided the study. There is a brief presentation of empirical review of past studies. The chapter ends by presenting the conceptual framework for the study.

2.2 Theoretical Review

This section presents a theoretical review of literature. The chapter reviews environmental strategies, benefits derived from environmental strategies, measurement of environmental strategies, and a theoretical framework.

2.2.1 Environmental Strategies

Fergusson and Langford (2006) observed that environmental strategies can be integrated into the organizational strategy at different levels in the strategy hierarchy. The corporate strategic level is the highest where the core existence of the firm and its mission is examined. At this level, there are very few firms that integrate environmental variables. A few exceptions however exist where organizations such as Friends of the Earth and Greenpeace indicating their fundamental mission and corporate strategy as being environmental protection. However, these firms have a social motive not a profit motive like many other organizations whose main goal is to maximize shareholder wealth. It is expected that most profit making organizations will integrate their major goals in the corporate level strategy which are profit and shareholder maximization. When an organization adopts environmental strategies at the highest strategic management level, they will involve developing products that do not harm the environment and engaging in technologies that are environmentally safe. The business in this case strives to be a 'green' organization.

The next level in the strategic management process is the business level (Paulraj, 2009). The corporate strategy dictates the types of business the organization participates in and how it goes about its various functions. At the business level, the organization makes technology,

product, market and portfolio decisions. Here, the organization makes decisions on which product to make, the markets to compete in, the technology to employ in its production and the mix of products it should have. At this level, the organization makes decisions regarding how the organizational resources will be allocated. This is done keeping in mind that the organization seeks to attain competitive advantage (Tutore, 2010). When environment variable is considered in this strategic level, it involves ensuring that resources are allocated to produce green products and engage in green technologies. The environmental strategies at this level are aimed at gaining the organization competitive advantage in the market (Simpson & Samson, 2010).

The next in the hierarchy after business strategy is functional strategy (Lee and Rhee, 2007). This involves coordinating and planning the operations, policies and procedures in the different departments or functional units. The functional units of an organization include marketing, production, finance and research and development. The functional strategies are aimed at complying with regulations concerning the environment. Most of these strategies are aimed at managing waste, preventing pollution, development of new products, enhancing its research and development activities and selecting the correct location for its production units or branches. These are important strategic actions that help the organization to be able to achieve its mission (Orsato, 2006).

Winston and Mintu-Wimsatt (2013) observed that there are four major areas that environmental strategy activities focus on. These are corporate focus, manufacturing focus, marketing focus and employee focus. Corporate focus refers to the organization's actions at the highest level to integrate environmental issues with the corporate strategy. Manufacturing focus involves actions by an organization to indulge in manufacturing processes and technology that reduces the negative impact of the organization to the environment. Marketing focus entails actions by the organization in the market that are geared towards the external stakeholders. These external stakeholders include the public, media and customers. Lastly, employee focus entails the efforts by the organization to engage its employees in activities that are geared towards caring for the environment (Paulraj, 2009). Further, Winston and Mintu-Wimsatt (2013) observe that the four focus areas are not set to limit the organization on how they should incorporate environmental issues in the strategic planning process but they are aimed at providing a roadmap for the major areas that organizations should focus on.

The extent to which environmental issues are integrated in a firm's strategic management process is depicted by how deep the organization's environmental strategy is. The depth of the environmental strategy is indicated by the resources committed by the organization towards environmental issues and the efforts by the employees to engage in environmental activities. The motive towards environmental management and how environmental issues are integrated into the strategic management process are also indicators of how deep the firm's environmental strategy is (Rhee and Lee, 2003). This study applied the depth dimension to establish the level of environmental management in manufacturing firms in all the four areas.

2.2.2 Benefits Accrued From Implementation of Environmental Strategies

González-Benito and González-Benito (2005) revealed that organizations have different motivations for engaging in environmental strategies which include need to provide customers with environmentally safe products, for positive corporate image, have a good relationship with stakeholders and to enhance their profit. Organizations adopt green strategies with the expectation that they will enhance their competitive advantage and enhance their financial performance. Organizations try to attain this through having ecolabels on their products and marketing their products as ecologically friendly (Thompson et al, 2009).

An organization that is labeled as eco friendly is perceived by stakeholders as having good practices and its corporate image is enhanced. This enables the company to attract more environmental conscious customers in the market (Udo de Haes & De Snoo, 1996). Further, an organization with a reputation of being environment conscious is unlikely to attract backlash from green movements and regulatory agencies. This makes the company to lower its environmental compliance costs. However, for this to have an advantage, there must be willing consumers to buy the eco friendly products. This therefore calls for an increased awareness on the part of stakeholders on the importance of having environmentally friendly products. Another benefit derived from adoption of environmental strategies and practices is improvement of the corporate image which gives the company more visibility and enhanced reputation in the market (Welford and Gouldson, 1993). Gonzalez-Benito and Gonzalez-Benito (2005) further observed that organizations are motivated by ethical considerations when they get involved in environmental activities. Organizations seek to engage in ethical business by caring for the environment they operate in (Azzone et al, 1997).

2.2.3 Environmental Strategies Adoption in Kenya

As Kenya develop, it is concerning that most of the There is a growing concern in Kenya and at global level that many forms of development activities cause damage to the environment. The little concern about the environment by organizations is mainly due to the public having inadequate information and awareness about sustainable development and the role of organizations in environmental sustainability (Katuse, 2011). Further, poor environmental awareness is exacerbated by poor community involvement and regulatory oversight over the environment. There are few forums where the community, organizations and the regulatory authorities come together to plan and manage natural resources and the environment in general. However, Kamande and Lokina (2013) indicated that the government of Kenya had done a lot in adopting and implementing policies and legal framework to address utilization of natural resources and the environment. These policies and regulations are aimed at curbing environmental degradation brought by economic activities by organizations.

To demonstrate the country's involvement in caring for the environment and engagement in sustainable development, the country is a host to United Nations Human Settlements Programme (UN-Habitat) and United Nations Environment Programme (UNEP) headquarters. Further, Kenya is a signatory to various Multilateral Environment Agreements (MEAs) which include the Kyoto Protocol, Stockholm Convention, Montreal Protocol, the Basel Protocol, Agenda 21 and the Convention on International Trade in Endangered Species (CITES) (Nyangena, 2010). To meet the international environmental best practices, Kenya is seeking to strengthen its capacity in environmental management (Business Daily, 2010).

Katuta (2012) intimates that people in Kenya have become more aware about the environment in recent years. The concept of sustainable development is gaining ground in Kenya and people are realizing that environmental issues and economic development cannot be separated. This has increased efforts to arrest environmental degradation and pollution and calls for engaging in activities aimed at taking care of the environment while pursuing business interests. Nyangena (2010) notes that the envisioned target growth in gross domestic product (GDP) of 10 per cent over the next three decades as per Vision 2030 will inevitably result in heavy demand for energy, water, solid waste management and the manufacture and use hazardous and toxic substances in the country. He further argues that the country is faced and grappling with difficult decisions and tradeoffs with regard to energy as it strives to achieve sustainable development.

Hackenbroch, Wiekert and Cosack (2007) noted that the energy sector accounts for most of the green projects. The most vibrant sector in Kenya in adopting environmental strategies is the sugar sector. This is demonstrated by companies in the sugar sector adopting recycling. In Kenya, Mumias Sugar Company has led in the greening movement by engaging in a 35 Megawatt sugar bagasse electricity generating project (Katuta, 2012).

Katuse (2011) noted that Kenyan firms have no option but to follow the global trend on environmental management to curb climate change. This has seen increased campaigns to engage in production technology, service and products that have minimal harm to the environment. Katuta (2012) argues that for firms to be competitive in the regional and global markets, environmental strategies or green strategies are a key success factor. There are some incidents in Kenya in the recent past where NEMA, the authority mandated to enforce environmental compliance, acted on organizations that were deemed not to comply with environmental regulations. One instance is the closure of slaughter houses in Dagoretti, Nairobi for non compliance to waste management regulations (Chemutai, 2008).

Kenyan business have to adapt to climate change in order to survive (Ikiara et al., 2004; Kiambi, 2009) and as such environmental sustainability becomes one of the key strategies within which to gain competitive advantage not only within the country but the region as a whole. Kamande (2013) found that Kenyan manufacturing firms fall into two categories with regard to adoption of environmental strategies. There are those who have adopted environmental strategies merely to comply with NEMA environmental regulations such as Environmental Audit (EA). However, there are other organizations that have put in place strategies such as ISO 14001 or Clean Production Initiatives. These are strategies which are not required by law but which these organizations adopt voluntarily.

2.2.5 Theoretical Framework

This section lays the theoretical foundation upon which the study is grounded. The study discusses three interrelated theoretical perspective relevant to this study namely shareholder theory, stakeholder theory and enlightened stakeholder theory. The three theoretical perspectives offer guidance on studying the relationship between environmental strategies and profitability.

The shareholders theory or the “classical view” sees environmental strategies as a means to achieve the organizational goal of maximizing shareholder wealth. This study applied this theory and sought to establish how environmental strategies can be used by the organization to create competitive advantage, increase revenues and reduce costs. Lantos (2001) observed that in the shareholders theory, there are two perspectives: constrained profit-making approach and the pure profit-making view approach. Carr (1968) argued that the constrained profit-making perspective portrays the need for engaging in environment management activities as an indirect means to increasing shareholder value. On the other hand, the pure profit making approach is where organizations engage in environmental management practices because it is required by law.

Sundaram and Inkpen (2004) further emphasized on the shareholder theory when they indicated that managers of the modern organization should only focus on the goal of maximizing shareholder value as the only feasible goal. Freeman (2004) however disapproved of shareholder theory by indicating that organizations should not only focus on maximizing shareholder value at the expense of violating the rights of other stakeholders. This view is supported by Freeman and McVea (2001) who cited that though the chief goals of the organization is to maximize shareholder wealth, they should not violate the rights of other when they are in the process of achieving their major goal. This therefore indicates that organizations have a duty to cater for the rights of the other stakeholders and the environment in which they operate.

The other major theory that this study was based on is the stakeholder theory. Freeman (2010) defined a stakeholder as any individual or group that is affected by the organization’s activities or that affects an organization. Stakeholders include suppliers, customers, creditors, the public, government and the shareholders. Friedman and Miles (2006) pointed out that the organization n should seek to cater for all its stakeholders through actions and strategies that the firms adopt. This theory therefore calls for the organization to have strategies and practices to ensure that it takes good care of the environment and the community in which it operates. The demands and pressure from stakeholders is continually mounting requiring the organization to observe responsible actions in regard to the environment. Kassinis and Vafeas (2006) observed that this pressure and demands is forcing firms to include environment issues in their strategic planning process and operations.

Some authors (Buysse and Verbeke, 2003; Sharma and Henriques, 2005) observe that this has forced firms to engage in a variety of environmental practices aimed at satisfying the demands from its stakeholders. However, Freeman (2010) argued that there may be challenges since it is difficult to satisfy all stakeholders of a firm. This therefore calls for the firm to consider which of its stakeholder demands are feasible depending on its technology, resources and general environment. This theory underlines the fact that roles and responsibilities of firms are not confined to profit maximization. Thus, the firm should set responsibilities for all parties that affect or are affected by its actions and that may differ in their power against, legitimacy of relationship with, and urgency of claims against the firm.

The last theory that this study was based on is the enlightened stakeholder theory. This was proposed by Jensen (2001) and advocates for the maximization of value as the chief goal of the firm. This therefore calls for the organization to consider all stakeholders and engage in satisfying their needs which then results to the organization satisfying its basic objective. Jensen observed that an organization cannot be able to maximize its value if any of its stakeholders is overlooked or ignored. This is because there are costs that are incurred when some stakeholders are ignored such as litigation and penalties for non compliance.

2.3 Empirical Review

The following subsections discuss empirical study finds relevant to the study in line with the study objectives.

2.3.1 Nature of environmental management strategies

The notion that businesses have some responsibility to society apart from merely fulfilling their economic and legal obligations has been lingering amongst academics for some time (Carroll & Shabana, 2010). However, only recently (since the 1950s) has the importance and empirical research of this topic increased dramatically. Many themes describing the relationship between the corporation and society as well as the natural environment have since been developed. The most commonly used term in the literature is corporate social responsibility (CSR) or green revolution (Montiel, 2008) followed by many alternative themes and terms such as social responsibility (SR), corporate citizenship, corporate sustainability and corporate social performance (CSP) as well as business ethics and stakeholder management. One of the more notable debates regarding environmental management is whether it makes business sense for companies to value and act on environmental issues.

Along with the development of different themes and terms, different perspectives from which corporations view their social and environmental activities, and ultimately different approaches to these activities, have blossomed as well (Porter & Kramer, 2006). As opposed to the generic and marketing perspectives, Porter and Kramer (2006) propose a strategic way to implement environmental or CSR strategies in the business. This provides the firms with a way of integrating their economic and environmental objectives with their core business strategy as a long-term commitment, then 'environmental management can be much more than a cost, constraint, or charitable deed, it can be a source of opportunity, innovation, and competitive advantage (Porter & Kramer, 2006).

However, most prevalent approaches to environmental management are so detached from business that companies fail to achieve the greatest opportunities for society. This limitation implies that managers must develop highly focused and effective environmental actions after having identified which environmental issues matter most to the firm. By doing so, the firm can increase its own profit and strengthen its long-term competitiveness, as well as making a meaningful environmental impact and thereby achieving a win-win situation through the creation of the synergistic value known as shared value (Ditlev-Simonsen & Midttun, 2011).

2.3.2 Effect of environmental management strategies on revenues

Mattei (2010) established that having environmental strategies is related with competitive advantage, increasing market share and higher sales revenues. The performance of the organization in the market is indicated by how well the organization is caring for the environment, how it is socially responsible and its financial outcomes. Tyagi (2013) also noted that most of the organizations that are indicated to observe social responsibility towards the environment and that are ISO certified, perform better than their peers in the market.

A study by D'Mello et al. (2011) in US established that most of the large US multinationals engage in environmental sustainability efforts. The study established that of the more than 80% that engage in green projects, almost all of them report an increase in corporate reputation due to those efforts while others report that their market share and revenues have improved. However, this study established that there were those firms that reported no positive impact on revenues as a result of green projects. A study by Menguc, Auh and Ozanne (2010) established that adoption of proactive environmental strategies enhances a firm's sales and profits.

2.3.3 Effect of environmental management strategies on costs

Financial performance has been considered one of the most visible advantages coming from proactive environmental management and improved environmental performance. Previous literature has underlined financial performance of proactive environmental management as one of the main drivers of going green, and related environmental organizations have provided quantitative evidence of cost and differentiation advantages. Bohdanowicz (2005) suggests that the most significant benefits are reduction of operating costs, demands from customers and improved hotel image.

The firms best practice production processes can result into the firm experiencing cost advantage (Hart, 1995; Stead & Stead, 1995). The best practice production processes may include having production process that are less polluting, recycling of waste and by-products and applying technology that have lesser negative impacts to the environment (Dechant & Altman, 1994; Hart, 1995; Porter & van der Linde, 1995). Engaging in such production best practices reduces the cost of production to the firm and hence giving the firm costs advantages relative to its peers. These best practices further reduce the compliance costs of the firms and also reduce any litigation costs from regulatory authorities or interested stakeholders (Hart, 1995; Shrivastava, 1995; Stead & Stead, 1995). A study by Stead & Stead (1995) established that organizations are motivated to implement production focussed environmental strategies due to the need to reduce costs.

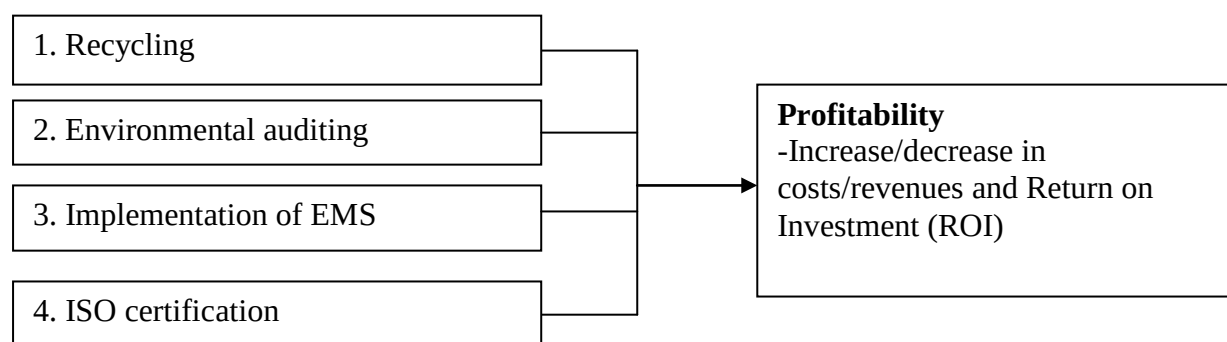
2.3.4 Relationship between environmental management strategies and profitability

A study in the Nigerian paper and pulp industry by Adelegan et al. (2009) established a strong positive correlation between financial profitability and use of cleaner production technology. This study determined that use of cleaner production technology resulted in waste minimization, increased productivity, pollution control and eco-efficiency. This created a win-win situation for the firms and the community in general. The firms in the Nigerian pulp and paper industry that engaged in green technology were involved in activities such as change in their production technology, change in raw materials used and recycling. These activities improved the organization's profitability, efficiency and competitiveness.

Previous attempts have been made to prove that “going green” leads to increased profits. A study by Murray et al. (2006) established that adopting environmental management practices did not have any relationship with organizational profitability. Other studies with similar findings included Hart (1997) as well as Schnietz and Epstein (2005). However, a study by King and Lenox (2001) had contrary findings. This study established that complying with environmental regulations and adoption of environmental management strategies had a positive relationship with financial performance of the organization. There are other studies which disagree with this finding such as Wagner et al. (2002) which determined that adopting environmental management strategies was negatively related to financial performance. These conflicting findings prompted the researcher to investigate further from the Kenyan organizations’ what the relationship is between environmental strategies and profitability.

2.4 Conceptual Framework

A conceptual framework is an important component in any research study being undertaken. The conceptual framework in Figure 1 indicates the expected relationship between the independent variables (compliance, energy efficiency, water efficiency, material efficiency, green products and services, pollution reduction and ECO friendly CSR activities) and the dependent variable (Profitability of the organization). The independent variables are seven environmental strategies which can be adopted by firms to influence its financial performance. This model is borrowed from Menguc, Auh and Ozanne (2010) who established that an organization’s environment management strategies can be a means towards achieving revenue and performance objectives of the firm.



Independent Variables

Dependent Variable

Figure 2.1: Conceptual Model on Relationship between Environmental Strategies and Profitability

The study conceptualizes that adoption of various environmental strategies have a positive relationship on firm profitability. The environmental strategies were measured using a five point scale (1 = Very low extent; 2 = Low extent; 3 = Moderate extent; 4 = High extent; 5 = Very high extent). This scale had been previously applied by Menguc et al. (2010) in their study on effect of proactive environmental strategies on sales and profitability of New Zealand manufacturing firms. A previous study by Sharma (2000) had applied similar items and measurement to establish level of proactive environmental strategies application by firms. The rating on these constructs was by CEOs or key managers who had deep understanding of environmental strategies in these organizations.

This study tested the hypothesis that;

1. H_0 : Recycling has a relationship with firm profitability
 H_1 : Recycling has no relationship with firm profitability.
2. H_0 : Environmental auditing has no relationship with firm profitability
 H_1 : Environmental auditing has a relationship with firm profitability
3. H_0 : Implementation of EMS has no relationship with firm profitability
 H_1 : Implementation of EMS has a relationship with firm profitability
4. H_0 : ISO certification has no relationship with firm profitability
 H_1 : ISO certification has a relationship with firm profitability

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

According to Creswell (2009), methodology describes the overall approach undertaken by the study to achieve the set objectives. The research methodology is the roadmap or action plan on how the study is carried out and how the different methods are integrated. Presented in this chapter are the research design, target population, sample and sampling design, methods of data collection and procedures applied to collect data. Further, the chapter presents how validity and reliability of instruments was tested, the data analysis techniques applied and the ethical considerations made.

3.2 Research Design

De Vaus (2001) cited that the purpose of a research design is to ensure that the methods applied and data collected enables the research to answer the questions or achieve the research objectives. Further, Chandaran (2004) observed that research design answers questions regarding the methods used to collect data, sampling technique applied, how research limitations were dealt with and how ethical concerns were managed. The current study applied descriptive survey design. Saunders, Lewis, Adrian and Thornhill (2003) observed that descriptive survey research provides a profile of events, persons or situations as accurately as possible. Descriptive study design is also indicated to be a good approach to depict the relationship that exists between variables. The descriptive study design was applied for the current study as the study sought to establish the relationship that existed between environmental management strategies and profitability of the firms. Further, the design was selected as it enabled the study to have a full description of all the variables under study where there is minimum bias in data collection (Yin, 2006).

According to Ngechu (2004), a descriptive design involves planning, organizing, collection and analysis of data so as to provide information being sought. This design provided a great depth of responses resulting in a better and elaborate understanding of the phenomenon under study. Therefore, the descriptive survey was deemed the best strategy to fulfil the objectives and ensure that the data collected is measurable.

3.3 Target Population

Cooper and Schindler (2003) defined a population in research as the total number of units or elements that the researcher seeks to make some inferences. In the current study, the population was 735 manufacturing firms who are members of KAM as at 2013 and which have offices in Nairobi and the employees in these firms formed the population of the study. The study target population was employees working in three departments; compliance, auditing and finance/accounting departments as they are well versed with the subject under study.

3.4 Sampling

Sampling is depicted by Cooper and Schindler (2003) as the selection of a few members from the population to participate in a study. These few members are selected to represent the whole population in the study as there are practical or technical limitations that would limit the inclusion of the whole population in the study. Sekaran (2003) intimated that a sample is a subset of the population that the researcher is interested in.

The study used stratified random sampling to get the desired sample. Number of employees that the firms had was used to determine the size of the firms. The following sampling frame was used.

Table 3.1: Sampling Frame

Size	No. of firms	Sample size
Small Firms	397	59
Medium Firms	104	28
Large Firms	154	23
Total	735	110

The study thus picked 59 firms from small firms category, 28 firms from the medium firms category and 23 firms from the large firms category to add up to 110 respondents. The sample size was arrived at after using the formula for sample size calculation provided by Fox, Hunn and Mathers (2009) which is as follows;

$$nf = n / (1 + \frac{n}{N})$$

Where;

n_f = desired sample size when the population is less than 10,000,

n = desired sample when the population is more than 10,000,

N = estimate of the target population size.

The estimated sample size when population is more than 10,000 is 384 (Fox et al., 2009). The sample was adjusted based on the target population of 735 to get 110 respondents.

3.5 Data Collection Methods

The study primarily relied on primary data which was qualitative as well as quantitative. Qualitative data sought to describe the qualities/characteristics of the subjects of the study and ascertain the “why” and “why not”. Quantitative data in form of figures was used to show relationship between the variables under study (Marshall and Rossman, 2010). The researcher collected first hand information from the respondents in the selected departments. The researcher used a research questionnaire to collect the primary data from the respondents.

The questionnaire had 4 sections with each section containing set of questions/statements aimed at obtaining specific relevant information. Section A contained questions seeking insight on background information of respondents and their respective firms. The second section, Section B sought information on nature of profitability of the firm. The third section, Section C sought information on environmental strategies. The fourth section, Section D sought insights on the influence of the environmental strategies on profitability. The study also relied on secondary data which was extracted from the accounts records and company files using desk review and literature review from journals and books.

3.6 Data Collection Procedure

The study gathered relevant information from respondents/other sources and ensure that it is accurate, consistent reliable and meets the standards of quality research. Pilot testing of the draft questionnaires was performed to ascertain whether the questionnaires were suitable for data collection. This was aimed to correct any ambiguity, errors or design limitations in the questionnaires before the actual administration. The pilot test was done on 5 respondents in manufacturing firms that were randomly selected. These firms that were utilized in the pilot test were excluded from the main study. Results from the pre testing of the questionnaire were used to make any amendments or corrections in the questionnaire which made it well suited for collecting data.

The adjusted questionnaires were personally administered by the researcher with the help of research assistants. This method enabled the researcher to seek clarifications on issues under study. The researcher obtained permission from the University and the firms before administering the questionnaires.

3.7 Validity and Reliability

Lillis (2006) asserted that the success of a research study depends on the accuracy of data collected. The accuracy of the collected data further relies on the validity and reliability of the instruments used to collect that data. Modell (2009) defined validity as the degree to which the data collected presents the correct measure of the phenomenon under study. Validity of the data collection instrument was achieved by having objective questions included in the questionnaire. This was achieved by pre-testing the instrument that was used to identify and change any ambiguous, awkward, or offensive questions and technique as emphasized by Cooper and Schindler (2003).

Reliability on the other hand refers to a measure of the degree to which research instruments yield consistent results (Kimberlin and Winetrstein, 2008). Reliability also refers to the consistency of measurement (Lillis, 2006). This helped in correcting any ambiguity in the questionnaire and enabled the study collect the relevant information to answer the research questions. The pre-test was conducted to enhance clarity of the questionnaires. Reliability test were performed on the questionnaires variables per section and a Pearson correlation coefficient score of 0.75 was used as a benchmark where questions with inter rating scores below 0.75 was either adjusted or deleted. The items on the questionnaire had a score of at least 0.81 showing strong internal consistencies among the tested items.

3.8 Data Analysis

The filled questionnaires were checked for consistencies and then coded into Statistical Package for Social Sciences (SPSS) software. Quantitative data were first analyzed using descriptive statistics - frequency and percentages. The quantitative data were presented in tables and charts. Further regression tests were performed to ascertain nature of the relationship between environmental strategies and profitability. In order to fit the model, the study used a step-wise regression method where all the variables measuring environmental strategies were entered against the dependent variable. The following model was therefore derived (see appendix III for the SPSS output).

$$Y = a + bX_1 + cX_2 + bX_3 + dX_4 + \varepsilon$$

Where; Y is profitability measured using turnover.

X₁ represents recycling as an environmental strategy

X₂ represents environmental auditing

X₃ represents implementation of EMS

X₄ represents ISO certification

ε is the stochastic error term

a, b, c, and d are constants

Water recycling as an environmental strategy was measured through a five point scale (1 = Very low extent; 2 = Low extent; 3 = Moderate extent; 4 = High extent; 5 = Very high extent). This scale was used to depict the extent to which the given manufacturing company applied that strategy. This measurement was also applied to environmental auditing and implementation of EMS. This measurement was previously applied by Menguc et al. (2010) in their study on effect of proactive environmental strategies on sales and profitability of New Zealand manufacturing firms. ISO certification was measured using the following scale: 0 if the organization was not certified, 1 if the organization was in the process of getting certification and 2 if the organization was certified.

Qualitative data gathered was analyzed based on the themes through a thematic and content analysis. The analysis was based along the main themes as per research questions of the study focusing on issues and patterns emerging from the response. The emerging salient patterns were then discussed. The qualitative data was presented in narrative form.

3.9 Ethical Consideration

The study adhered to ethical research requirements in the data collection and processing. The permission to carry out the study was obtained from Strathmore University and the firms involved. The study ensured that the rights of the participants, informants and respondents are respected. The respondents were involved in the study based on their willingness to inform the study. During data gathering the privacy of individuals was respected and the respondents had a right to withdraw from the study anytime or choose not to respond to certain questions. To ensure that there was no time wasted the research team visited the respondents in their office after securing appointments so as not to unduly interrupt their daily schedules.

The study also ensured confidentiality of the data collected through keeping the data in safe place and also ensuring no unauthorized person handled the questionnaires and the data. Confidentiality was also be enhanced as the names of the participants were not sought. The study also assured the participants that the findings of the study will only be used purely for academic purposes.



CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents the results and findings from the data collected using the questionnaires. The study had the main objective of establishing the the relationship between environmental management strategies and profitability of manufacturing firms in Kenya. The data collected through the questionnaire was analyzed using both descriptive and inferential statistics and results were presented in tables, pie charts and bar graphs.

The study targeted 110 respondents from the sampled manufacturing firms whereby a total of 104 questionnaires were completely and successfully filled in time for data analysis. This represented 94.5% of the total respondents. The response rate was therefore considered appropriate to derive the inferences regarding the objectives of the research.

4.2 General Information

The researcher found it important to establish the general information of the respondents since it forms the basis under which the study can rightfully access the relevant information. The general information presented respondents issues such as designation in the firm, annual turnover of the firm, duration the firm has been in existence and the number employees in the firm.

4.2.1 Respondents Designation

This section sought to find out the respondents work and position in their respective companies. The findings are presented in table 4.1 below.

Table 4.1: Designation of the Respondents

Designation	Frequency	Percent
Accountant/ Finance Officer	63	60.5
Human resource officer	21	20.2
Administrator	9	8.7
Customer service manager	1	1.0
Director/ General manager	3	2.9
Manufacturing/ Production manager	3	2.9
Marketing manager	3	2.9
Policy and process improvement manager	1	1.0
Total	104	100.0

Table 4.1 above shows that majority (60.5%) of the respondents were accountants/ finance officers; 20.2% were human resource officers while 8.7% respondents were administrators. The study further found out that 2.9% of the respondents were director/ general managers, manufacturing/ production managers and marketing managers respectively.

4.2.2 Company Annual Turnover

The study sought to establish the annual turnover of the firms. This could be critical to the study in establishing how the company performed. The results are presented in table 4.2.

Table 4.2: Company Annual Turnover

Annual Turnover (in Ksh)	Frequency	Percent
Up to Kes 50 million	7	6.7
Kes 51 million to 500 million	22	21.2
Kes 501 million to 1 billion	40	38.5
Kes 1.1 billion to 5 billion	24	23.1
Kes 5.1 billion and above	6	5.8
No Response	5	4.8
Total	104	100.0

The study findings shows that 38.5% of the respondents indicated that their firms' annual turnover was Kes 501 million to 1 billion while 23.1% indicated that they their firms had an annual turnover of Kes 1.1 billion to 5 billion. Majority of the firms fell in these two brackets which means that majority of the firms under study had high turnover. On the other hand, 21.2% of the respondents indicated that their firms had an annual turnover of Kes 51 million to 500 million while 6.7% had a low turnover of Kes 50 million and below.

4.2.3 Duration of Firms Existence

The respondents were asked to indicate the duration their company had been in existence. This was critical as the duration of existence would have an effect on the environmental management strategies adopted by the firms, which would further influence the firms' profitability. The results are presented in figure 2.

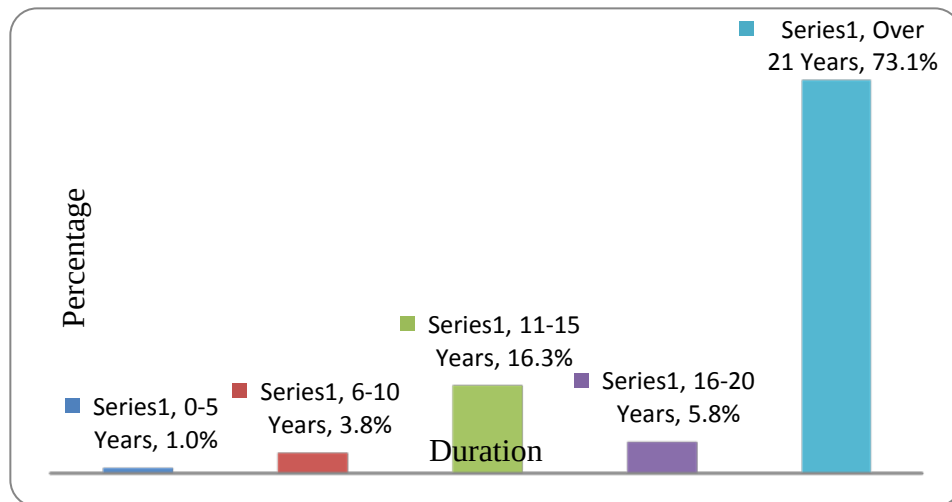


Figure 4.1: Duration of Firms Existence

The findings shows majority of the respondents (73.1%) indicated that their firms had been in existence for over 21 years. This shows that majority of the companies had been in existence for a long duration which means they understood their environment well which also influences the environmental management strategies adopted. On the other hand, 16.3% of the respondents indicated that their firms had been in existence for 11-15 years while 5.8% revealed that their firms had been in existence for 16-20 years. Very few firms had been in existence for less than 10 years.

4.2.4 Number of Employees

In this section, the study sought to find out the number of employees in the manufacturing firms that took part in the study. This was essential since it could determine the size of the firm. The findings are presented in figure 3.

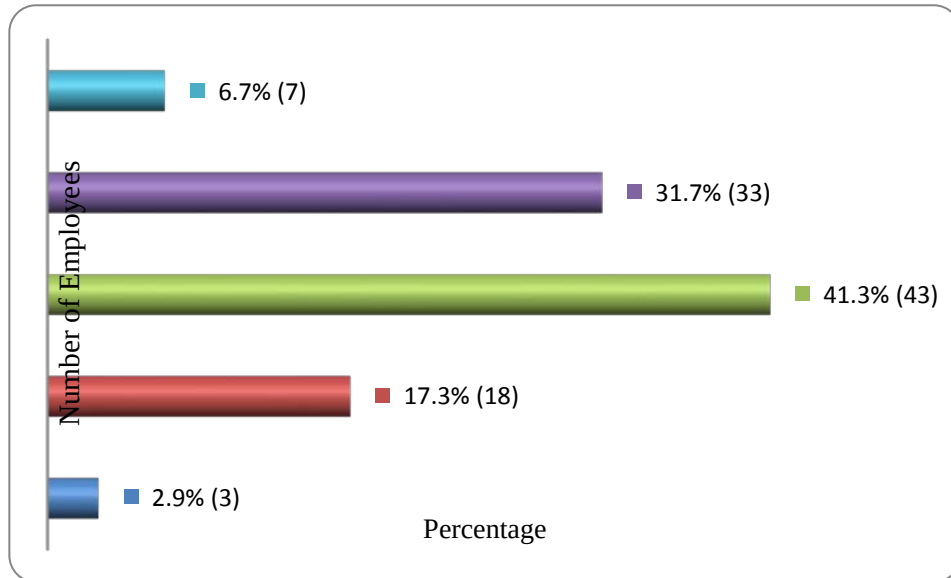


Figure 4.2: Number of Employees in Firms Surveyed

The study found out that most of the manufacturing firms had between 100 and 199 employees as revealed by 41.3% of the respondents. Further 31.7% of the respondents indicated that they had 200-499 employees while 7% had over 500 employees. This implies that majority of these firms were large firms. Only 17.3% had between 50-99 employees while 2.9% had 20-49 employees.

4.2.4 Subsidiary Company

The respondents were asked to indicate whether their company was a subsidiary. This was critical so as to establish whether the parent company influenced the adoption or adherence to environmental strategies. The responses are presented in figure 4.

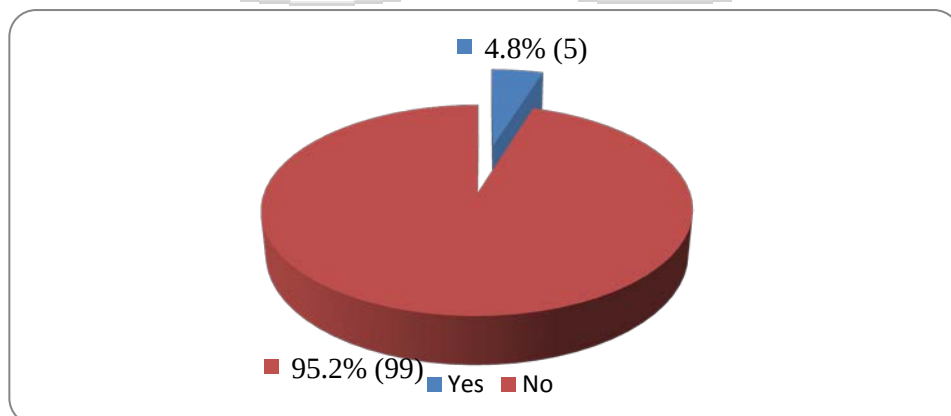


Figure 2.3: Subsidiary Company

Figure 4 show that an overwhelming 95.2% of the respondents indicated that their companies were not subsidiaries. Only 4.8% of the respondents indicated that their companies were subsidiaries.

4.2.5 Adherence to Parent Company Direction

The study sought to establish whether the parent company required adherence from the subsidiaries to already determined strategies. The results are presented in table 4.3.

Table 4.3: Adherence to Parent Company Direction

Responses	Frequency	Percent
Yes	4	3.8
No	100	96.2
Total	104	100.0

Results shows that majority of the respondents (96.2%) indicated that the parent company did not require adherence to already determined strategies. However, 3.8% of the respondents revealed that the parent company required adherence to these strategies.

4.3 Environmental Strategies

In this section the study sought insight on the nature on environment management strategies adopted by surveyed firms.

4.3.1 Environmental Strategy Component

This section sought to determine the extent of adoption of the EMS components within the organization. A five point likert scale was used to interpret the results whereby, the scores “Very Low Extent” and “Low Extent” were represented by mean score, equivalent to 1 to 2.5 on the continuous Likert scale ($1 \leq \text{Low Extent} \leq 2.5$). The scores of ‘moderate extent’ were equivalent to 2.6 to 3.5 on the Likert scale ($2.6 \leq \text{moderate extent} \leq 3.5$). The score of “high extent” and “very high extent” represented were equivalent to 3.6 to 5.0 on the Likert scale which means that the agreement was to a high extent. The results are presented in table 4.4.

Table 4.4: Environmental Strategy Component

Statements	Mean	Std. Deviation
ISO certification	3.6421	1.20209
Training on EMS	3.5490	0.96089
Redesigning of products	3.3786	1.24551
Developing EMS policies	3.3137	1.21035
Environmental auditing	3.3107	1.18014
Documentation of environmental issues	3.3010	1.08316
Implementation of EMS	3.2871	1.14312
Commissioning of EIA	3.2647	1.13388
Investment in green technology	3.1650	1.18898
Documentation of environmental issues	3.1600	1.14345
Undertaking eco friendly activities	3.1068	1.29033
Recognizing eco-friendly innovations	3.0388	1.11954
Production of green products	2.8738	1.39804
Adopting renewable energy	2.8416	1.35449
Waste recycling activities	2.5962	1.36900
Water recycling	2.1584	1.44729

The study shows that majority of the respondents agreed that their firm adopted ISO certification to a great extent; this is shown by a mean score of 3.6421. The respondents further indicated that their firms adopted to a moderate extent components such as training on EMS, redesigning of products, developing EMS policies, environmental auditing, documentation of environmental issues, implementation of EMS, commissioning of EIA, investment in green technology, documentation of environmental issues, undertaking eco friendly activities, recognizing eco-friendly innovations, production of green products, adopting renewable energy and waste recycling activities. This is shown by the mean scores 3.5490, 3.3786, 3.3137, 3.3107, 3.3010, 3.2871, 3.2647, 3.1650, 3.1600, 3.1068, 3.0388, 2.8738, 2.8416 and 2.5962 respectively. However, the respondents indicated that water recycling was adopted to a low extent as shown by a mean of 2.1584 on the likert scale.

4.3.2 Purposes and Aims of Adopting Environmental Strategies

Table 4.5 below shows the respondents extent of agreement on statements on the purposes and aims of adopting environmental strategies by their organizations. A five point likert scale was used to analyse the whereby the mean scores of “strongly disagree” and “slightly disagree” were represented by mean score equivalent to 1 to 2.5 on the Likert scale ($1 \leq \text{disagree} \leq 2.5$). The scores of ‘neutral’ were equivalent to 2.6 to 3.5 on the Likert scale ($2.6 \leq \text{neutral} \leq 3.5$) while the scores of “Slightly agree” and “strongly agree” were represented by a mean score of $3.6 \leq \text{agree} \leq 5.0$ on the likert scale.

Table 4.5: Purposes and Aims of Adopting Environmental Strategies

Purpose/ Aims of EMS	Mean	Std. Deviation
Improve corporate image	4.5392	0.67003
Meet product international standards	4.5000	0.65627
Compliance with regulations	4.4660	0.78983
Improve workplace conditions	4.4563	0.69701
Systematically manage risk	4.4455	0.69965
Reduce wastages in production	4.4175	0.77364
Increase energy use efficiency	4.4118	0.73596
Give back to community	4.3431	0.81441
Reduce litigation	4.3366	0.89752
Get higher profits	4.3000	0.89330
Gain competitive advantage	4.2549	0.84063
Achieve ISO certification	4.2347	0.83482
Increase water usage efficiency	4.1961	0.80885
Open new business avenues	4.1942	0.91885
Changing customer demands	4.1650	0.96097
Shareholders pressure	3.4200	1.18219

Findings show that majority of the respondents agreed that their firms environmental strategies to improve corporate image (4.5392), meet product international standards (4.5000), compliance with regulations(4.4660), improve workplace conditions (4.4563), systematically manage risk (4.4455), reduce wastages in production (4.4175), increase energy use efficiency (4.4118), give back to community (4.3431). The respondents further agreed that they adopted their environmental strategies to reduce litigation, get higher profits, gain

competitive advantage, achieve ISO certification, increase water usage efficiency, open new business avenues and changing customer demands; this is shown by mean scores of 4.3366, 4.3000, 4.2549, 4.2347, 4.1961, 4.1942 and 4.1650 respectively. The respondents were however neutral on whether shareholders pressure was one of the reasons why they adopted the environmental strategies; this is shown by a mean score of 3.4200.

4.4 Environmental Strategies and Profitability

4.4.1 Link between Environmental Strategies and Costs

The study sought to determine the link between environmental strategies and costs. A five point likert scale was used to interpret the results. The mean scores of “strongly disagree” and “slightly disagree” were represented by mean score equivalent to 1 to 2.5 on the Likert scale ($1 \leq \text{disagree} \leq 2.5$). The scores of ‘neutral’ were equivalent to 2.6 to 3.5 on the Likert scale ($2.6 \leq \text{neutral} \leq 3.5$) while the scores of “slightly agree” and “strongly agree” were represented by a mean score of $3.6 \leq \text{agree} \leq 5.0$. The findings are presented in table 4.7.

Table 4.7: Environmental Strategies and Costs

Environmental strategies versus costs	Mean	Std. Deviation
Cost saving from safer workplace conditions	4.2059	0.82460
Cost savings from conservation of natural resources	4.2039	0.86726
Cost reductions associated with reduced emissions	3.9806	0.88540
Eco friendly CSR activities are costly	3.8252	0.82161
High cost of compliance with regulation	3.7767	0.93863
Increased costs due to product redesign	3.6505	0.93629

On the link between the environmental strategies and costs, the study shows that majority of the studies agreed that the environmental strategies enhanced cost saving from safer workplace conditions (4.2059), ensured cost savings from conservation of natural resources (4.2039) and cost reductions associated with reduced emissions. The respondents further agreed that Eco friendly CSR activities were costly, there was high cost of compliance with regulation and increased costs due to product redesign; this is shown by mean scores of 3.8252, 3.7767 and 3.6505 respectively.

4.4.2 Extent Adoption of Environmental Strategies Influences Firm Costs

The respondents were asked to indicate the extent the adoption of environmental strategies influenced firm costs. The results are presented in table 4.9 below.

Table 4.8: Extent Adoption of Environmental Strategies Influences Firm Costs

	Very Low Extent		Low Extent		Moderate Extent		High Extent		Very High Extent	
	F	%	F	%	F	%	F	%	F	%
Increases	3	2.9	18	17.3	46	44.2	32	30.8	5	4.8
Decreases	9	8.7	25	24.0	49	47.1	12	11.5	9	8.7

According to 44.2% of the respondents, the adoption of environmental strategies increased firm costs to a moderate extent, 30.8% indicated that it increased to a high extent while 17.3% revealed that the strategies increased costs to a low extent. On the other hand, most of the respondents (47.1%) revealed that environmental strategies decreased firm costs to a moderate extent; however, 24% indicated that the strategies decreased costs to a low extent while 11.5% indicated to a high extent.

4.4.3 Link between Environmental Strategies and Revenues

In this section, the study sought to show the link between environmental strategies and revenues in in Kenyan manufacturing firms. A scale of 1-5 was used to interpret the results where mean scores of “strongly disagree” and “slightly disagree” were represented by mean score equivalent to 1 to 2.5 on the Likert scale ($1 \leq \text{disagree} \leq 2.5$). The scores of ‘neutral’ were equivalent to 2.6 to 3.5 on the Likert scale ($2.6 \leq \text{neutral} \leq 3.5$) while the scores of “slightly agree” and “strongly agree” were represented by a mean score of $3.6 \leq \text{agree} \leq 5.0$. The findings are presented in table 4.9.

Table 4.9: Environmental Strategies and Revenues

Environmental strategies vs. revenues	Mean	Std. Deviation
Improved public image as a result of CSR and compliance	4.0990	.76818
More sales due to customer satisfaction	3.8431	.80524
Increased revenues from marketing green products	3.8039	.82100
Access to markets with restrictions leads to increased revenues	3.7426	1.09228

The findings shows that majority of the respondents agreed that the adoption of environmental strategies improved public image as a result of CSR and compliance (4.0990), led to more sales due to customer satisfaction (3.8431) and increased revenues from marketing green products (3.8039). Moreover, the respondents agreed that adoption of the environmental strategies enhanced access to markets with restrictions which led to increased revenues; this is shown by a mean score of 3.7426.

4.4.4 Adoption of Environmental Strategies and Firm Revenues

In this section, the study sought to determine the extent to which adoption of environmental strategies has influenced or influences firm revenues. The results are presented in table 4.10.

Table 4.10: Environmental Strategies and Firm Revenues

	Very Low Extent		Low Extent		Moderate Extent		High Extent		Very High Extent	
	F	%	F	%	F	%	F	%	F	%
Increases	14	13.5	13	12.5	34	32.7	36	34.6	7	6.8
Decreases	14	13.5	20	19.2	50	48.1	20	19.2	-	-

Results in table 4.10 shows that 34.6% of the respondents indicated that adoption of environmental strategies increased firm revenues to a high extent while 6.8% further indicated to a very high extent; however, 32.7% indicated that the strategies increased revenues to a moderate extent. On the other hand, 48.1% of the respondents revealed that the environmental strategies decreased revenues to a moderate extent; however, while 19.2% indicated that the environmental strategies decreased revenues to a low extent, a similar account revealed that it decreased to a high extent.

4.4.5 Environmental Strategies and Firm Profitability

The study sought to find out the extent to which environmental management strategies have influenced profitability of the Kenyan manufacturing firms. The results are presented in table 4.11.

Table 4.11: Environmental Strategies and Firm Profitability

	Very Low Extent		Low Extent		Moderate Extent		High Extent		Very High Extent	
	F	%	F	%	F	%	F	%	F	%
Increases	11	10.6	9	8.7	44	42.3	40	38.5	-	-
Decreases	12	11.5	21	20.2	55	52.9	16	15.4	-	-

On the extent to which environmental management strategies have influenced profitability, findings shows that while 42.3% of the respondents indicated that these strategies increased profitability to a moderate extent, 38.5% indicated that they had increased profitability to a high extent.

4.5 Relationship between Environmental Management Strategies and Profitability

Apart from descriptive further statistical tests were performed to help understand the relationship between environmental management strategies and profitability.

4.5.1 Data and Measures

The study first intended to use ROI as a proxy for profitability. During data collection, it was realised that most of the organisations were not willing to provide information on their levels of profitability. Since most of them are not listed companies, none of them is compelled to provide that information nor are they available to the public. Therefore, with lack of information to calculate the ROI, it was decided that another measure be used to proxy for profitability. To this end, two measures were selected from the questionnaire.

The first measure was revenues. There are several other studies that have uses sales/revenues to proxy for performance and therefore the present study finds it a very valuable proxy for profitability. Secondly, a question in the questionnaire directly asked whether the respondents believed that environmental management strategies increased or decreased profitability of their firms. Therefore, this question was used as a second measure of profitability. Thus, two dependent variables are used – revenues and increase/decrease in profitability. But upon a preliminary analysis, the turnover model was found to be a better model and therefore profitability in this section has been measured using turnover. The model is shown in chapter 3.

4.5.2 Regression Analysis

An OLS regression analysis was used to perform this analysis in SPSS. The variables were selected into the model using stepwise method where all the variables were entered into the model for analysis. Table 4.12 – 4.14 show the results for the relationship between environmental management strategies and turnover. As shown in Table 4.12, the study found that the variables had an overall moderate effect on turnover ($r = .488$) with an R^2 value of

.238 which suggests that the environmental management strategies used in the model accounted for 23.8% of the variance in turnover.

Table 4.12: Turnover Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.488 ^a	.238	.200	.82195

a. Predictors: (Constant), Env. Auditing, ISO, Recycling, Implementation

Table 4.13 shows the ANOVA results. As shown by sum of squares, the regression explained less of the variation in the model (regression SS = 17.090, residual SS = 54.724). The model itself was significant in explaining the relationship between environmental strategies and turnover ($F = 6.324$, $p = .000$).

Table 4.13: Turnover Model ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.090	4	4.272	6.324	.000 ^b
	Residual	54.724	81	.676		
	Total	71.814	85			

a. Dependent Variable: Turnover

b. Predictors: (Constant), Env. Auditing, ISO, Recycling, EMS Implementation

From the coefficients in Table 4.14 below, the results show that all of the environmental strategies were significant at 5% level of confidence as regards their effects on turnover. The results show that implementation of EMS had a positive and significant impact turnover ($B = .276$, $p = .029$), water recycling had a positive and significant impact on turnover ($B = .19$, $p = .029$), ISO certification had a positive and significant effect on turnover ($B = .163$, $p = .043$), and environmental auditing had a negative and significant effect on turnover ($B = -.381$, $p = .001$).

Table 4.14: Turnover Model Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.412	.359		6.719	.000
Implementation of EMS	.276	.124	.342	2.224	.029
Water Recycling	.179	.076	.287	2.345	.021
ISO certification	.163	.080	.210	2.051	.043
Environmental Auditing	-.381	.105	-.488	-3.616	.001

a. Dependent Variable: Turnover

The resultant regression equation was;

$$Y = 2.412 + 0.276X_1 + 0.179X_2 + 0.163X_3 + -0.381X_4$$

Where; Y is profitability measured using turnover.

X_1 represents water recycling as an environmental strategy

X_2 represents environmental auditing

X_3 represents implementation of EMS

X_4 represents ISO certification

The turnover is provided in million of shillings



CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter is a synthesis of the entire thesis and contains summary of findings, conclusions arrived at, policy recommendations and recommendations for further studies.

5.2 Summary of Findings

The study sought to fulfill four specific objectives. These were: To investigate nature of environmental management strategies in Kenyan manufacturing firms; To assess the effect of environmental management strategies on revenues in Kenyan manufacturing firms; To assess the effect of environmental management strategies on costs in Kenyan manufacturing firms, and; To assess the relationship between environmental management strategies and profitability in Kenyan manufacturing firms.

On the nature of environmental management strategies in Kenyan manufacturing firms, the study found out that majority of the Kenyan manufacturing firm had adopted ISO certification to a great extent. However, environmental components such as training on EMS, redesigning of products, developing EMS policies, environmental auditing, documentation of environmental issues, implementation of EMS, commissioning of EIA, investment in green technology, documentation of environmental issues, undertaking eco-friendly activities, recognizing eco-friendly innovations, production of green products, adopting renewable energy and recycling activities were adopted to a moderate extent; while water recycling strategy components were only adopted to a low extent. These study findings agree with results from a study by Carroll & Shabana (2010) that indicated that organizations are increasingly adopting environmental strategies in their corporate strategies to satisfy their various stakeholders. The study also agrees with findings by Montiel (2008) whose study established that organizations have increased their participation in environmental initiatives for a variety of reasons including enhancing corporate image, improving their competitiveness and enhancing their bottom-line. This concurs with the findings of the current study that majority of the manufacturing firms adopted the environmental strategies to improve corporate image, meet product international standards, compliance with regulations, improve workplace conditions, systematically manage risk, reduce wastages in production,

increase energy use efficiency, give back to community. The other purposes include to reduce litigation, get higher profits, gain competitive advantage, achieve ISO certification, increase water usage efficiency, open new business avenues and changing customer demands. The study however found out that shareholders pressure was not a major reason why these firms adopted the environmental strategies.

On the link between environment management strategies and revenues, the study established that 34.6% of the respondents indicated that adoption of environmental strategies increased firm revenues to a high extent while 6.8% indicated to a very high extent. However, 32.7% indicated that the strategies increased revenues to a moderate extent. On the other hand, 48.1% of the respondents revealed that the environmental strategies decreased revenues to a moderate extent while 19.2% indicated that the environmental strategies decreased revenues to a low extent, a similar count revealed that it decreased to a high extent. These findings agree with results from a study by D'Mello et al. (2011) in US which established that most of the large US multinationals engage in environmental sustainability efforts. The study established that of the more than 80% that engage in green projects, almost all of them report an increase in corporate reputation due to those efforts while most others report that their market share and revenues have improved. The current study findings also concur with findings from a study by Mattei (2010) which established that having environmental strategies is related with competitive advantage, increasing market share and higher sales revenues.

On the link between the environmental strategies and costs, the study found out that the environmental strategies enhanced cost saving from safer workplace conditions, ensured cost savings from conservation of natural resources and cost reductions associated with reduced emissions. However, the respondents agreed that eco friendly CSR activities were costly, there was high cost of compliance with regulation and increased costs due to product redesign. According to most of the respondents, adoption of environmental strategies increased firm costs to a moderate extent; the respondents also revealed that environmental strategies decreased firm costs to a moderate extent. These results agree with findings from a study by Bohdanowicz (2005) who determined that the most significant benefits from environmental management strategies were reduction of operating costs, demands from customers and improved hotel image. Similar findings are found in a study by Stead & Stead

(1995) who established that organizations are motivated to implement production focussed environmental strategies due to the need to reduce costs.

A regression analysis was carried out to examine the relationship between environmental management strategies and profitability of firms. The results showed that all the four environmental strategies had a significant influence on turnover. Specifically, implementation of EMS, water recycling and ISO certification had a positive and significant effect on turnover while environmental auditing had a significant negative effect on turnover. The model was statistically significant and the four variables explained 23.8% of the variance in turnover. These findings agree with a study in the Nigerian paper and pulp industry by Adelegan et al. (2009) which established that there is a strong positive correlation between financial profitability and use of cleaner production technology. The current study findings also agreed with findings from a study by King and Lenox (2001) who established that complying with environmental regulations and adoption of environmental management strategies had a positive relationship with financial performance of the organization. However, the current study results disagreed with results from a study by Wagner et al. (2002) which determined that adopting environmental management strategies was negatively related to financial performance.

5.3 Limitations of the Study

Empirical research on environmental management is available largely for developed nations and very few is available for countries with similar context to Kenya. This research is therefore one of the very few initial research works with respect to understanding how environmental issues are affecting Kenyan corporate life. Hence, the extent of prior research literature available on environmental management strategies by Kenyan companies is limited. The main limitation of the study pertained to collection of data particularly on profitability of the firms. The study was not able to obtain relevant information to enable calculation of Return on Investments (ROI). The study resorted to other data measures as explained in section 4.5.1. The population and sample size considered for this research is restricted to the manufacturing sector and thus it is not possible to generalize and conclude for diverse sectors of Kenyan companies. There is scope for doing further theoretical and action research in this field.

5.4 Conclusions

In light of the results and limitations the study concludes that the environmental management strategies adopted in Kenyan manufacturing firms include ISO certification, training of employees on EMS, redesigning of products, developing EMS policies for their firms, environmental auditing, documentation of environmental issues, implementation of EMS, commissioning of EIA, investment in green technology, documentation of environmental issues and undertaking eco-friendly activities which includes recognizing eco-friendly innovations, production of green products and adopting renewable energy and recycling activities.

The study concludes that the environmental strategies enhanced cost saving from safer workplace conditions, ensured cost savings from conservation of natural resources and cost reductions associated with reduced emissions. However, strategies such as Eco friendly CSR activities are costly and the cost of compliance with regulation and product redesign are high.

Based on the regression results turnover was positively influenced by implementation of EMS, ISO certification, and water recycling while it was negatively affected by environmental auditing. Thus, while EMS, ISO certification and recycling have benefited the organisations, environmental auditing had not.

5.5 Policy Recommendations

The study recommends that there is need for increase compliance on environmental regulations and promote adoption of environmental strategies so as to increase revenue for the firms, improve corporate image, increase efficiency in production by reducing wastage thus achieving ISO certification and gaining competitive advantage.

The study also recommends that the government should give incentives to companies adopting the environmental management strategies and also provide more information through research and case studies, so as to guide the firms adopting these strategies.

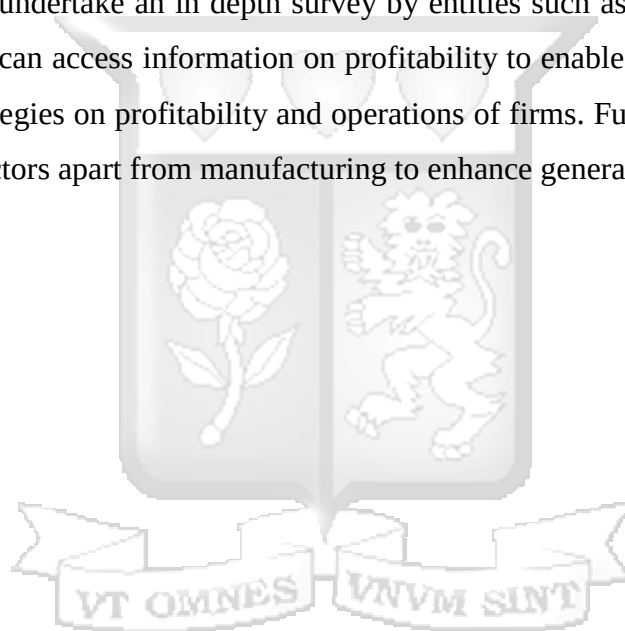
The companies also need to allocate more equate resources and employ services of environmental consultants to guide the firms in adopting and implementing the environmental management strategies. The management commitment is also critical in the successful implementation of these strategies.

While the study finds significant relationship between some of environmental management strategies and profitability or turnover, it is important that these strategies be incorporated into the manufacturing and service process of all organisations as they tend to have a positive impact on the turnover (sales) of organisations. The environmentally conscious consumers will be instrumental in driving the revenues up.

Government agencies should give tax credit to organizations that have adopted environmental management strategies and those which comply with environmental laws of the land given the need for corporate consciousness in dealing with environmental matters.

5.6 Suggestions for Further Studies

There is also need to undertake an in depth survey by entities such as Kenya Association of Manufacturers which can access information on profitability to enable ascertaining of effects of environmental strategies on profitability and operations of firms. Further studies should be conducted in other sectors apart from manufacturing to enhance generalization of the results.



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APPENDICES

Appendix I: Introductory Letter

Dear Respondent,

REF: REQUEST FOR RESEARCH DATA

I am a postgraduate student in the School of Graduate Studies at Strathmore University majoring in Environmental Accounting. I am conducting a study on the relationship between environmental management strategies and profitability in Kenyan manufacturing firms. The information to be collected is purely for academic purposes and thus will be treated with the utmost confidence it deserves.

Business gains legitimacy in society by engaging in environmental sustainable approaches in a bid to demonstrate commitment to greater environmental responsibility. Despite being costly, it is advocated that these environmental management strategies bring a number of benefits to the business. However, after all is said and done, businesses primarily exist to make profit for their shareholders. This study therefore seeks to ascertain if indeed environmental management strategies lead to increased profits as advanced by literature.

As member of the Kenya Association of Manufacturers (KAM), your company is one of the organizations in the population of the study. As such, your contact information was listed in the current edition of the Kenya Manufacturers and Exporters Directory 2013. I therefore request that you provide the necessary information for this study.

The survey will take approximately twenty minutes to complete, and responses will be received until 11th April 2014.

Yours faithfully,

Ms. Jean Onyango

Appendix II: Research Questionnaire

SECTION A: BACKGROUND INFORMATION

1. Name of the organization: _____
2. What is your designation in the firm? _____
3. What is the current annual turnover of the firm?
Upto Kshs 50 million ☐ Ksh 51 million to Ksh 500 million ☐
Ksh 501 million to 1 billion ☐ Ksh 1.1 billion to 5 billion ☐
Ksh 5.1 billion and above ☐
4. How long has your firm been in existence?
0-5 Years ☐ 6-10 Years ☐ 11-15 Years ☐
16-20 Years ☐ Over 21 Years ☐
5. How many employees does your firm have?
5-19 Employees ☐ 20-49 Employees ☐
50-99 Employees ☐ 100-199 Employees ☐
200-499 Employees ☐ Over 500 Employees ☐

SECTION B: FIRM PROFITABILITY

6. Kindly give profit before tax and the total assets. The study uses year 2008 as base years as it is two years after Environmental Impact Assessment Act Regulations (2006).

Return On Investment = Profit before Tax/Total Assets

Year	Profit before Tax	Total Assets	ROI
2005			
2006			
2007			
2008			
2009			
2010			
2011			

SECTION C: ENVIRONMENTAL STRATEGIES

7. The table below contains components of environmental management strategies. Environmental strategies refer to a firm's selection of the width and depth of environmental-friendly practices and activities. Rate the extent of adoption of the environmental strategies components within your firm using the given scale. (The scale tests extent of adoption. The scale will enable interpretation using weighted means where Very Low Extent represents a score of 1; Low Extent a score of 2; Moderate Extent a score of 3; High Extent a score of 4 and High Extent a score of 5)

Environmental Strategy Component	Very Low Extent	Low Extent	Moderate Extent	High Extent	Very High Extent
Employee training on EMS					
Documentation of environmental issues					
Developing EMS policies and manuals					
Implementation Environmental Management Systems					
Commissioning of Environmental Impact Assessments					
Investment in cleaner/green technology					
Adopting renewable energy					
Water recycling					
Redesigning of products and/or processes to reduce pollution					
Production of green products and services					
Recognizing, Implementing and rewarding eco friendly innovations					
Environmental auditing					
Documentation of environmental issues					
Waste recycling activities					
Undertaking eco friendly CSR activities such as tree planting, carbon reduction & offset schemes etc.					
Others (specify):					

8. Is your organization ISO 14001 certified?

Yes ☐

In The process ☐

No ☐

SECTION D: ENVIRONMENTAL STRATEGIES AND PROFITABILITY

9. Table below contains varied environmental strategies components. Kindly indicate the costs attributed to the environmental strategies components. For monetary costs give figure in Kshs and for non-monetary cost explain briefly.

Environmental Strategy Components	Cost
Employee training on EMS	
Documentation of environmental issues	
Developing EMS policies and manuals	
Implementation of Environmental Management Systems	
Commissioning of Environmental Impact Assessments	
Investment in cleaner/green technology	
Adopting renewable energy	
Water recycling	
Redesigning of products and/or processes to reduce pollution	
Production of green products and services	
ISO 14001 certification	
Recognizing, Implementing and rewarding eco friendly innovations	
Environmental auditing	
Documentation of environmental issues	
Waste recycling activities	
Undertaking eco friendly CSR activities such as tree planting, carbon offset schemes etc.	
Others (specify):	

10. The following statements relate to the link between environmental strategies on one hand and costs on the other. Rate them as per the given scale (Similar to the Table in question 8) as per the experience in your firm.

Environmental strategies versus costs	Strongly Disagree	Slightly Disagree	Neutral	Slightly Agree	Strongly Agree
There is high cost of compliance with regulation					
There are cost savings from safer workplace conditions					
There are cost reductions associated with reduced emissions					
There are cost savings from conservation of natural resources (energy and raw material)					
There are increased cost as a result of process/product redesign					
Eco friendly CSR activities are costly					
Other: (Specify)					

11. a) To what extent would you say adoption of environmental strategies have influenced/influences firm costs?

Environmental strategies versus cost	Very Low Extent	Low Extent	Moderate Extent	High Extent	Very High Extent
Increases					
Decreases					

b) Describe briefly: _____

13. Table below contains varied environmental strategies components. Kindly indicate the revenues/benefits attributed to the EMS components. For monetary revenue give figure in Kshs and for non monetary benefits explain briefly.

Environmental Strategy Components	Revenues/Benefits
Employee training on EMS	
Documentation of environmental issues	
Developing EMS policies and manuals	
Implementation Environmental Management Systems	
Commissioning of Environmental Impact Assessments	
Investment in cleaner/green technology	
Adopting renewable energy	
Water recycling	
Redesigning of products and/or processes to reduce pollution	
Production of green products and services	
ISO 14001 certification	
Recognizing, Implementing and rewarding eco friendly innovations	
Environmental auditing	
Documentation of environmental issues	
Recycling activities	
Undertaking eco friendly CSR activities such as forestation	
Others (specify):	

14. The following statements relate to the link between environmental strategies on one hand and revenues on the other. Rate them as per the given scale (Similar to the Table in question 8) as per the experience in your firm.

Environmental strategies vs. revenues	Strongly Disagree	Slightly Disagree	Neutral	Slightly Agree	Strongly Agree
Increased revenues from marketing green products and services					
Access to markets with environmental restrictions leads to increased revenues					
More sales due to customer satisfaction					
Improved public image as a result of CSR and Compliance thus higher sales					
Other: (Specify)					

15. a) To what extent would you say adoption of environmental strategies have influenced / influences firm revenues?

Environmental strategies vs. revenues	Very Low Extent	Low Extent	Moderate Extent	High Extent	Very High Extent
Increases					
Decreases					

- b) Describe briefly:

16. a) To what extent would you say adoption of environmental strategies have influenced/ influences overall firm profitability?

Environmental strategies vs. profitability	Very Low Extent	Low Extent	Moderate Extent	High Extent	Very High Extent
Increases					
Decreases					

b) Describe briefly: _____

17. a) Does your firm have a framework within which benefits derived from implementing environmental strategies can be measured? Yes [] No []

b) If yes in (a) above, describe the measurement framework briefly:



Appendix III: Stepwise Regression SPSS Output

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.372 ^a	.139	.128	.86010
2	.435 ^b	.189	.168	.84000
3	.507 ^c	.257	.227	.80939
4	.544 ^d	.296	.258	.79296

a. Predictors: (Constant), Recycling
b. Predictors: (Constant), Recycling, Env. Auditing
c. Predictors: (Constant), Recycling, Env. Auditing, EMS Implementation
d. Predictors: (Constant), Recycling, Env. Auditing, EMS Implementation, ISO certification

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.286	1	9.286	12.552	.001 ^b
	Residual	57.702	78	.740		
	Total	66.988	79			
2	Regression	12.656	2	6.328	8.968	.000 ^c
	Residual	54.332	77	.706		
	Total	66.988	79			
3	Regression	17.199	3	5.733	8.751	.000 ^d
	Residual	49.789	76	.655		
	Total	66.988	79			
4	Regression	19.828	4	4.957	7.883	.000 ^e
	Residual	47.159	75	.629		
	Total	66.988	79			

a. Dependent Variable: Turnover
b. Predictors: (Constant), Recycling
c. Predictors: (Constant), Recycling, Env. Auditing
d. Predictors: (Constant), Recycling, Env. Auditing, EMS Implementation
e. Predictors: (Constant), Recycling, Env. Auditing, EMS Implementation, ISO Certification