

**DETERMINANTS OF IMPLEMENTATION OF
ENVIRONMENTAL MANAGEMENT STRATEGIES OF PUBLIC
ORGANIZATIONS IN ROAD CONSTRUCTION SECTOR IN
KENYA.**

(CASE OF KENYA NATIONAL HIGHWAYS AUTHORITY)

BY

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D53/CTY/PT/23296/2011

**A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN
PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF
THE DEGREE MASTER OF BUSINESS ADMINISTRATION OF
KENYATTA UNIVERSITY,**

NOVEMBER, 2013

DECLARATION

This research project is my original work and has not been submitted for a degree or any other award in any other University.

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DEDICATION

To my beloved late father, mwalimu Gilbert Nyatwang'a Ondwari who formed my approach to life. You remain the fountain of my inspiration. Rest in peace tata.

To God Almighty who gives me the strength to do all things in Christ Jesus.

ACKNOWLEDGEMENTS

I wish to express my gratitude to my supervisor Mr. Shadrack Bett who took his precious time to give me timely professional advice, encouragement, stimulating suggestions and above all his persistent interest in the research. I likewise wish to thank all the lecturers who have helped, guided, prepared and equipped me with the necessary skills to write this research project.

My sincere thanks go to loving wife Asenath who bore the blunt of lonely nights and attention when I was buried into studies. Thank you dear for your love and understanding. You added value to my project through your constructive critique of the project document. I also take this moment to thank my dear parent Mama Doris for molding me during my formative life stages. I appreciate my father-in-law, mother-in-law and grandmother for their ceaseless prayers.

I would like to thank my fellow students: Japheth, Aremo, Eunice, Odeyo, Mtalaki, Misiani, Sheila, Asetto, Mutoro and Uluma for your company, encouragement and advice.

My special thanks to the Director General, Kenya National Highways Authority for granting me permission to collect data on on-going road projects and to the respondents particularly my fellow staff mates at Kenya National Highways Authority who took time to give the responses to the questionnaire.

Finally glory and honour to Almighty God for showering me with His mighty blessings during the entire MBA process.

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ACRONYMS AND ABBREVIATIONS

ACTS	African Centre for Technology Studies
BSC	Balance Score Card
CEMP	Contractor Environmental Management Plan
EIA	Environmental Impact Assessment
EA	Environmental Audit
EMCA	Environmental Management Coordination Act OF 1999
EMP	Environmental Management Plan
EMS	Environ
ILO	International Labour Organization
KeNHA	Kenya National Highways Authority
NEMA	National Environmental Management Authority
MBA	Master of Business Administration
PESTEL	Political, Economic, Social, Technological, Environmental and Legal
RAP	Resettlement Action Plan
RDT	Resource Dependency Theory
ROK	Republic of Kenya
SIA	Social Impact Assessment
SWOT	Strength, Weakness, Opportunities, Threats
UNCED	United National Conference on Environment and Development
UNEP	United Nations Environmental Program
WCED	World Commission on Environment and Development

OPERATIONAL DEFINITIONS OF TERMS

Environment- includes the physical factors of the surroundings of human beings including land, water, atmosphere, climate, sound, odour, taste, the biological factors of animals and plants and the social factor of aesthetics and includes both the natural and the built environment;

Environmental Impact Assessment- means a systematic examination conducted to determine whether or not a programme, activity or project will have any adverse impacts on the environment;

Environmental Management Plan- a site-specific plan developed to ensure that all necessary measures are identified and implemented in order to protect the environment and comply with environmental legislation.

Environmental Management Strategies - They are activities aimed at mitigating negative environmental impacts during road construction. They include activities like: rehabilitation of quarry sites, soil erosion control measures, tree planting & revegetation, soil & water pollution control measures, dust control, noise pollution controls and proper solid waste management among others.

Sustainable development- means development that meets the needs of the present generation without compromising the ability of future generations to meet their needs by maintaining the carrying capacity of the supporting ecosystem;

Strategy implementation-involves the use of organizational design, the process of deciding how a company should create, use and combine organizational structure, control systems and culture to pursue a business model successfully

Organizational structure- assigns employees to specific value creation tasks and roles and specifies how these tasks and roles are to be linked together in a way that increases efficiency, quality innovation and responsiveness to customers-the distinctive competencies that build competitive advantage

Organizational culture- specific collection of values, norms, beliefs, and attitudes that are shared by people and groups in an organization and that control the way they interact with each other and with stakeholders outside the organization

ABSTRACT

Corporate strategy has been driven by different forces in the past, by production pressures, personnel pressures, and more lately by information pressures. This decade as well as the next shows clear signs of corporate strategy being driven by environmental pressures. Implementation of environmental management strategies is one of mechanisms that have been developed by organizations to enable them manage their activities.

The aim of study was to investigate the determinants of implementation of environmental management strategies of public organizations in road construction sector in Kenya, Case of Kenya National Highways Authority. The objectives were to find out how project organizational structure and supervision, financial resources, environmental legislation and training / education of road construction staff affects implementation of Environmental Management strategies.

The research design used in this project was descriptive survey. The target population for the study was sixty (60). The researcher took a complete census as the target is small. At the time of the study there were 20 ongoing road construction projects. One Project Engineer, One Resident Engineer and One Site Agent from each was chosen as a respondent. This gave a total of 60 respondents. Out of the 60, only 42 responded to the study constituting 70% of the total population. This is an adequate response rate and could therefore be used as a basis for conclusions.

The study used primary data collected through the use of a structured questionnaire consisting of both closed and open-ended questions. The data collected was analyzed using descriptive statistics and the findings presented in tables and graphs.

The study established that project organizational structure and environmental legislation have not negatively affected the implementation of Environmental Management strategies of Kenya National Highways Authority road construction projects while inadequate financial resources, inadequate environmental supervision and training and education of road construction staff have negatively affected the implementation of Environmental Management strategies.

There is need for KeNHA to include environmental management strategies in the bill of quantities (BOQ) during contract documentation, dedicate adequate financial resources in project budget to be used in implementation of environmental management strategies, make environmental supervision part of the road construction work program in all the KeNHA road projects and ensure that the personnel involved in road project management are adequately trained in environmental management.

CHAPTER ONE

INTRODUCTION

This chapter is the introduction to the study. The contents of this chapter include: background to the problem, statement of the problem, research objectives, research questions, significance of the study, limitation of the study and the scope of the study.

1.1 Background to the Problem

Clayton and Bass (2009) noted that the economy and society are intimately dependent upon the health of the environment where environmental assets such as fertile soils, clean water, biomass and biodiversity yield income, offer safety nets for the poor, maintain public health, and drive economic growth. Conversely, environmental hazards like pollution, environmental damage, and climate change – all threaten livelihoods and development. The environment is intrinsically linked to economic development, providing natural resources that fuel growth and ecosystem services that underpin both life and livelihoods.

According to Najab and Runnalls (2007) recent global business and economic activities have strengthened the concerns to address the environmental effects of their operations. Two sources of pressure are responsible for this attitudinal change in business behavior of various industries. Firstly, the availability of natural resources could constrain business operations, affect market processes and even threaten the global environment. Secondly, the various stakeholders

are now more concerned about the environmental impacts of industrialization. Issues like global warming, water scarcity, effect of toxic chemicals on human's health, extinction of animal species and many others, increasingly influence how companies and society function. Companies, who best meet these goals and find solutions to these challenges, will have the competitive business advantages.

A primary concern of most businesses now is how to manage their environmental impacts effectively and efficiently. For many industries, environmental values are now becoming an integral part of their corporate cultures and management processes (UN Global Impact, 2009).

Hutchinson C, (1992) noted that industries today faces a number of strategic options when faced with environmental issues and managers need to decide how environmental concerns should be integrated into their corporate strategies. Managerial perceptions of environmental risks and market opportunities determine the level of integration of environmental issues, which in turn, determines the range of corporate responses. Industries can be reactive in their strategies by complying with existing regulation or can follow a more proactive strategy of developing competitive advantage through environmental initiatives.

According to Welford (1992), there is need for the development of environmental management strategies which promote quality and a

commitment by the management as well as the employees to environmental issues. This would impact across all levels of business and would be a necessary step in the achievement of sustainability in businesses.

Kenya National Highways Authority (KeNHA) was set up by the Kenya Roads Act, 2007 and mandated to construct, manage and operate the national road network that is, Class A, B and C roads. The inception of KeNHA was part of the wider reforms to improve the running of the roads sub sector that included defining clear mandates for every agency involved in the sector, establishing Authorities with specific focus on roads management and a need to manage road matters in a business-like manner so as to ensure greater returns on investment.

1.2 Statement of the Problem

Firms have an obligation not only to formulate appropriate plans or strategies but also to implement such plans or strategies successfully. In the current business scenario, the formulation and implementation of strategies related to the environment is key in helping firms meet their objectives and develop competitive advantage.

For agencies responsible for road construction to meet the objectives of environmental conservation and protection, sustainable development has to be achieved. There is evidence of poor environmental management characterized by abandoned quarry sites, soil erosion, devegetation and soil pollution among others. This therefore requires appropriate strategies to manage the impacts of

construction activities on the environment. Such strategies need to be environmentally non-degrading, technically appropriate, economically and ecologically viable and socially acceptable.

Gabor, et al (2005) did research on theoretical empirical insights on the increasing role of environmental management. Their research focused on what motivates organizations in introducing environmental management in their business operations. They did not look at the factors affecting the implementation of environmental management strategies.

In his study, Jobst (1998) noted that Environmental Management in European Companies concentrated in eco-entrepreneurship strategies such as Recycling, Reducing Pollution, Developing and Diffusing Water-Borne Coating Systems, Eco-Controlling, Eco-Auditing among others. The study did not establish the factors affecting the success of these strategies.

Wamicha and Mwanje (2000) noted that the Environmental Management Plans have not worked in Kenya due to lack of participatory management of natural resources, conflicts in resource utilization, poverty problem, demoralized professional among others. This study is more general as it is not specific to road construction industry.

The factors that could be attributed to unsuccessful or successful implementation of environmental management strategies during road construction may include project organizational structure and supervision, financial resources, environmental legislation and training and education of

road construction staff among others. It is against this background that the purpose of this study was to investigate the determinants of implementation of environmental management strategies of public organizations in road construction sector in Kenya, Case of Kenya National Highways Authority

1.3 Research Objectives

This study sought information to address the following objectives.

1.3.1 Overall objective

The overall objective of this study is to investigate the determinants of implementation of environmental management strategies of public organizations in road construction sector in Kenya, Case of Kenya National Highways Authority.

1.3.2 Specific objective

The specific objectives of this study are:

1. To find out how project organizational structure affects implementation of Environmental Management strategies of Kenya National Highways Authority road construction projects.
2. To establish the extent to which financial resources affects implementation of Environmental Management strategies of Kenya National Highways Authority road construction projects.
3. To determine the relationship between environmental legislation and implementation of Environmental Management strategies of Kenya National Highways Authority road construction projects.

4. To investigate how training / education of road construction staff affects implementation of Environmental Management strategies of Kenya National Highways Authority road construction projects.

1.4 Research Questions

The research questions this study sought to answer are:

1. How does project organizational structure affect implementation of Environmental Management strategies of Kenya National Highways Authority road construction projects?
2. How do financial resources affect implementation of Environmental Management Strategies of Kenya National Highways Authority road construction projects?
3. What is there a relationship between environmental legislation and implementation of Environmental Management Plans of Kenya National Highways Authority road construction projects?
4. How does training / education of road construction staff affect implementation of Environmental Management strategies of Kenya National Highways Authority road construction projects?

1.5 Significance of the Study

The study is intended to contribute to better management in the road construction industry and also aims to study the factors that affect

implementation of environmental management strategies during road construction.

This study will benefit top management in Kenya National Highways Authority to understand issues of environmental management and in developing appropriate mechanism to effectively implement environmental management strategies during road construction. The result of this will help in mitigation of impacts of road construction to the environment and reduction of reputational risks.

To the Government of Kenya, the study will assist the Ministry of Roads in formulation of appropriate environmental policies and guidelines in road construction.

The research findings will assist other stakeholders and donors in road construction industry like contractors and the general public to conserve and utilize the environment sustainably.

This research will add to the body of knowledge on environmental management strategy implementation by assisting other researchers in the field of environment to borrow ideas which can be replicated in other industries or points of reference.

1.6 The Scope of the Study

The study is on determinants of implementation of environmental management strategies of public organizations in road construction sector in Kenya, case of

Kenya National Highways Authority. It focused on the on-going class A, B and C roads projects which fall under Kenya National Highways Authority. The roads are being constructed in various parts of Kenya. The investigation was only on implementation of Environmental Management strategies of each road project.

In terms of subject matter, this study investigated how project organizational structure, financial resources, environmental legislation and training of road construction staff and how this affect implementation of Environmental Management strategies in ongoing Kenya National Highways Authority road construction projects.

The researcher only sought information from officers involved in road construction management. This included road Project Engineer (PE), Resident Engineer (RE) and Contractor Site Agent (SA). A complete census was done as the target was small.

1.7 Limitations of the study

Time was a limiting factor. The researcher is in full time employment and therefore did not have adequate time especially in the collection of data. Equally, the project management team to whom the questionnaires were directed is a very busy category and did not have adequate time at their disposal to adequately fill the questionnaire.

The unwillingness of the respondents to supply the right response was another limiting factor. The respondents were suspicious that such study could expose their shortcomings. Equally the respondents especially the Site Agents were jittery about exposing their identity for fear that their employees would not be comfortable with the information they gave. This therefore resulted to non-response rate as out of the 60 respondents, 18 did not respond (i.e. 30%).

Limited resources on the part of the researcher were another limitation. The research lacked adequate funding for conducting the research.

CHAPTER TWO

LITERATURE REVIEW

This chapter reviews literature related to this study. The purpose of this Chapter is to present a review of an existing body of knowledge which is of relevance to this research. The Chapter covers the following area: introduction to literature review, past studies done in the area, critical review, summary of the gaps to be filled by the study and the conceptual framework. The Literature used for identification of constructs is based on published articles in peer reviewed journals and books.

2.1 Introduction to Literature Review

The purpose of the literature review is to establish the state of conceptual understanding and knowledge on the subject in question (Ridley, 2008; Hart, 1998; Oliver, 2012). According to Dawidowicz (2010), the goal of literature review is to create a complete, accurate representation of the knowledge and research-based theory available on a topic.

This chapter is in five parts. Part one gives an introduction to literature review and its importance, part two gives a brief description of past studies done on implementation of strategies, Environment Management Strategies, models and theories in implementation of strategies, project organizational structure and Supervision and implementation of Environmental Management strategies, Financial resources and implementation of Environmental Management

strategies, Policies and legislation and implementation of Environmental Management strategies and Training and Education of road construction Staff. Part three deals with critical review of major issues to be addressed in this study. Part four gives a summary of gaps which was filled by this study while part five provides the study conceptual framework.

2.2 Previous Studies done in the area

Heiskanen (2002) observes that the 1960s and 1970s saw the rise of the environmental movement, and the 1980s saw the emergence of the ‘green consumer’, the 1990s have been termed the decade of the ‘greening of industry’. This has been reflected in an increased interest in environmental issues in organization and management research. This was heralded as a long overdue awakening: after all, business corporations and other large organizations are central actors in the environmental crisis.

In the mid-1990s, researchers in the field were optimistic. They expected that environmental concerns would transform the way we view companies and organizations in general (Shrivastava and Hart 1994). The increase in environmentally related literature was noted as a sign of change. For example, Kivisaari and Lovio (1996) found 20 articles on environmental issues in the 1994-1995 volumes of the leading management, strategy and organization journals. Furthermore, these articles called for a paradigm shift: “a simple expansion of the management agenda to include environmental issues is not enough”.

Smith & Haugtvedt, 1997 notes that in European, North American, and Oceanic, care for the environment, and sub-themes like social responsibility, have become an increasingly significant consumer value. Products and services need to be congruent with the values held by consumers in order to be successful. Marketers need to consider them in designing and delivering their offerings.

The World Bank (2004) raised a number of important policy issue areas for improving the effectiveness of the environmental management system in Russia. This included: building an Effective Compliance and Enforcement System, fostering Intergovernmental Cooperation, encourage Meaningful Public Participation and Investing in Environmental Management and Control among others.

Gabor, R, et al (2005) did research on theoretical empirical insights about the increasing role of environmental management. Their research focused on what motivates organizations in introducing environmental management in their business operations. The motivation included corporate image, cost-effectiveness, and competitiveness, owner expectation, meeting legal requirements, partner expectations and environmental protection.

Likewise Jobst Conrad (edit.) edited a book titled “Environmental Management in European Companies: Success Stories and Evaluation”. This study is the product of an international collaborative research project investigating exemplary cases of successful environmental management in European

companies in Denmark, Germany, The Netherlands, Switzerland, Poland, and Latvia with the aim of discovering the reasons and dynamics underlying them and the role environmental policy did and could play. The research concentrated in eco-entrepreneurship strategies such as Recycling, Reducing Pollution, Developing and Diffusing Water-Borne Coating Systems, Eco-Controlling, Eco-Auditing among others. The study didn't look at the factors hindering the success of such strategies.

Pelesikoti N. (2003) did a research on sustainable resource and environmental management in Tonga. He looked at the current situation, community perceptions and proposed new policy framework. The findings of the study were that barriers to the implementations of this new environmental policy framework include political apathy to shift from 'traditional management' to the 'new' process suggested in this study, general lack of awareness and understanding of the 'grave' state of Tonga's environment, lack of public funds and management skills in the senior levels in the government and a general lack of scientific and technical expertise in the various areas of social, economic and ecological development in Tonga.

Austroroads (2002) recognizes environmental management as a strategic issue for the road transport system. In particular, the impact of roads and road transport on sustainability, and the environmental impact of roads and road use are key issues. It stresses the principle of shared responsibility through the

requirement that contractors have an agreed contractor environmental management plan (CEMP).

Hutchinson (1992) asserted that it is widely recognized that firms, though better management practices, can play a major role in addressing many environment problems. Companies have strong incentives to do so. On the one hand, they are influenced by a variety of external pressures for example from customers, socially concerned investors, environmental interest groups and regulators and on the other hand firms' own stakeholders increasingly expect their company to behave in a socially responsible manner. Consequently, an increasing number of companies have taken steps to assess, monitor and report on their environmental performance.

Gladwin (1993) indicates that consumers are becoming responsive to environmental concerns in their purchasing, use, and recycling decisions. He observes that Corporations are recognizing the benefits to the community and to long-term corporate profitability of reducing their environmental impact. "Green" consciousness has grown. There is an increased recognition of and concern for the fragility of the environment. Regulations and stricter regulatory enforcement are modifying organizational strategies. There is growing recognition of the concept of sustainable development, which teaches that the costs of tomorrow's cleanup must be set against the profits of today.

Shrivastava, (1995) notes that many researchers have recently suggested an increasing need for management theory development in the area of ecological

sustainability and the business system. This view is shared by Gladwin et al., 1995; Jennings and Zandbergen, 1995 and Starik and Rands, 1995.

Wamicha and Mwanje (2000) published a research paper on Environmental Management in Kenya. They noted that the Environmental Management Plans have not worked due to lack of participatory management of natural resources, conflicts in resource utilization, poverty problem, demoralized professional among others.

Koech (1991), writing on the history of environmental management in Kenya notes that in independent Kenya, the government expressed the first environmental policy in the sessional paper No. 10 of 1965 titled 'African socialism and its Application to Planning in Kenya'. This policy paper became the point of reference for national planning in the years that followed (ROK, 1965). In it, the government indicated clearly the need to conserve natural resources for all future generations (inter-generational and intra-generational equity) and that the quality of the environment must be placed on equal footing with the need to exploit natural resources for national development.

The 1974-78 National Development Plan had an express section on environment and its conservation and called for the establishment of a national working committee to be a watchdog on the environment.

The development plan for the period 1979 to 1983 was more forthright. Chapter two of the plan titled 'The Policy Framework' had a section entitled

'Environmental Management Policy' (ROK, 1979). This section stated that prevention of harmful effects is less costly than subsequent correction. It added that environmental considerations must be entertained at the stage of development planning to ensure that the pattern and style of development is consistent with a healthy environment. This government position was indeed pointing towards a concern for environmental protection, however the policy was not implemented to the letter as Kenya by then lacked proper environmental laws.

The 1984-88 Development plan stressed the government's concern with environmental protection without repeating the details of the preceding plan period. But the sixth National Development plan for the period 1989 to 1993 included an environmental component in different resource sectors. The plan suggested that the government had embarked on integrating environmental considerations in sectoral planning and management (ROK, 1989a).

The Seventh National Development Plan for 1994-96 laid a strong background of Kenya government's environmental planning. This development plan is based on Agenda 21 of the Rio de Janeiro conference on Global Climate Change and Biodiversity held in June 1992. The government's environmental policy was stated as:

"Recognizing that a sustainable economy and society cannot be achieved in a world with escalating poverty and environmental degradation, adopted Rio Declaration on Environment and Development, a new global Agenda 21 on making development

economically, socially and ecologically sustainable " (ROK, 1994a p.39).

It is with the same notion that the Republic of Kenya was committed to a new process of managing change towards sustainable development. To translate the commitment, the government stated:

"The translation to long-term sustainable development will be made more clear and concrete through the preparation of sessional paper on 'sustainable development' and through the National Environment Action Plan..." (ibid. p.169).

National Environment Action Plan was establishment subsequently. Its report formed a milestone in urban environmental planning and management in Kenya. In chapter eight of the report, entitled 'Human Settlement and Urbanization', action plans for human settlement, housing, energy, infrastructural and service, transport, disasters and resources for urban centres are concisely given (ROK, 1994b). The National Action Plan report proposed the established of a National Environmental management authority. This was realized when the National Environmental Management Authority (NEMA) was formed by an Act of Parliament. The success of the Authority is yet to be measured since it was inaugurated recently.

In 1999 the Kenya government prepared sessional paper no. 6 of 1999 whose theme was on Environment and Development. The paper stressed the need of exploiting the environment sparingly in the spirit of sustainable development (ROK, 1999). This has not fully been translated into reality are evident in the wanton destruction of the environment. Cases of degazetting of natural forests

by the government attest to this. Indeed the Government has made strides towards environmental planning and management both in rural and urban areas as evident from the above government statements. However there is no tangible achievement made so far. The government violates even its own policies like degazetting of forests.

A part from the government policies which are based on the top down approach, a new agenda for all development programmes has to be tailored in the appropriate direction by establishing local Agenda 21s as provided in Agenda 21. In these local agendas, a well-coordinated framework involving all stakeholders is to be encouraged. Environmental Management planning and management in road sector therefore aims at achieving sustainable development, in the context of Agenda 21.

Kenya Vision 2030 is a new long-term development blueprint for the country. The vision aims at transforming Kenya into “a newly-industrializing, middle income country providing a high quality of life to all citizens in a clean and secure environment”. Environmental Management is one of the social pillars in the Vision.

2.2.1 Implementation of Strategies

Strategy is also seen as a plan established by a firm to help accomplish its objectives (Pearce and Robinson, 2003; Jauch and Glueck, 1988). Jauch and Glueck (1988), state that strategy is a unified, comprehensive and integrated plan that relates the strategic advantages of the firm to the challenges of the

environment. Quinn (1988(a)) views strategy as more than just a plan but also a pattern that integrates an organizations' major goals, policies and action sequences into a cohesive whole. This view of strategy as a pattern, is also shared by Andrews (1999) and Mintzberg (1987(a)) among others.

The implementation of strategy is comprised of a series of sub-activities that are primarily administrative (Andrews, 1999). Andrews' view is further supported by Farjoun (2002) who suggests that strategy implementation comprises of a series of primarily administrative activities and includes the design of organizational structure and processes, and the absorption of policy into the organization's social structure.

Yuki and Lepsinger (2007), define strategy implementation as a process of translating strategy into successful business results and maintaining efficient, reliable operations. Implementation is a hands-on operation and action-oriented human behavior activity that call for executive leadership and key managerial skills (Schaap, 2006).

In today's dynamic super-competitive business environment characterized by rapid changes, intelligent managers realize that implementation is just as critical, if not more so, than the development of effective strategies, and they consider the capability of organizations in strategy execution to be a competition vantage in the 21st century (Pryor et al., 2007). This view is supported by Morten, Kjell and Simen (2002), who argue that in order for

companies to realize their strategic objectives, it is essential that strategies are successfully implemented. Consistent with this reasoning, the authors (Braganza and Korac-Kakabadze, 2000), asserted strategic implementation as a primary element in successful organization performance.

According to the figures put out by the Fortune Magazine, 70 percent of managers have reiterated that their strategy failure had been caused by slender execution than by ill-designed strategies (Fortune Magazine, 21 June, 1999). In another study conducted on 200 giant British organizations, only 33 percent of the managers have been successful in the execution of their well-designed strategies, and the rest have been unsuccessful in the execution stage (Lawrie, G and Cobbold, I, 2004).

Formulating strategy is difficult. Making strategy work-executing or implementing it throughout the organization is even more difficult. Without effective implementation, no business strategy can succeed. Unfortunately, most managers know far more about developing strategy than they do about executing it (Freedman, 2003).

Great strategies are worth nothing if they cannot be implemented (Okumus and Roper 1999). Without successful implementation, a strategy is but a fantasy (Hambrick and Canella, 1989). In spite of the importance of strategy execution in organizations' success and their achieving their goals, most of them fail to execute those strategies efficiently (Sterling, 2003).

Among scholars, there is agreement on the relevance of strategy implementation in enhancing performance of strategy implementation in enhancing performance outcomes (Aaker 1996; Keller and Lehmann 2006). One possible explanation why many organizations do not succeed in executing their strategies is the failure to pay attention to organization's implementation capabilities as theorized by scholars (Sterling 2003, Egelhoff 1993).

Thompson and Strickland (2003: 1989) state that good strategy execution involves a strong fit between the way things are done internally and what it will take for the strategy to succeed. A series of tight fits must be created between strategy and an organization's competences, capabilities, policies and structure; between strategy and budgetary allocation; between strategy and internal support system; between strategy and the reward structure and between strategy and the corporate culture.

Habrick and Cannella (1998) did a research focusing on communication and interaction process in strategy implementation. They conceptualized key characteristics of successful strategist: flexible, open-minded and with a permanent focus on potential threats to strategy implementation. They emphasized that strategist require skill to envisage potential implementation obstacles already during strategy formulation.

Communication between persons in charge of strategic planning and those implementing strategy has been shown to affect the success of strategy

implementation. Communication aids in developing a shared understanding of strategic goals and priorities. Research has shown that frequent communication increases strategic consensus and strategic consensus correlates with successful strategy implementation. (Rappert, Velliquette & Garretson, 2002).

Related to communication and yet another influencing force in strategy implementation is strategy selling. Strategy selling can be likened to championing of alternatives (Floyd and Wooldridge, 2000). This occurs within the confines of the firm and the concept not only includes vertical communication across hierarchical levels but also lateral interaction between those parties implementing strategy. (Hambrick & Cannella, 1980). In essence, strategy selling is an interactive process involving members across functional and unit borders (Ibid).

Floyd and Wooldridge (1992) did research which focused on strategic consensus as a source of ineffective strategy implementation. They theorized that successful strategy implementation depends on the level of managerial strategic consensus-that is the level of shared understanding and commitment among managers.

2.2.2 Environmental Management Strategies

Barrow (2005) notes that environmental management is a systematic approach to minimizing the damage created by an organization to the environment in which it operates. It is a planned approach to minimizing an organization's

impact on the environment in order to preserve natural resources (Frankel, 1998, Hart, 1997).

Corporate strategy has been driven by different forces in the past, by production pressures, personnel pressures, and more lately by information pressures. This decade as well as the next shows clear signs of corporate strategy being driven by environmental pressures (Welford, 1995).

The 21st century represents a critical turning point for society, business and the environment. A consensus is emerging in business that the environment stands a major challenge in the years ahead. However as yet, there appears to be little agreement about the strategic options available in business in formulating a response to this challenge. (Crognale, 2006). Roome (2007) asserts that there is need for society and individuals to acknowledge that their current lifestyle and activities contribute to environmental change on a significant and potentially life threatening scale.

In the 1970s, environmental management was regarded by companies with little enthusiasm, more recently companies have begun to regard environmental management as a strategic tool for gaining competitive advantage (Shrivastava et al, 1992). This usually implies incorporating environmental management into the overall business strategy (Rushton, 1993).

A study undertaken by Booz, Allen and Hamilton in 1991 of top executives in the chemical industry in the US, revealed that the leading chemical companies believe that an integrated and holistic approach to the environment is required in order to incorporate it into the overall business strategy (Rushton, 1993). This, in turn, requires the adoption of a proactive environmental strategy, as opposed to a passive or reactive strategy (Norcia et al, 1993; Little, 1991). Companies have begun to realize that 'green issues' or 'green management' is not a passing fad but are here to stay (Greeno et al, 1992). Consequently, they are now taking a more positive attitude to environmental regulations. Barrett (1991) claims that some companies have even begun to realize that they can influence the regulations that are introduced, in such a way as to increase competitive advantage. One way of doing this is by moving beyond compliance, in anticipation of future legislation and converting what might have become legislation into voluntary codes of conduct.

Roome (1992) asserted that environmental protection and economic growth are becoming more closely aligned. He stressed that environmental technology companies are proliferating and more businesses are redesigning processes to reduce environmental impact, improve production efficiency, and reduce costs. Therefore, the environmental agenda is quickly becoming an integral part of corporate strategy. He further notes that without a corporate environmental strategy, organizations will not understand legal, political, and financial pressures, including strict liability, labeling standards, and packaging laws.

Porter (1985) describes two main strategies for gaining competitive advantage - cost leadership and differentiation. Little (1991) claims that both these strategies can be applied to the environment for gaining competitive advantage. Gladwin (1993) suggests that the theory of strategic choice can be applied to environmental management which, in other words, means an organization's search for different types of competitive advantage. According to Welford (1995), environmental issues, widely defined, are too important to be regarded merely as a strategic tool for gaining short-term competitive advantage.

Stikker (1992) has put forward Ten Commandments for moving towards a sustainable business. They include integrating environmental issues as the responsibility of top management, making environmental jobs a line function, taking a systems approach, reducing and substituting the use of non-renewable resources, eliminating wastes, monitoring environmental performance and setting up communication and information procedures on the company's ecological principles and environmental performance.

A more comprehensive strategic framework for gaining competitive advantage and for moving one's business towards sustainability has been given by Hutchinson (1992). Hutchinson argues that for formulating its environmental strategy, a company's external as well as internal environment must be analyzed. The implications of environmental legislation, how market pressures like green customers and public opinion are impacting upon the business, and the various opportunities of becoming green - reduction in costs, new market

opportunities in the form of new products and services - should be analyzed. However, both of these approaches fail to take account of the non-environmental aspects of sustainable development such as equity and futurity.

Writing on strategy and environment, Crognale (2006) notes that some firms are just beginning to understand the importance of the interplay between strategy and environmental responsibility and of the effects of a changing and complex regional, national, and international environmental agenda. As regulations change, so will investor preferences. Managers therefore must continue to learn and integrate new environmental concerns into corporate strategy.

According to Welford (1992) there is need for the development of environmental management strategies which promote quality and a commitment by the management as well as the employees to environmental issues. This would impact across all levels of business and would be a necessary (but not sufficient) step in the achievement of sustainability in businesses.

2.2.3 Theories/Models in implementation of strategies

This study was guided by ten (10) theories/models of strategy implementation. These are:

1. The Sustainable Development Approach

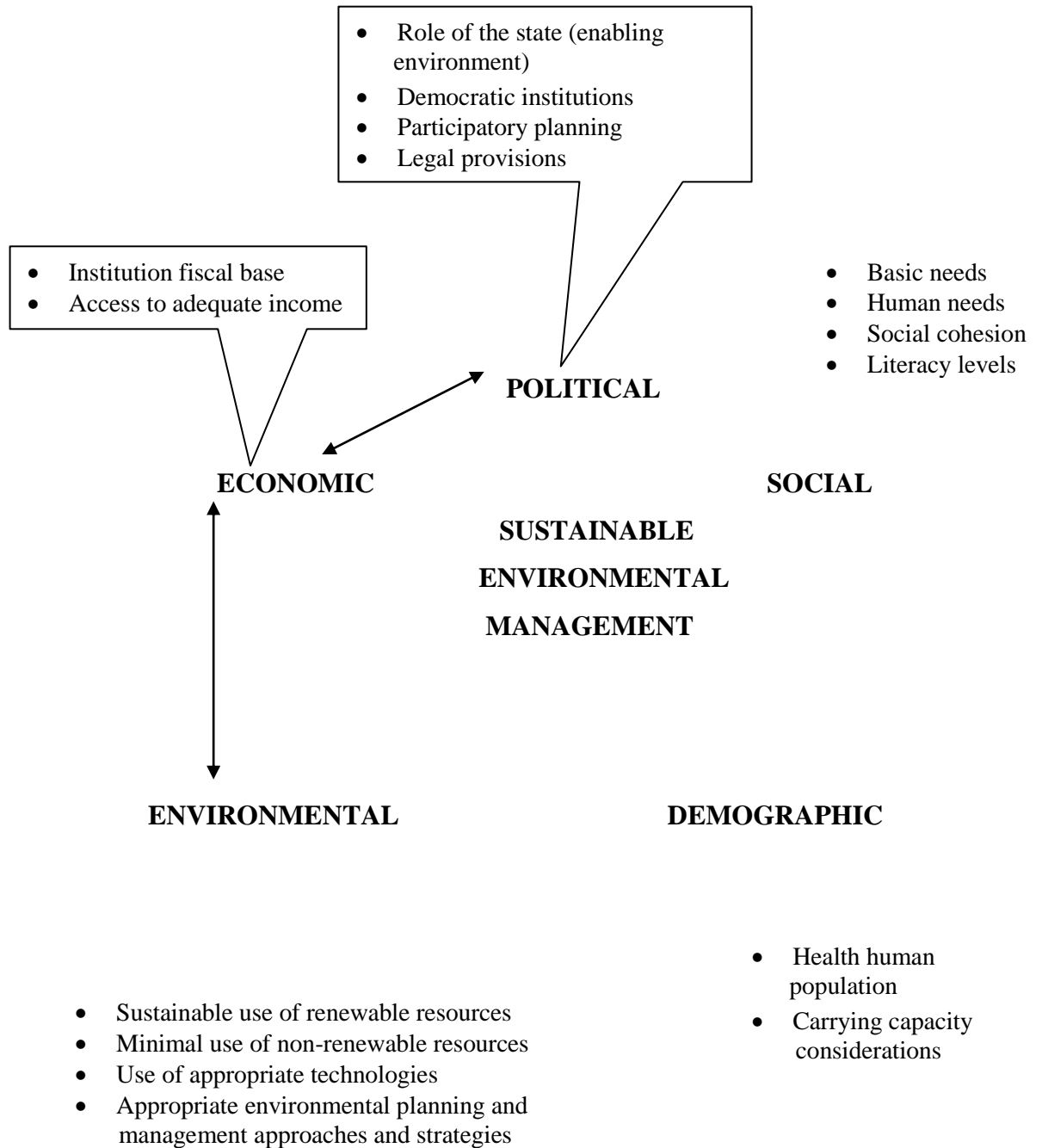
This study employed 'The Sustainable Development Approach' theoretical model to guide it. This theory is based on the central goal of sustainable

development in 'Our Common Future', the report of the World Commission on Environment and Development. This states that we must meet 'the needs of the present generation without compromising the ability of future generations to meet their own needs' (WCED, 1987).

The gist of this approach is that management and utilization of the environment and natural resources in must be done so as to meet development interests of the present generation without jeopardizing the interests of the future generations to enjoying the same. This is the meeting point between imperatives of development and environmental conservation.

There are two basic issues involved in the notion of sustainable development. The first focus is development goals, while the second is concerned with the control of harmful effects of human activities on the environment. The application of the two issues ensures that the needs of the present generation are met without compromising future generation needs. To achieve sustainable environmental management in roads political, economic, social, environmental and demographic components have to be integrated. This is illustrated in Figure 2.0.1.

Fig. 2.0.1: Components of Sustainable Environmental Management Strategy



Source: Adopted from Nyatwang'a (2007)

2. Balance Score Card (BSC)

Kaplan and Norton developed the balanced scorecard as a tool of linking strategy to managerial actions and subsequently, to reduce of the measurement gap. Kaplan and Norton (1996) state that the balanced scorecard should translate a business mission and strategy into tangible objectives and measures. They contend that the balanced scorecard is more than a tactical or an operational measurement system. It depicts an organization's vision of the future and strategy to the entire organization and thus creates a shared understanding.

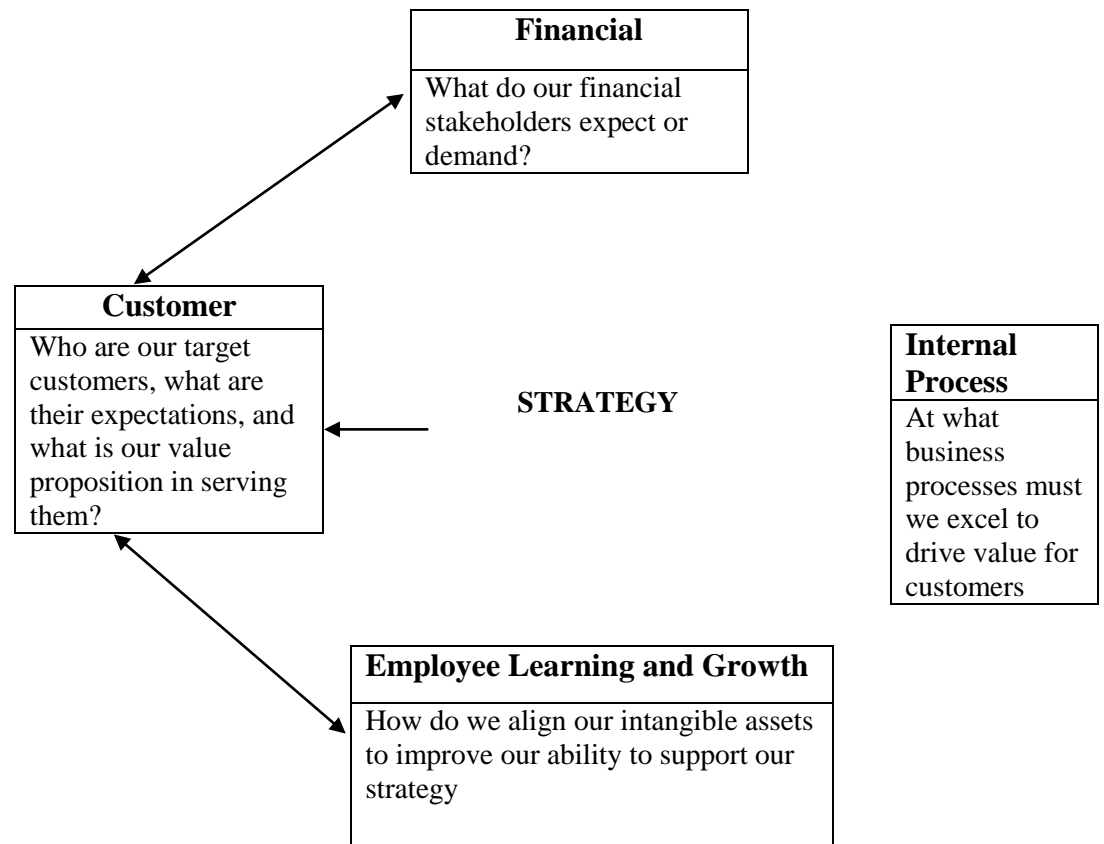
Lawrie and Cobbold (2004) argue that innovative companies use the balanced scorecard as a strategic management system to manage their strategy over the long run. They note that balanced scorecard can be used to: clarify and gain consensus about the strategy; communicate strategy thought the organization; align departmental and personal goals to the strategy; link strategic objectives to long-term targets and annual budgets; identify and align strategic initiatives; perform periodic and systematic strategic reviews; obtain feedback to learn about and improve strategy.

As a result of the balanced scorecard use, strategic reviews may reaffirm belief in the current strategy, adjust the quantitative relationship among the strategic measures on the balanced scorecard or alternatively, reveal that an entirely new strategy is required. The balanced scorecard further creates a holistic view of the strategy that allows all employees to see how they contribute to

organizational success. Without such linkage, Kaplan and Norton (1996), argue that individuals and departments can optimize their local performance but not contribute to achieving strategic objectives.

Niven (2002) notes that the Balanced Scorecard enables management reports to focus on measures specifically selected to represent the organization's strategy. The Balanced Scorecard also influences other organizational systems when managers use it to align their planning, budgeting, and resource allocation systems, and their incentive and reward systems to strategy. The balanced scorecard puts strategy – the key driver of results today – at the center of the management process. The basic premise behind the balanced scorecard is quite simple: measurement motivates. Figure 2 illustrates how BSC can be used in strategic evaluation.

Fig. 2.0.2: Balance Score Card (BSC) Illustration



Source: Niven, 2002

3. MCKINSEY 7S MODEL

Waterman et al. (1980) put forward a conceptual framework to assist in the process of strategy implementation. The McKinsey 7-S Model is a widely discussed framework for viewing the interrelationship of strategy formulation and implementation. It helps to focus managers' attention on the importance of linking the chosen strategy to a variety of activities that can affect the implementation of that strategy. Originally developed as a way of thinking

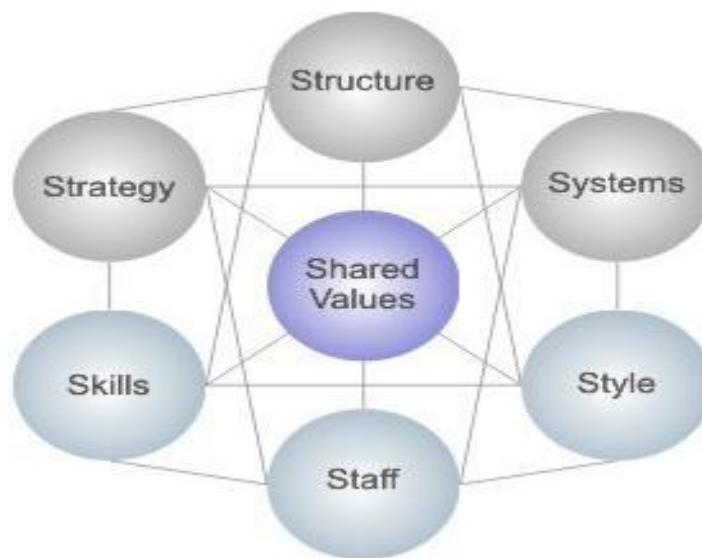
more broadly about the problems of organizing effectively, the 7-S framework provides a tool for judging the "duality" of strategies.

According to its developers, Peters and Waterman (1982), the framework suggests that it is not enough to think about strategy implementation as a matter only of strategy and structure, as has been the traditional view. That, in practice, these notions are too limiting. To think comprehensively about a new strategy and the problems with carrying it out, a manager must think of his company as a unique culture and must think about the ability of the company to get anything really fundamental (i.e., not tactical) accomplished as a matter of moving the whole culture.

The McKinsey 7-S Framework should be thought of as a set of seven compasses. When the needles are aligned, the company is "organized". When they are not, the company is not really organized even if its structure looks right. If a 7-S analysis suggests that strategy implementation will be difficult, managers either can search for other strategic options, or go ahead but concentrate special attention on the problems of execution suggested by the framework. Peters and Waterman (1982), further suggest that the various elements of the 7-S framework interrelate and a change in one of them will or may lead to a change in the other elements (e.g. a change in structure or culture may lead to a subsequent change in strategy, systems, styles, etc, and vice versa).

Whilst other authors, like Porter (1980), have emphasized the importance of hard aspects such as strategy, structure and systems, they identified four additional soft facts namely shared values, skills, style and staff, as represented in Figure 2.0.3.

Fig. 2.0.3: McKinsey 7S model



Source: Waterman et al. (1980)

Waterman et al. (1980) demonstrated the interconnectedness of the above seven elements. They showed that any intervention in any one of them would affect the others. This challenged the traditional management thinking that “structure follows strategy”.

4. Logical Incrementalism

Quinn (1988b) argues that organizations test out relatively small changes and develop with this approach. Continual testing and gradual strategy implementation provides improved quality of information for decision making and enables better sequencing of the elements of major decisions. Effective

managers thus realize that they cannot do away with the uncertainty of their environment by trying to know about how it will change. Rather, they try to be sensitive to environmental signals through constant scanning and testing changes in strategy in small steps. Incremental change could therefore be seen as adaptation to the opportunities which arise in a continually changing environment and can be also be seen as heavily influenced by experience. Properly managed, Quinn contends, that it allows the executive to bind together the contributions of rational, systematic analysis, political and power theories and organizational behavior concept. Since the change is gradual, the possibility of creating and developing a commitment to change throughout the organization is increased.

Quinn observes that successful managers who operate logically and proactively in an incremental mode build the seeds of understanding, identification and commitment into the very process, which create their strategies. Careful incrementalism allows them to improve the quality of information used in decisions and deal with the practical politics of change, while they step by step build the organization's momentum toward the new strategy and the psychological information to carry it through.

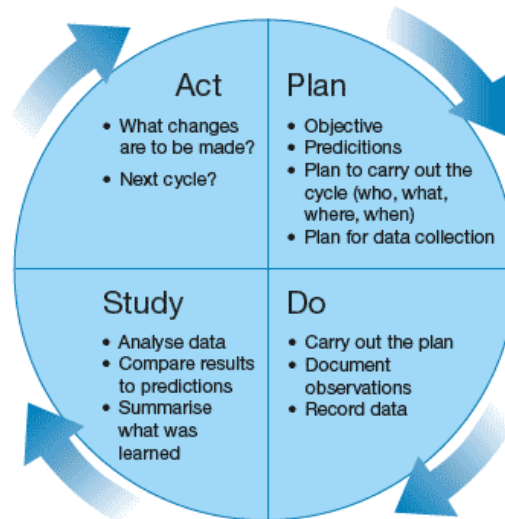
5. The Plan-Do-Study-Act (PDSA) model

Langley et al. (1996) notes that the PDSA cycle starts with determining the nature and scope of the problem, what changes can and should be made, a plan for a specific change, who should be involved, what should be measured to understand the impact of change, and where the strategy will be targeted.

Change is then implemented and data and information are collected. Results from the implementation study are assessed and interpreted by reviewing several key measurements that indicate success or failure. Lastly, action is taken on the results by implementing the change or beginning the process again.

Baron et al. (1986) asserts that one of the unique features of this model is the cyclical nature of impacting and assessing change, most effectively accomplished through small and frequent PDSAs rather than big and slow ones, before changes are made system wide. They further indicate that the model verifies on a small scale if a change or a set of changes actually produces results. Specifying a measurable aim, a time frame and a target population, a small-scale test of an improvement is carried out, the results analyzed and those changes that appear successful refined until agreement is reached on which changes have produced the expected result, ready to be applied to a broader population. Figure 2.0.4 illustrates PDSA cycle.

Fig. 2.0.4: PDSA Cycle



Source: Langley et al. (1996)

6. Resource-Based Approach

The ‘resource-based approach’, a new paradigm in the field of strategic management, has emerged in response to ever-changing and globalized environment on one hand and the pressing need for ensuring competitive advantage. The competencies, capabilities, skills, or strategic assets of the firm are seen as the source of sustainable competitive advantage (Mabey et al, 1998).

Boxall (1996) asserts, the resource-based perspective implies the need to build strategic management processes. Therefore, the role of Human Resource in increasing firm performance in large and small firms significantly relates to the perception of the top management team and their Human Resource capabilities (Prahalad and Hamel, 1990; Kakabadse et al, 1995; Hunt, 1995). The

integration of Human Resource and strategy will be achieved when top managers view employees as strategic resources (Bennett et al, 1998).

The resource-based approach to strategic management considers Human Resource as a unique source of competitive advantages of the firm (Lorange and Murphy, 1984; Boxall, 1996; Lundy, 1994; Story, 1998). It has been even suggested that there is a link between a firms' performance and the utilization of its human resources (Lahteenmaki et al, 1998; Baird and Meshoulan, 1998).

7. Resources Dependence Theory (RDT)

The stream of literature dealing with the resource allocation process looks at the process of resource allocation as a proxy for implementation of strategy (Bower 1970). Resource has been defined as assets tied semi-permanently to firms and includes tangibles and intangibles (Wernerfelt 1984). Organizations depend on multidimensional resources: labor, capital and raw material.

RDT proposes that actors lacking in essential resources will seek to establish relationships with (i.e., be dependent upon) others in order to obtain needed resources. Resource Dependence Theory is the study of how the external resources of organizations affect the behavior of organizations. The theory's central proposition is that organizations will try to manage their resource dependencies with a variety of tactics, such as the cooptation (Selznick, 1949) of sources of constraint, in order to achieve greater autonomy and thus reduce

uncertainty in the flow of needed resources from the environment (Pfeffer and Salancik, 1978).

RDT has various influences in decision making. Resource dependence theory (RDT) has become one of the most influential theories in strategic management. RDT characterizes an organization as an open system, dependent on contingencies in the external environment (Ibid.).

RDT recognizes the influence of external factors on organizational behavior and, although constrained by their context, managers can act to reduce environmental uncertainty and dependence. Central to these actions is the concept of power, which is the control over vital resources (Ulrich & Barney, 1984). Organizations attempt to reduce others' power over them, often attempting to increase their own power over others.

The environment is assumed to contain scarce and valued resources essential to organizational survival. As such, the environment poses the problem of organizations facing uncertainty in resource acquisition. Organizations are assumed to work toward two related objectives: acquiring control over resources that minimize their dependence on other organizations and control over resources that maximize the dependence of other organizations on themselves. Attaining either objective is thought to affect the exchange between organizations, thereby affecting an organization's power.

8. Systems Theory

Systems theory views an organization as a complex set of dynamically intertwined and interconnected elements including inputs, processes, outputs, feedback loops and the environment. System theory starts from the premise: everything depends on everything (Robbins and Barnwell, 1998).

Checkland, 1981, argues that systems theory approaches a system as a whole. It emphasizes the mutual interdependence of the parts and concentrates furthermore on problems of control in a system. Application of systems theory to strategic management requires the integration of all aspects/approaches in an organization.

Boulding (1996) indicates that Systems theory has served us well and will continue to provide managers and students of organizations with metaphors, terminology and explanations about how organizations function.

9. PESTEL Analysis

Before creating Strategic Plans or when evaluating existing ones it is important to 'scan' the external environment. This takes the form of a PESTEL analysis that is an investigation of the Political, Economic, Social, Technological, Environmental and Legal influences on a business. In addition it is also important to be aware of the actions of your competitors. These forces are continually in a state of change.

In analyzing the macro-environment, it is important to identify the factors that might in turn affect a number of vital variables that are likely to influence the

organization's supply and demand levels and its costs (Kotter and Schlesinger, 1991; Johnson and Scholes, 1993).

The PESTEL analysis examines the impact of each of the above factors (and their interplay with each other) on the business. The results can then be used to take advantage of opportunities and to make contingency plans for threats when preparing business and strategic plans (Byars, 1991; Cooper, 2000).

10. SWOT Analysis

Byars (1991) notes that in the 1960's and 70's, Albert Humphrey is said to have developed this strategic planning tool using data from the top companies in America at the time. A SWOT Analysis looks at the strengths, weaknesses, opportunities and threats that are relevant to an organization in a new venture. A SWOT Analysis is a tool which allows users to look at the direction a company or organization may wish to move towards in the future. A SWOT Analysis is a useful tool, which in conjunction with others can help make informed decisions.

A SWOT analysis is a simple but widely used tool that helps in understanding the strengths, weaknesses, opportunities and threats involved in a project or business activity. It starts by defining the objective of the project or business activity and identifies the internal and external factors that are important to achieving that objective. Strengths and weaknesses are usually internal to the organization, while opportunities and threats are usually external. (Pearce and Robinson, 1997).

Organizational survival depends on keeping the organization alert to developing trends and economies. SWOT Analysis can help during strategy formulation and implementation in to evaluating the Strengths, Weaknesses, Opportunities, and Threats in the early stages of change management.

2.2.4 Project organizational Structure and supervision and implementation of Environmental Management strategies

Kaplan and Norton (1996) noted that an organization and its structure vary from company to company. Depending upon the objectives, an organization can be structured in different ways. The structure of an organization determines the way in which it operates and performs. The structure in a way contributes to the achievement of strategic objectives.

Strategies do not take place against a characterless background but must take account of the features of the organization in which they will be implemented. Organizational structures determine what actions are feasible and most optimal. The importance of organizational structures in the implementation of a strategy is hard to overemphasize. Good strategy involves taking account of where a company finds itself in terms of the external market and its internal organizational structure (Crittenden and Crittenden, 2008).

Factors relating to the organizational structure are the second most important implementation barrier according to Heide & Grønhaug & Johannessen's (2002) study. Noble (1999) see a proper strategy-structure alignment as a necessary precursor to the successful implementation of new business

strategies. They pointed out that changes in the competitive environment require adjustments to the organizational structure. If a firm lags in making this realignment, it may exhibit poor performance and be at a serious competitive disadvantage.

Mungai (2007) argues that appropriate matching of structure and strategy is absolutely critical because the organizational structure of any organization plays a crucial role in the successful implementation of strategies.

The impact of structure on strategy implementation draws support from empirical research conducted by Crittenden and Crittenden (2008). Their study showed that organizational structure does in fact harm well formulated strategies when the constraints the organizational structure presents are not taken into account in strategic plans. Corporate strategy exists simultaneously on the corporate, business and functional levels, and the input of all members of the firm ought to be present at each of these levels. This, in turn, requires effective cross-functional integration of processes which may suffer from inadequate structures. (Ibid)

Balogun et al. (1999) emphasize supervisory activities and the restraints they create in enhancing adaptability, as it is in this area that is likely to hinder strategy implementation. The challenges of diverging ideas derive, in some measure, from the fact that in a supervisory role, a manager must focus on creating an optimal setting of adaptability and it is up to them to encourage their subordinates to pursue new ideas.

The managerial task of middle managers according to Conlow (2001) is a twofold assignment: a middle manager must organize work in accordance with directions given to them but simultaneously be a supervisor to their subordinates. It can be claimed that it is the line workers who ultimately bring companies success or failure, and middle managers are ones to make sure that it is the former that is achieved.

The EMCA,2000 provides that an environmental management plan proposing the measures for eliminating, minimizing or mitigating adverse impacts on the environment; including the cost, time frame and responsibility to implement the measures;

The Environmental Impact Assessment regulations provides that In executing a project, after the environmental impact assessment study report has been approved by the Authority, the proponent shall take all practical measures to ensure the implementation of the environmental management plan. This is possible through environmental monitoring which is part of environmental supervision.

The Act likewise provides that National Environment Management Authority (NEMA) inspectors may, at reasonable times, enter on any land, premises or facility of a project for the purposes of inspection, to examine records and to make enquiries on an on-going project.

2.2.3 Financial resources and implementation of Environmental Management Strategies

The concept of strategic fit and optimal utilization of resources dictate that budgetary allocations be made proportionately to the expected returns. Thomson et al. (2008) indicates that diversifying into related businesses where competitively valuable strategic fit benefits to perform better finally as part of the same company than they would have performed as independent enterprises, thus providing a clear avenue for boosting shareholder value. The greatest strategic challenge in budgetary allocations is that in organizations which are not for profit, budgetary allocations are made to benefit the management of the organization and not the key stakeholders hence business failure.

Another challenge in the implementation of strategies through budgets is that there is always competition for capacity between strategic tasks and operating ones, which in most cases is resolved in favour of the later. In many organizations, the strategic budget is not separated from the operating budget (Ansoff, 1990).

Helde and Johannessen (2002) indicate that organisations have financial resources, physical resources, human resources and technological resources. Once developed, plans raise hopes and expectations: but nothing really happens until resources, mainly through budgets, are committed. Limited financial resources are a key issue in successful strategy implementation.

Tangible resources are the physical assets of an organization such as plant, labour and finance while intangible resources are nonphysical assets such as

information, reputation and knowledge. Many organizations operate with resource levels far below the threshold level which is disastrous for any success of the strategy. (Johnson et al, 2006).

Implementation of Environmental Management strategies in road project requires substantial financial resources. This is because road construction is an extractive industry whereby a lot of materials are extracted from the environment and the environment is damaged.

Part III Section 16 subsection d of the Environmental (Impact Assessment and Audit) Regulations, 2003 requires that a project proponent should develop an environmental management plan with mechanisms for monitoring and evaluating the compliance and environmental performance which shall include the cost of mitigation measures and the time frame of implementing the measures.

2.2.4 Policies, legislation and implementation of Environmental Management strategies

Commenting on environmental law in Kenya, Okidi (2001) observed that in colonial Kenya there were a number of strict policy positions of environmental significance. These included measures like terracing to curb soil erosion in African Reserves, for which the colonial government put in place compulsory legislation to effect.

The Constitution of Kenya 2010 section 42 provides that every person has the right to a clean and healthy environment, which includes the right to have the

environment protected for the benefit of present and future generations through legislative and other measures and to have obligation relating to the environment. Under Article 69 (1) (f), the state is under obligation to establish systems of environmental impact assessment, environmental audit and monitoring of the environment. Likewise under article 69 (2), every person has a duty to cooperate with state organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources.

The Government of Kenya is concerned about the quality of the environment and has enacted the Environmental Management and Co-ordination Act No. 8 of 1999 (EMCA,1999) thereby establishing a legal framework within which to ensure strict observance of clean production and consumption processes in the economy. EMCA empowers stakeholders to participate in sustainable management of the natural resources. It calls for Environmental Impact assessment (EIA) (under Section 58) to guide the implementation of environmentally sound decisions. Projects likely to cause environmental impacts require that an environmental impact assessment study to be carried out.

The Act consists of Sectoral Plans for the medium and long term intended to lead to sustainable development in the country. EMCA puts special emphasis on environmental management, pollutions and nuisances, and the necessity to safeguard the well-being of the populations.

Section 58 of the Environmental Law requires that an Environmental Impact Assessment (EIA) study precede all development activities proposed to be implemented in Kenya. The Act further requires that EIA studies so designed, be executed in accordance with the Guidelines for Conduct of EIAs and Environmental Audits (Kenya Gazette Supplement No. 56 of 13th June 2003) as published by the National Environmental Management Authority (NEMA). (EMCA, 2000). Environmental conservation aspects of a project are realized through the implementation of the Environmental Management Plan (EMP) which aims at mitigating the potential negative impacts and enhancing the potential positive impacts.

2.2.5 Training, Education and implementation of Environmental management strategies

Storey (1998) notes that education and training have a fundamental role to play in achieving firm's objectives, sustainable and inclusive growth, notably by equipping citizens with the skills and competences in order to remain competitive and innovative. Training likewise helps in increasing the job knowledge and skills of employees at each level. It helps to expand the horizons of human intellect and an overall personality of the employees.

The impact of the Human Resource (HR) capability on the firm's performance and its involvement in developing business strategies are becoming

increasingly important particularly in high tech Small and Medium-sized Enterprises. (Lahteenmaki et al. 1998)

Pearce & Robinson (1997) argues traditional human resource ideas emphasise solely on physical skills but concern for individual efficiency and quality and finally workforce as management adversary. The emerging strategic human resource management ideas emphasises the total contribution on the firm; innovative and creative behaviour; overall effectiveness; and cross-functional integration; investment on people and finally workforce as management partner.

Kunzmann and Deicioglu (1985) noted that for effective Management of the Environment, trained human resources who are skilled and knowledgeable in environmental issues is needed. They stress that successful strategy execution depends greatly on good internal organization and competent personnel. Building a capable organization is thus always a top strategy implementation priority and assembling a capable management team is an obvious part of the strategy implementation task.

2.3 Critical Review of major Issues

From the literature reviewed above it can be appreciated that there is a growing concern in Kenya and at global level that many forms of development activities cause damage to the environment. Development activities have the potential to damage the natural resources upon which the economies are based. It is

globally now accepted that development projects must be economically viable, socially acceptable and environmentally sound.

The management and utilization of the environment and natural resources in must be done so as to meet development interests of the present generation without jeopardizing the interests of the future generations to enjoying the same. This is the meeting point between imperatives of development and environmental conservation.

Today, industries faces a number of strategic options when faced with environmental issues and managers need to decide how environmental concerns should be integrated into their corporate strategies. Managerial perceptions of environmental risks and market opportunities determine the level of integration of environmental issues, which in turn, determines the range of corporate responses. Industries can be reactive in their strategies by complying with existing regulation or can follow a more proactive strategy of developing competitive advantage through environmental initiatives.

This study seeks to find out what is affecting implementation of Environmental Management strategies as the dependent variable and independent variables are limited environmental supervision in road civil works, inadequate financial resource, environmental legislation and limited training of road construction staff while the dependent variable is implementation of environmental management plans during road construction.

2.4 Summary and Gaps to be filled by the Study

The Literature review discussed above has demonstrated that different scholars have tried to document their findings on environmental Management.

Effective Compliance and Enforcement System, fostering Intergovernmental Cooperation, encourage Meaningful Public Participation and Investing in Environmental Management has been suggested as one way of enhancing environmental management.

It has been established that what motivates organizations in introducing environmental management in their business operations included corporate image, cost-effectiveness, and competitiveness, owner expectation, meeting legal requirements, partner expectations and environmental protection.

Studies have also found that traditional management' as opposed to the 'new' process, general lack of awareness and understanding of the environment, lack of public funds and management skills in the senior levels in the government and a general lack of scientific and technical expertise in the various areas of social, economic and ecological has hindered environmental policy implementation.

These studies however have not looked at the factors affecting implementation of environmental management strategies. This study therefore seeks to find out determinants of implementation of environmental management strategies of

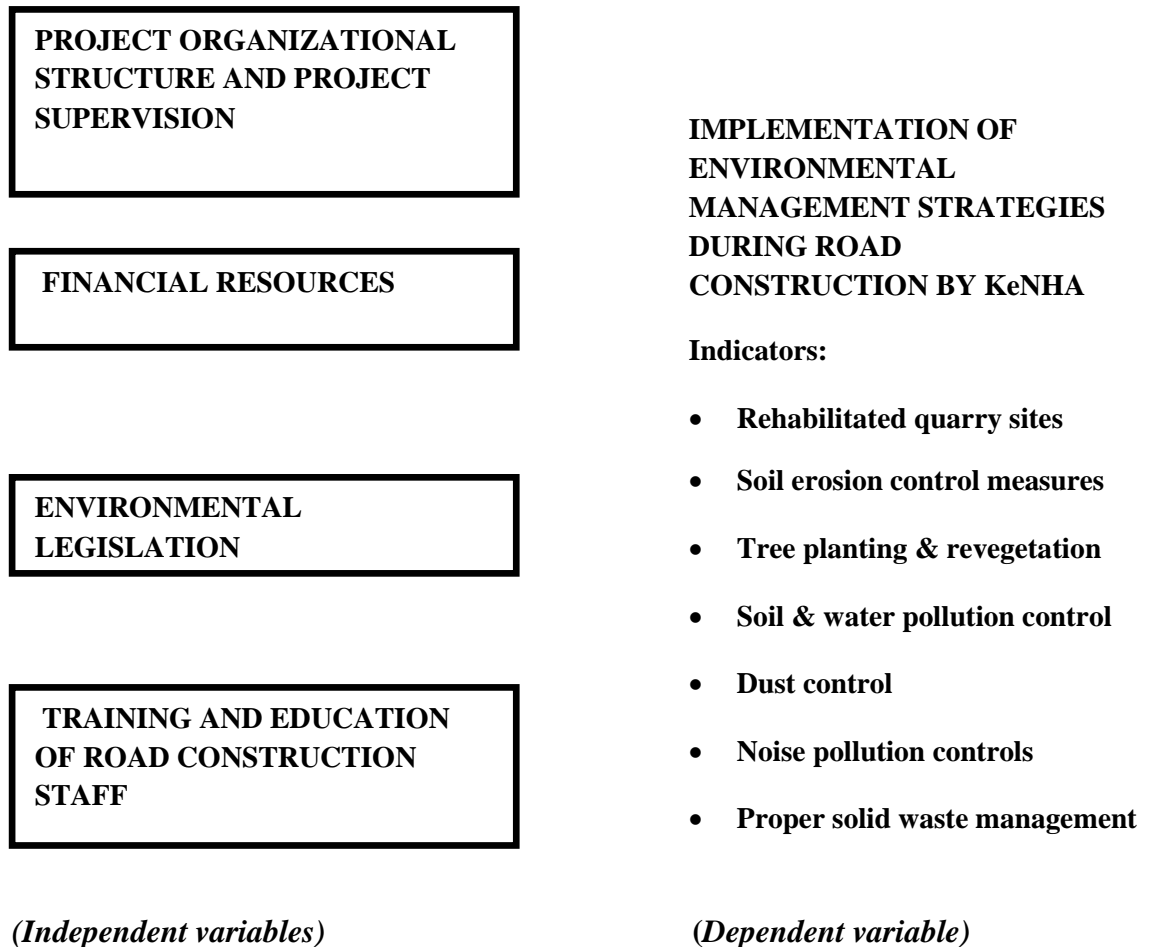
public organizations in road construction sector in Kenya, Case of Kenya National Highways Authority.

This research fills an important gap in strategy implementation literature on determinants of implementation of environmental management strategies of public organizations in road construction sector in Kenya.

2.5 The Conceptual Framework

The independent variable in this study is limited environmental supervision in road civil works, inadequate financial resource, environmental legislation and limited training of road construction staff while the dependent variable is implementation of environmental management plans during road construction. The Conceptual framework which summarizes the major dependent and independent variables in the research and the relation between them and which guided the study is given in Figure 2.0.5.

Fig. 2.0.5: Conceptual Framework



Source: Researcher (2013)

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter represents research methodology used during the study. The Chapter covers the following area: introduction to research methodology, study design, target population, sampling design, data collection procedures, data analysis and presentation and expected output.

3.1 Introduction to Research Methodology

The purpose of this research study is to investigate determinants of implementation of environmental management strategies of public organizations in road construction sector in Kenya, case of Kenya National Highways Authority. This chapter describes the study design, target population and sample design. It also has a section on data collection procedures, instruments to be used in data collection and data analysis. It concludes with a section on expected output.

3.2 Study Design

This study is a descriptive survey. A descriptive survey attempts to describe characteristics of phenomena, opinions, views, subjects, preference, attitudes and perceptions of people of interest to the investigation (Borg and Gall, 1983). The study being a descriptive survey sought to describe and interpret various situations

The study used both qualitative and quantitative paradigms in collecting and analyzing data. Quantitative research design, as a scientific method of evaluation yields numbers, charts and tables from a given population. According to Gall, Borg and Gall (1996), quantitative research designs are by their nature structural, predetermined and specific. Qualitative research design, on the other hand, describes and develops an understanding for a particular social situation event or interaction (Bogdan & Biklen, 1982). The qualitative design was used because it is naturalistic and thus allows participants to express their feelings more freely to collecting and analyzing data. The human phenomena that cannot be investigated by direct observation such as attitudes, views and other emotions are best studied using the qualitative method. Both qualitative and quantitative methods complement each other according to Mugenda and Mugenda, (1999).

3.3 Target population

A target population is the larger group to which one hopes to generalize or apply his findings (Fraenkel and Wallen, 1993). At the time of the study, they were twenty (20) roads under construction by KeNHA (**Refer to Appendix 4**). The roads are spread all over the country. The study focused on only staff who deals with management and supervision of road construction works. The management and supervision of road construction work is done at three (3) levels. These are: KeNHA's level represented by Project Engineer (PE), Supervising Consultant's level represented by Resident Engineer (RE) and Contractor's Level represented by road project Site Agent (SA).

The population of interest was therefore twenty Project Engineers, twenty Resident Engineers (RE) and twenty Road project Site Agents (SA). This target population is summarized in the Table 3.0.1.

Table 3.0.1: Target Population

Population of Interest	Population Frequency	Percentage
Project Engineers	20	33.4
Resident Engineers	20	33.3
Site Engineer	20	33.3
TOTAL	60	100

Source: Kenya National Highways Authority, Planning and Environment Department

3.4 Sampling Design

For the above population of sixty (60), no sample was preferred. The researcher instead took a complete census as the target is small. Census inquiries are always considered more representative because all members of the population are chosen.

The researcher took all the target population of 20 on going road projects. In each project one Project Engineer, one Resident Engineer and one Site Agent was chosen. This gave a total of 60 respondents.

3.5 Data Collection Procedures and Instruments

The researcher used drop and pick method to distribute the questionnaires to the 60 respondents in their offices. The respondents were required to fill the questionnaires as honestly and as completely as possible.

Sources of data for the study were both primary and secondary data in order to realize the set objectives of the study. Primary data was obtained using questionnaires while secondary data was be obtained from relevant textbooks, journals, periodicals, academic reports and project reports. These documents were sourced from various University Libraries like Kenyatta University (Post Modern Library) and University of Nairobi (Jomo Kenyatta Library) and Moi (Margret Thatcher Library). Development Plans, internet, Government reports and strategic management publications were used.

The researcher used a questionnaire as the data collection instrument. The questionnaire had open-ended and closed questionnaire on issues related to the problem. The Likert scale was used in the questionnaire in ascribing quantitative value to qualitative data, to make it amenable to statistical analysis. In this study, information was collected using drop and pick method where questionnaires were distributed to the respondents.

3.6 Validity and Reliability Test

Reliability refers to random error in measurement. Reliability indicates the accuracy or precision of the measuring instrument (Norland, 1990). A pilot study was carried out questionnaire to test reliability of the questionnaire. This was done by collecting data from subjects who are not study respondents to avoid respondent contamination, after which corrections and adjustments was done; this ensured reliability. In order to ensure validity and reliability, the questionnaires was composed of carefully constructed questions to avoid ambiguity and in order to facilitate answers to all the research questions.

Triangulation method was used to test the validity of data collected. This was done by engaging multiple methods, such as, observation, interviews and recordings which lead to more valid, reliable and diverse construction of realities. Triangulation techniques increase validity by incorporating several viewpoints and methods. The researcher combined of two or more theories, data sources or methods.

Also, two research experts were used to evaluate the relevance of each item in the instrument to the objectives and rated each item on the scale of; Very relevant(4), quite relevant(3), somewhat relevant (2), and not relevant (1). Validity was then determined using Content Validity Index (C.V.I). C.V.I is equal items rated 3 or 4 by both charges divided by the total number of items in each research instrument. This is symbolized by:

$$n_{3/4} / n$$

Where $n_{3/4}$ =number of items rated as very relevant and quite relevant
 n =total number of items in the research instrument

Items with a validity and reliability coefficients of at least 0.70 are acceptable as valid and reliable (Kathuri and Pals, 1993).

3.7 Data Analysis and Presentation

Data was analyzed both qualitatively and quantitatively. Qualitative data was obtained from the open-ended items in respondent questionnaires. The data was grouped into different categories depending on the responses given by

different respondents. Those categories aided in establishing themes, which were coded and entered into a computer. Through the use of the Microsoft office packages, the data was analyzed using descriptive statistics.

Quantitative data was obtained from both the pre-coded and open-ended items. It was coded and entered into the computer for descriptive analysis. Given the outcome the researcher discussed the findings and drew conclusions. Finally the researcher made recommendations and gave suggestions for further research based on the study findings.

CHAPTER FOUR

FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents the analysis and findings of the study as set out in the research methodology. The method of data collection was done through open-ended and closed questionnaire on issues related to the problem. The Likert scale was used in the questionnaire in ascribing quantitative value to qualitative data, to make it amenable to statistical analysis. The objective of the study was to investigate determinants of implementation of environmental management strategies of public organizations in road construction sector in Kenya, Case of Kenya National Highways Authority

A total of forty two (42) questionnaires were completed and returned. This is an adequate response rate which represents 70% of the total response rate and could therefore be used as a basis for conclusions.

Content analysis and inferential statistics were utilized in data analysis. Also, descriptive statistics were used to analyze the data with the results of the analysis being summarized in tables, percentages and figures. The findings have been summarized in similar manner to the questionnaires.

4.2 Demographic Characteristics

The demographics of the respondents in the study are presented below. The demographics relevant to this study are: gender, age, duration worked in road sector, highest qualification and position in the project.

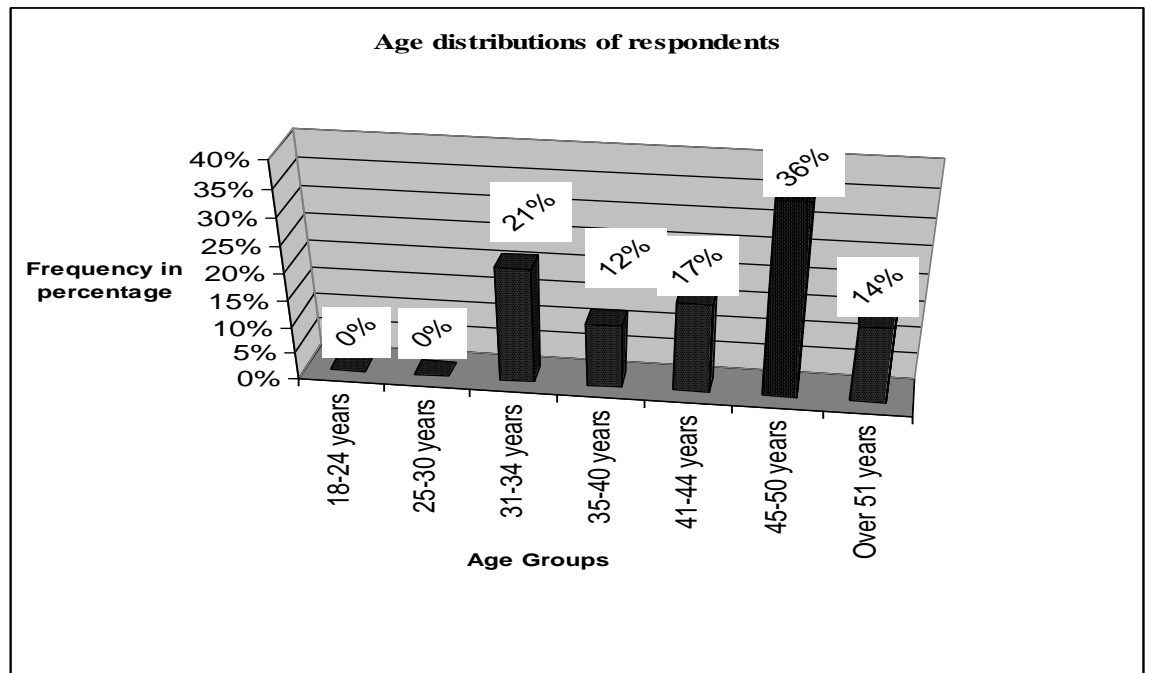
Table 4.0.1: Gender Distribution of Respondents

Gender	Frequency	Percentage
Male	42	100%
Female	0	0.0%
Did not specify	0	0.0%
Total	42	100%

Source: Research Data

The gender of the respondents exhibited an interesting characteristic as indicated in Table 4.0.1. From the findings, all the respondents (100%) were all male and no woman is involved in the management of the selected ongoing road projects.

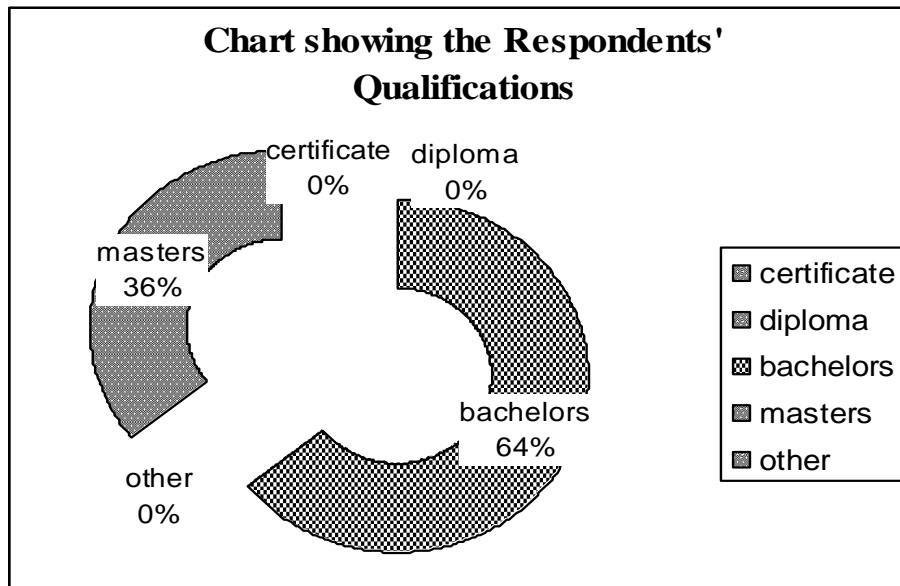
Fig. 4.0.1: Showing Age group Distribution of Respondents



Source: Research Data

Figure 4.0.1 shows that majority of the respondents (67%) were above 41 years old while the remaining (33%) were below the age of 41 years old. The majority (36%) are in the age category of 45-50 years.

Fig. 4.0.2: Showing Highest Qualifications of Respondents



Source: Research Data

Figure 4.0.2 provides information concerning the highest qualification of the respondents. 36% of the respondents indicated they have masters degree, 64% indicated they had undergraduate degree qualification.

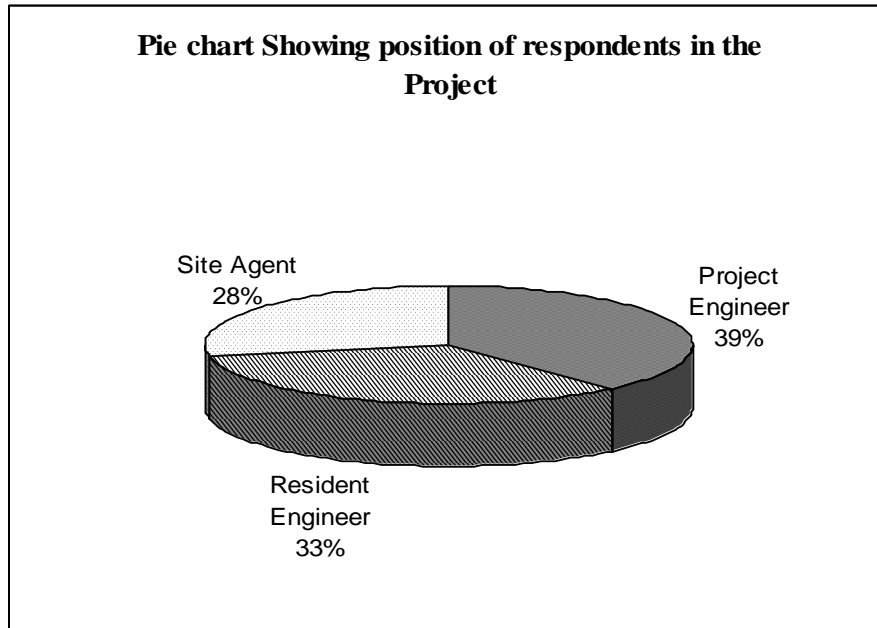
Table 4.0.2: Respondent's number of years working in the road sector

Number of years	Frequency	Percentage
0-5	0	0%
6-10	6	14.3%
11-15	10	23.8%
Over 15	26	61.9%
Total	42	100%

Source: Research Data

Table 4.0.2 shows that majority of respondents (61.9) % of the respondents have worked in the road sector for more than 15 years. This means that they are highly experienced.

Fig. 4.0.3: Showing Position of respondent in the project



Source: Research Data

Figure 4.0.3 provides information concerning the current position occupied by the respondents in the road projects. 39 % of the respondents are Project Engineers (PE), 33% Resident Engineers (RE) and 28% Site Agents (SA).

4.3 Project Organizational Structure and Implementation of Environmental Management Strategies

Table 4.0.3: Existence of Project Organogram

Description	Frequency	Percentage
Projects that have	42	100%
Projects without	0	-
Total	42	100%

Source: Research Data

Table 4.0.3 indicates that all the road projects have project staff organogram which indicates the project reporting structure.

Table 4.0.4: Type of Organizational Structure

Type of Organizational Structure	Frequency	Percentage
Line Organizational Structure	0	0
Functional Organizational Structure	0	0
Line and Staff Organizational Structure	0	0
Matrix Organizational Structure	0	
Project Organizational Structure	42	100%
Total	42	100%

Source: Research Data

As evident from table 4.0.4, all the road projects (100%) have Project Organizational Structure. This is a type of structure with a number of horizontal organization units to complete projects. The staff team is from diverse fields and is managed by a project Manager. The project staff is separate from and independent of the functional departments. This type of structure allows maximum use of specialist knowledge thus chances of failure are very less and project staff works as a team towards a common goal which results in high motivation.

Table 4.0.5: Efficiency of the channels of communication in the project

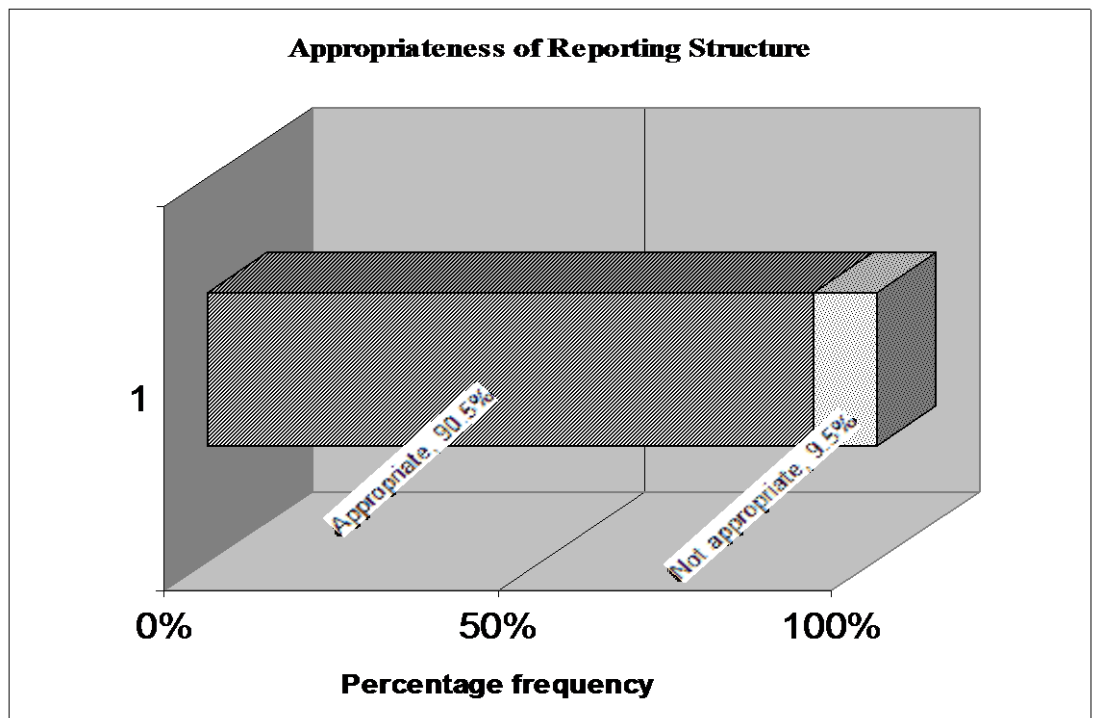
Description	Frequency	Percentage
Strongly disagree	6	14.3%
Disagree	16	38.1%
Slightly disagree	3	7.1%
Agree	17	40.3%
Strongly agree	0	0%
Total	42	100%

Source: Research Data

More than 40.3 % of the respondents agreed that communication channels are not efficient while 59.7% disagreed as shown in table 4.0.5 above. Organization structure provides communication channels in an organization.

This implies that the current project reporting structure is appropriate for developing shared understanding of environmental management activities and priorities. Effective communication is a key requirement for effective strategy implementation. Organizational communication plays an important role in training, knowledge dissemination and learning during the process of strategy implementation. Modern organizational structures combines both *centralized coordination* (top management) an *operational decentralization* (operation management).

Fig. 4.0.4 **Appropriateness of Reporting Structure**



Source: Research Data

Figure 4.0.4 indicates that 90.5% of the respondents indicated that the current reporting in road projects is appropriate while 9.5% indicated that the reporting structure is inappropriate. The respondents who indicated that the reporting

structure is not appropriate attributed this to lack of a resident environmental officer in most road projects.

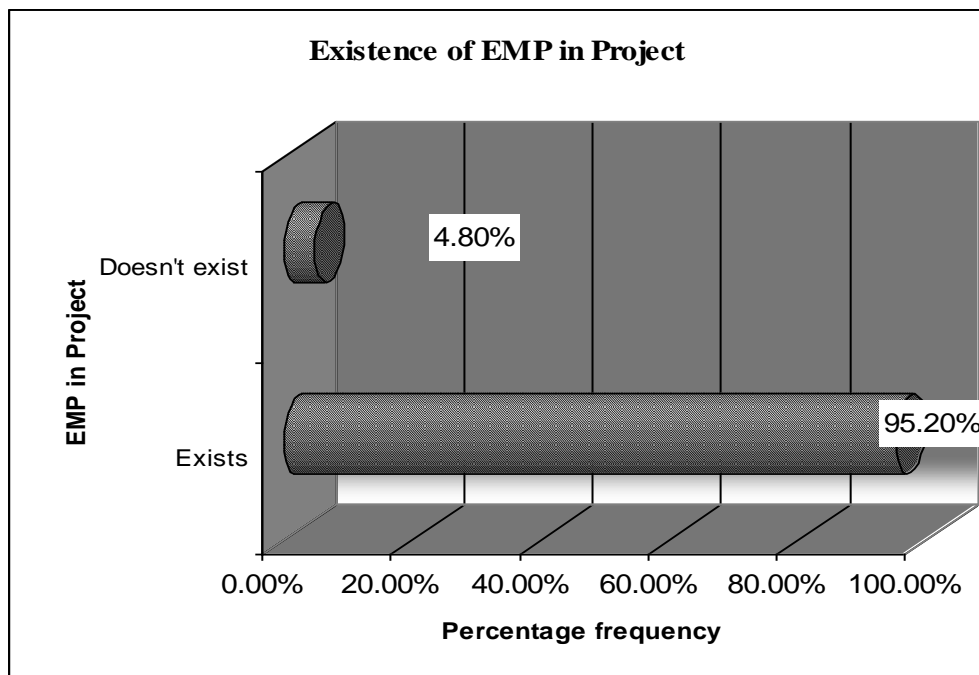
Table 4.0.6: Respondents opinion on environmental management decision making process

Description	Frequency	Percentage
Strongly disagree	4	9.5%
Disagree	22	52.4%
Slightly disagree	11	26.2%
Agree	5	11.9%
Strongly agree	0	0%
Total	42	100%

Source: Research Data

Table 4.0.6 indicates that more than 80 % of the respondents disagreed that decision making process on environmental management in the project is cumbersome while 20% disagreed. This implies that decisions on environmental management in project are quicker and easy to make.

Fig. 4.0.5: Existence of EMP in road Projects

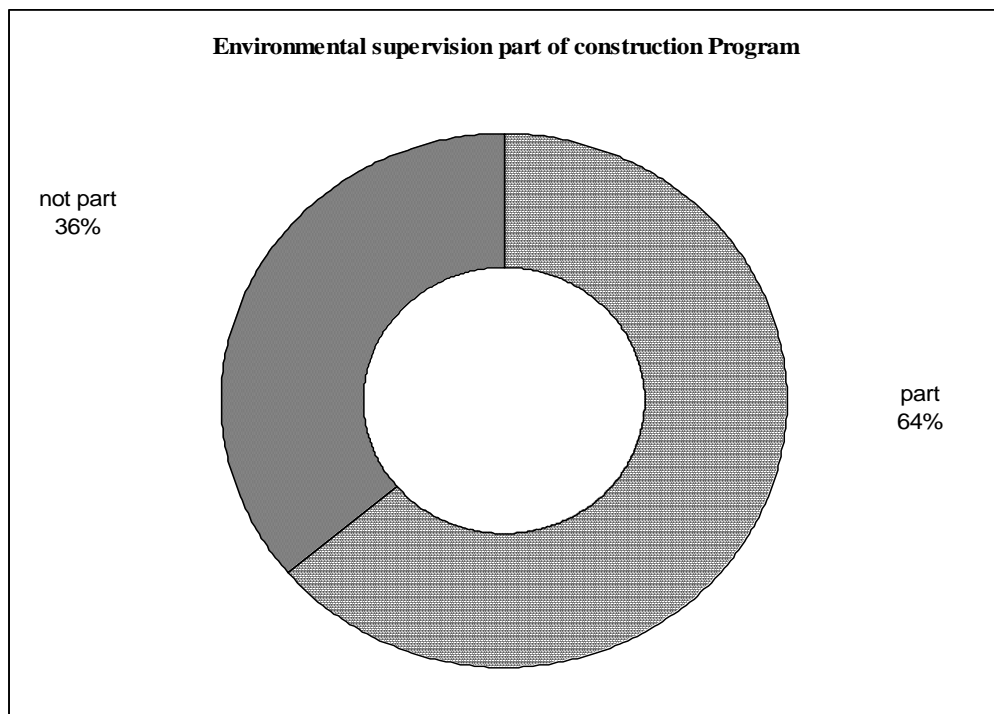


Source: Research Data

Figure 4.0.5 shows that 95.2 % of the respondents indicated that they have environmental management plan for road projects while 4.8 % of the respondents indicated that they have environmental management plan for road projects.

Asked why some projects don't have EMP, the respondents indicated that there is no specific requirement for EMP in the project contract, contractors don't have environmental specialist to prepare one and the EMP is not a billed item in the contract as some of the reasons.

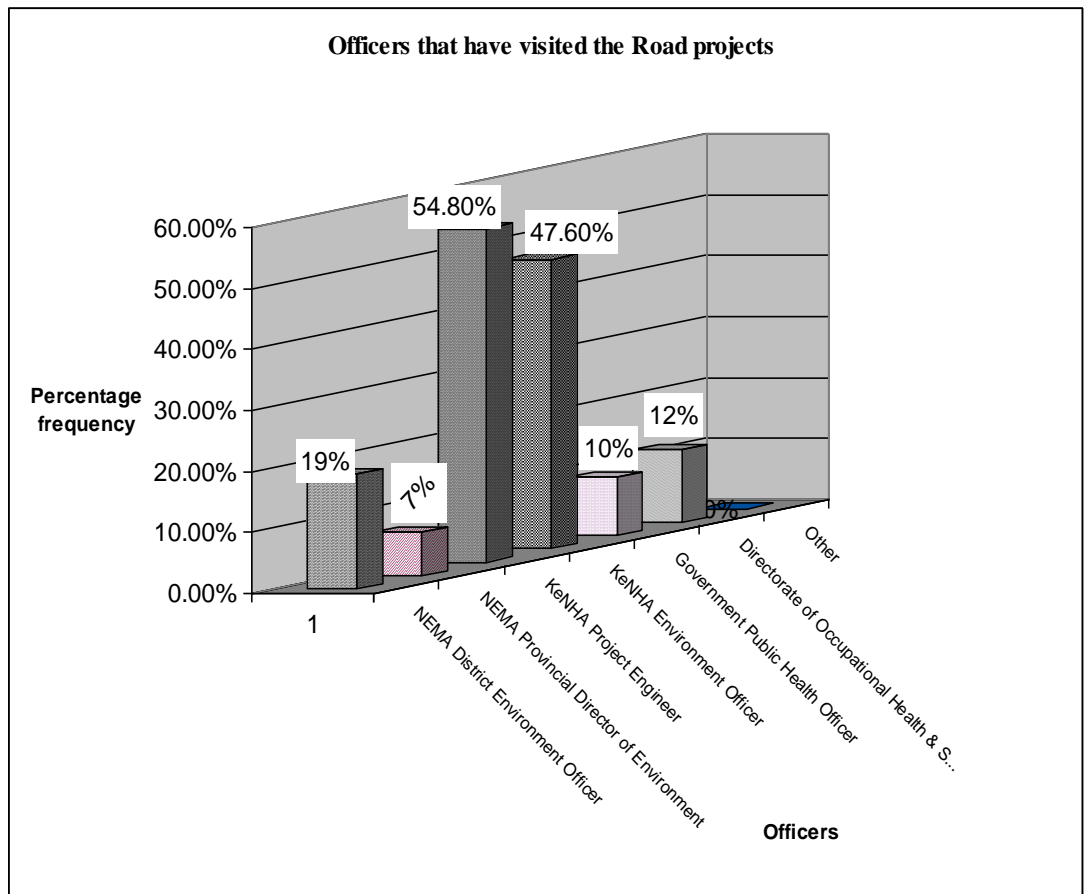
Fig. 4.0.6: Environmental supervision as part of construction work program



Source: Research Data

Figure 4.0.6 indicates that 64 % of the respondents indicated that environmental supervision is part of the road construction work program while 36 % of the respondents indicated that environmental supervision is not part of the road construction work program. For projects where environmental supervision is not part the road construction work program, it is not possible to monitor the implementation of environmental management plan.

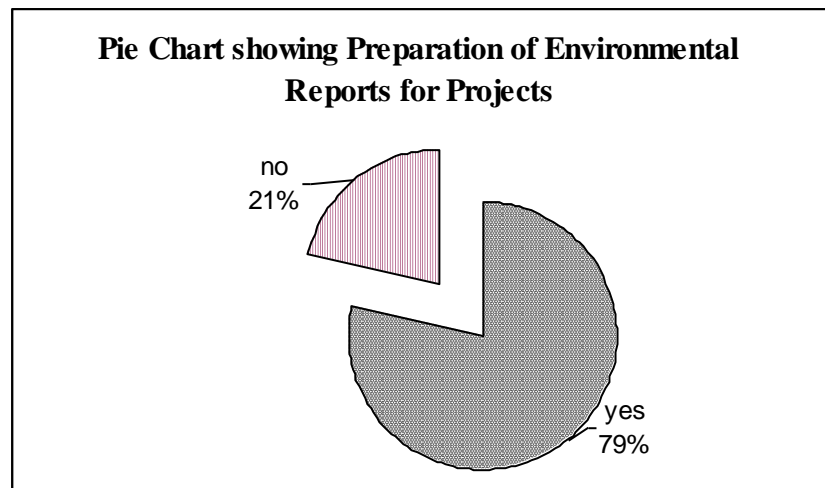
Fig. 4.0.7: Officers who have visited the road project to monitor environmental performance in the last three months



Source: Research Data

Figure 4.0.7 shows the officers who have visited road projects to monitor environmental performance. KeNHA project Engineer and Environment Officer top the least with 54.8% and 47.60% respectively. It is worth noting that officers from NEMA who are mandated by law the role of environmental inspection have made few visits to project sites (19% for NEMA District Environment Officer and 7% for NEMA District Environment Officer).

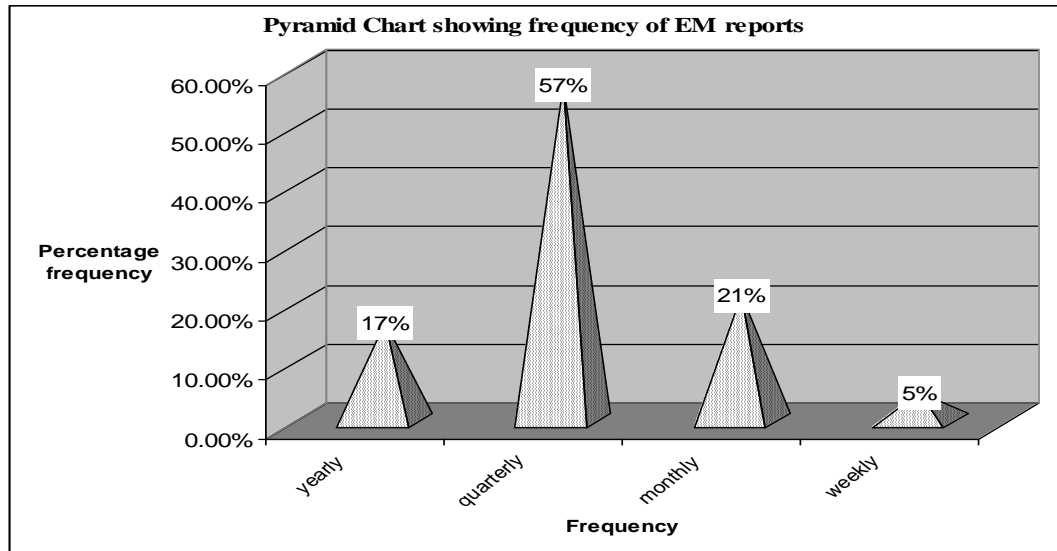
Fig. 4.0.8 Showing preparation of Environmental reports for projects



Source: Research Data

Figure 4.0.8 shows that 79 % of the respondents indicated that environmental monitoring reports are prepared for road projects while 21 % of the respondents indicated that environmental monitoring reports are not prepared for road projects. Reasons why environmental monitoring reports are not provided include it is not a requirement in the contract and lack of skilled staff to prepare them.

Fig. 4.0.9: Frequency of preparing Environmental Monitoring (EM) reports



Source: Research Data

Figure 4.0.9 provides information concerning the frequency of preparing environmental monitoring reports. 17 % of the respondents indicated that environmental reports are prepared yearly, 57 % indicated quarterly, 21% indicated monthly while 5% indicated weekly.

Table 4.0.7: Activities to improve environmental supervision during road construction

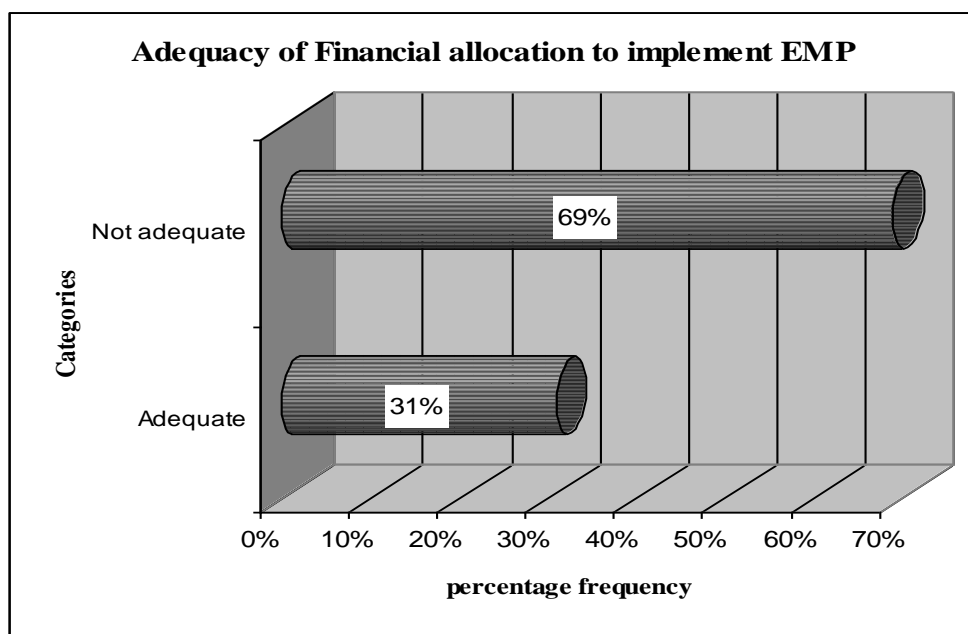
Activity	Frequency	Percentage
Increase the frequency of visits by field officers	3	7.1%
Involve local people and local community	4	9.5%
Increase the number of field officers	6	14.3%
Make EMP implementation part of the billed items	13	31.0%
External Auditors to audit environmental compliance	3	7.1%
More frequent audits and implement audit findings	16	38.1%
Provide more funds for monitoring environmental matters	26	61.9%
Engage Environmental specialist in road projects	21	50.0%
Penalties for Environmental noncompliance	6	14.3%
Training of road supervision staff	4	9.5%

Source: Research Data

Asked what activities that can be done to improve environmental supervision during road construction majority of the respondents (61.9%) indicated provision of more funds for monitoring environmental matters followed by engaging environmental specialists in road projects (50%) as shown in table 4.0.7.

4.4 Financial Resources for Implementing Environmental Management Strategies

Fig. 4.0.10: Adequacy of financial Allocations to implement EMP

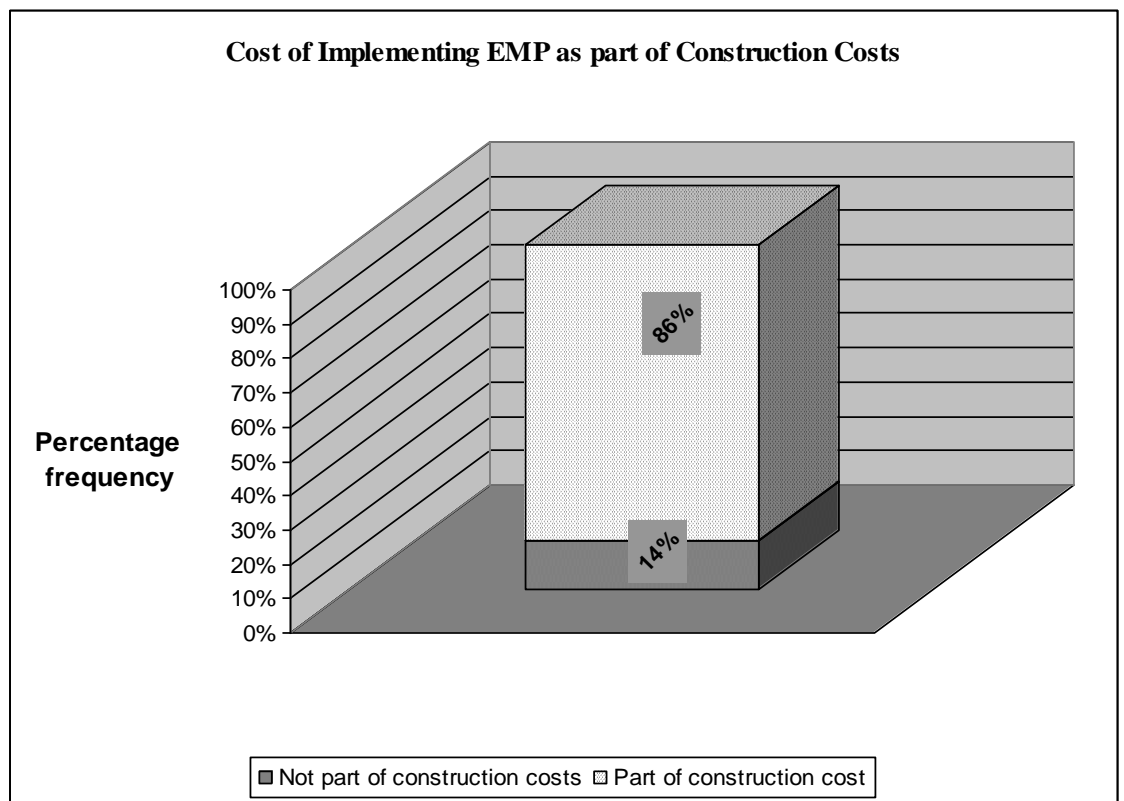


Source: Research Data

Figure 4.0.10 shows that majority (69 %) of the respondents indicated that inadequate financial resources have been allocated to implementation of Environmental Management Plans for road project. On the other hand 31 % of the respondents indicated that adequate financial resources have been allocated to implementation of Environmental Management Plans for road project. The

implication of this is that the environmental management strategies cannot be implemented without adequate financial resources. Financial resources are important if environmental management strategies are to be effectively implemented.

Fig. 4.0.11: Cost of implementing EMP part of road construction costs



Source: Research Data

Eighty Six percent of the respondents indicated that the cost of implementing Environmental Management Plan (EMP) is not part of road construction cost. On the other hand 14 % of the respondents indicated that the cost of implementing Environmental Management Plan (EMP) is part of road construction cost. The implication of this is that no financial resources are set

aside to implement environmental management strategies. This finding agrees with findings in Figure 4.0.11.

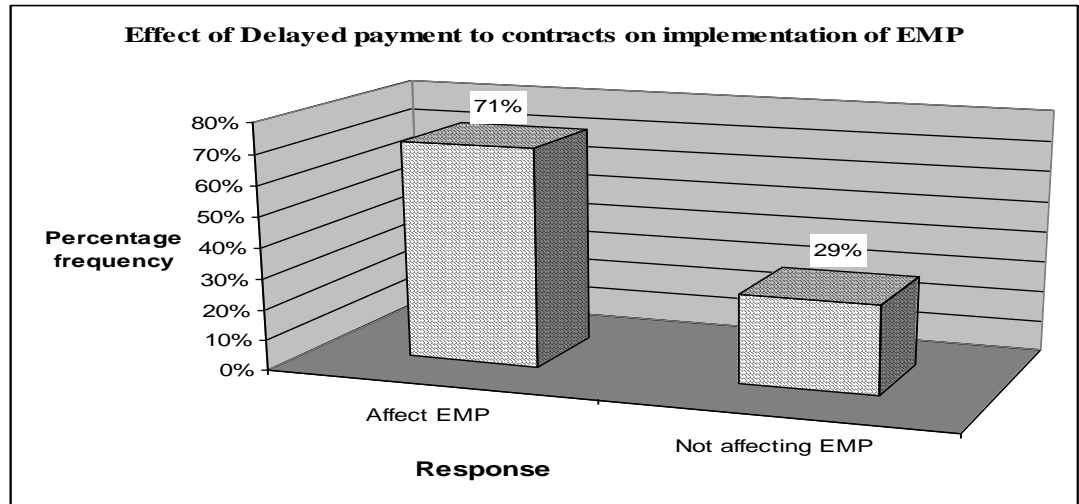
Table 4.0.8: Cost of implementing Environmental Management Plan as a bill item in road construction opinions.

Description	Frequency	Percentage
Strongly disagree	5	11.9%
Disagree	6	14.3%
Slightly disagree	2	4.8%
Agree	18	42.9%
Strongly agree	11	26.2%
Total	42	100%

Source: Research Data

Table 4.0.8 indicates that 69.1 % of the respondents agreed that cost of implementing Environmental Management Plan should be a bill item in road construction while 30.9 % disagreed. This implies that those involved in road project management would like this to be done to make environmental management in project effective. This will ensure that the contractors' environmental performance is measured. Balance Score Card model affirms that measurement motivates and this resonates well with Resources Dependence Theory.

Fig. 4.0.12: Opinion on whether delayed payment affects implementation of EMP



Source: Research Data

Majority of the respondents (71%) indicated that delayed payments to the contractors affect the implementation of Environmental Management while 29% of the respondents indicated delayed payments to the contractors do not affect the implementation of Environmental Management Plan. One of the reasons given by respondents why delayed payment doesn't affect EMP implementation is because EMP Implementation is not a bill item.

4.5 Environmental Legislations and Implementation of Environmental Management Strategies

Table 4.0.9: Presence of EIA License

Description	Frequency	Percentage
Projects which have	42	100%
Projects without	0	0%
Total	42	100%

Source: Research Data

Table 4.0.9 indicates that all the road projects have Environmental Impact Assessment License and per the requirements of EMCA, 1999. This is a good indication on environmental legislation compliance.

Table 4.0.10: Project stoppage due to lack of EIA Licence

Description	Frequency	Percentage
Not stopped	42	100%
stopped	0	0%
Total	42	100%

Source: Research Data

Table 4.0.10 show that no road projects has been stopped due lack of Environmental Impact Assessment License and per the requirements of EMCA, 1999. This is an indication of good compliance.

Table 4.0.11: Environmental audit for the road projects

Description	Frequency	Percentage
Done	6	14.3
Not Done	36	85.7
Total		

Source: Research Data

Majority of the respondents (36) indicated that environmental audit has been carried on the road projects (representing 85.7%) have carried out annual environmental Audit while the remaining percentage (14.7%) have not carried out the environmental audit. The reason for not having carried out environmental audit because the road projects have just started and not finished one (1) year. Environmental Audit is done annually as per EMCA, 1999.

Table 4.0.12 Initiation of Environmental Audit

Description	Frequency	Percentage
Project Engineer	13	31.0%
Resident Engineer	27	64.3%
Site Agent	3	7.1%
NEMA Officials	7	16.7%
Other	0	0%

Source: Research Data

When asked about who initiated the environmental audit to be carried out, 64.3% of the respondents indicated the resident Engineer, 31% indicated Project Engineer, 16.7% indicated NEMA officials while 7.1% indicated Site Agent. The ideal situation is that the Resident Engineer should be one to initiate and this should be in the work program.

4.6 Training/Education in Environmental Management

Table 4.0.13: Respondents training in Environmental Management

Description	Frequency	Percentage
Environmental Impact Assessment	16	38.1%
Environmental Audit	8	19.0%
Environmental Monitoring	8	19.0%
Social Impact Assessment	3	7.1%
Resettlement Action Plan Implementation	1	2.4%

Source: Research Data

Majority of the respondents (38.1%) indicated they have training in environmental impact assessment, 19% in environmental audit and environmental monitoring, 7.1% on social impact assessment and 2.4% on Resettlement Action Plan Implementation. For implementation of environmental management strategies, officers involved in road project management should be trained in all the areas.

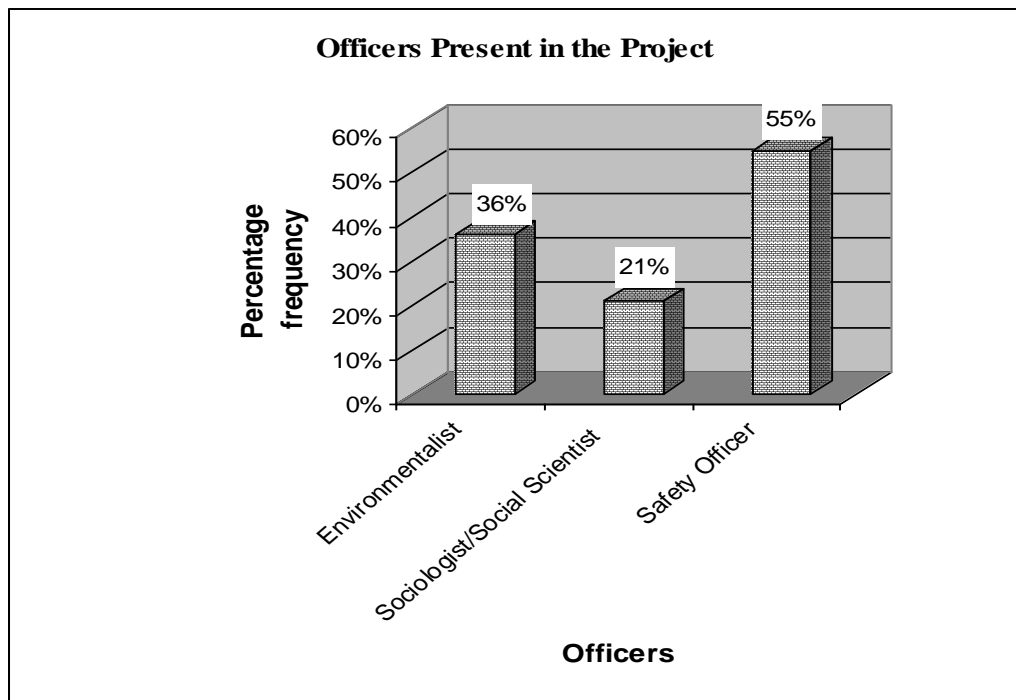
Table 4.0.14: Average Duration of respondent training in Environmental Management

Training Duration	EIA	EA	Environmental Monitoring	SIA	RAP Implementation
One week	7 (16.7%)	2 (4.8%)	5 (11.9%)	1 (2.4%)	0 (0%)
Two weeks	3 (7.1%)	3 (7.1%)	2 (4.8%)	1 (2.4%)	1 (2.4%)
Three weeks	3 (7.1%)	2 (4.8%)	1 (2.4%)	1 (2.4%)	0 (0%)
One Month	3 (7.1%)	1 (2.4%)	0 (0%)	0 (0%)	0 (0%)
Other	-	-	-	-	-

Source: Research Data

From the findings in Table 4.0.14 majority of the respondents (16.7%) who have attended training in Environmental Impact Assessment(EIA) spent a duration of one week to train, for Environmental Audit(EA), majority (7.1%) spent two weeks in training, for environmental monitoring, majority (11.9%) spent one week in training, for social impact assessment (SIA), majority (2.4%) spent one, two and three weeks in training while for resettlement action plan (RAP), majority (2.4%) spent two weeks in training. The duration spent in Environmental Impact Assessment training is not adequate.

Fig.4.0.13: Officers present in the road project



Source: Research Data

Majority of the respondents (55%) indicated that road projects have Safety Officers, 36% indicated that they have environmentalist while 21% indicated that they have sociologist/social scientist in their road projects. For effective implementation of environmental management strategies all road projects need to have the officers.

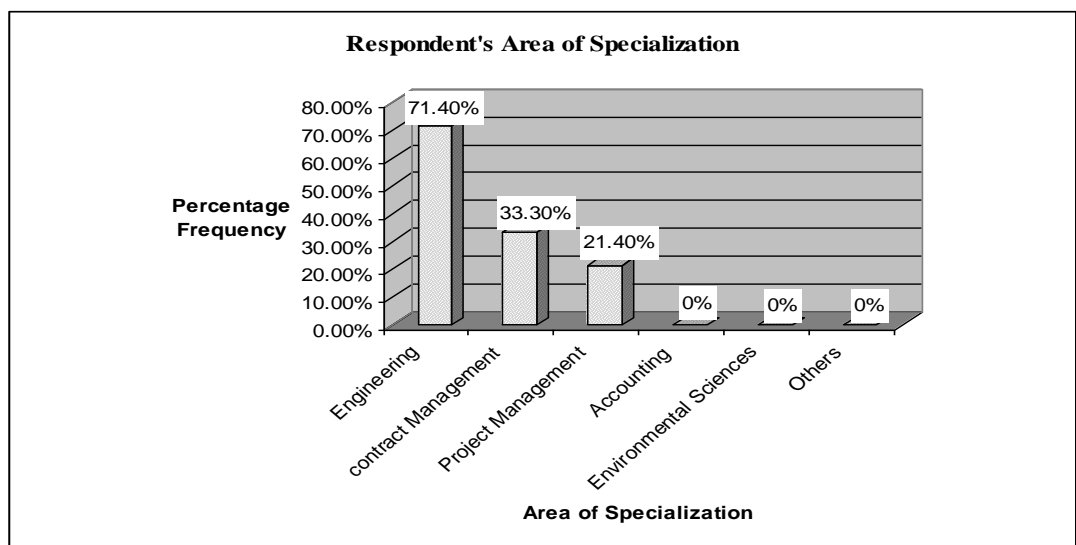
Table 4.0.15: Respondents rating of their skills in environmental Management

Description	Frequency	Percentage
Very high	0	0%
Somewhat high	3	7.1%
Neither high nor low	27	64.3%
Somewhat low	9	21.4%
Very Low	3	7.1%
Total	42	100%

Source: Research Data

When asked to rate their skills on environmental management, majority of the respondents (64.4%) indicated that its neither high nor low. 28.5% indicated that their skills are low while only 7.1 % indicated that it is high. The success of implementing environmental management strategies in road project need relevant environmental skills.

Fig. 4.0.14: Respondents area of specialization

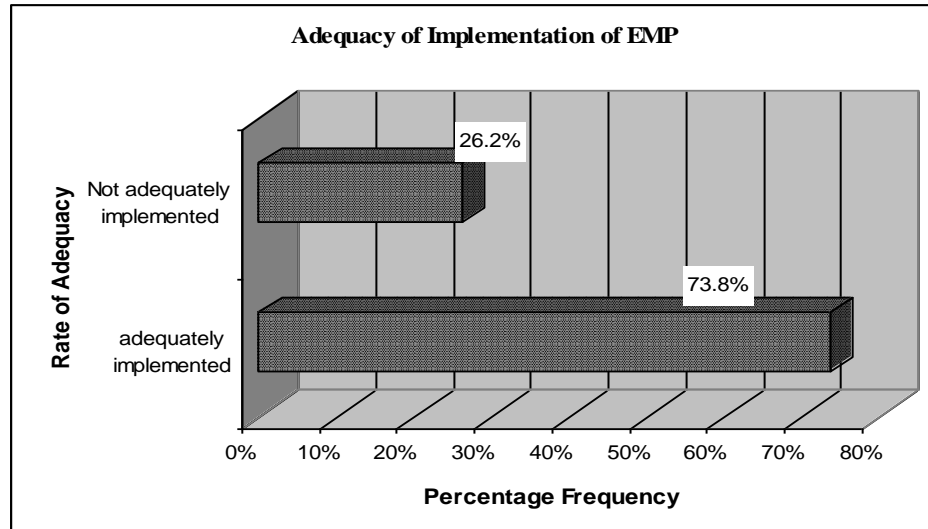


Source: Research Data

Figure 4.0.14 indicates that majority of the respondents (71.4%) are specialized in engineering, 33.3% in contract management and 21% in project management. None of the respondents is specialized in environmental sciences and accounting.

4.7 Implementation of Environmental Management Plans (EMP)

Fig. 4.0.15: Adequacy of implementation of EMP



Source: Research Data

Majority of the respondents (73.8%) indicated that Environmental Management Plans are adequately implemented while 26.2 % of the respondents indicated that Environmental Management Plans are not adequately implemented.

Table 4.0.16: Reasons why Environmental Management Plans are not adequately implemented

Reason	Frequency	Percentage
Lack of funds	7	16.7%
Time constraints	2	4.8%
Lack of training for supervision staff	4	9.5%
Contractors not taking EMP implementation seriously	11	26.2%
No permanent staff responsible for environment on site	15	35.7%
EMP not well articulated in the contract	18	42.9%
EMP not a bill item in the contract	20	47.6%

Source: Research Data

Respondents were asked to give reasons why EMPs are not adequately implemented. Majority of the respondents (47.6%) indicated that EMP is not a

billed item in the contract. Other reasons include: EMP is not well articulated in the contract (42.9%), no permanent staff responsible for environment on site (35.7%) and contractors not taking EMP implementation seriously (26.2%) among others.

Table 4.0.17: Adequacy of Environmental Management Plans implementation during road construction

Description	Frequency	Percentage
To a very great extent	0	0%
To a great extent	11	26.2%
To a moderate extent	31	73.8%
To a little extent	0	0%
To a very low extent	0	0%
Total	42	100%

Source: Research Data

When asked if environmental management plans are adequately implemented during road construction, majority of the respondents (73.8%) indicated that to a moderate extent while 26.2% indicated to a great extent.

Table 4.0.18: Effectiveness of the EMS

Environmental Management Strategy	% Rating				
	Very effective	Effective	Somewhat effective	Not Effective	Very ineffective
Rehabilitation of quarry sites	4 (10%)	8 (19%)	12 (29%)	18 (43%)	0 (0%)
Soil erosion control measures	6 (14%)	21 (50%)	10 (24%)	5 (12%)	0 (0%)
Tree planting & revegetation	5 (12%)	25 (59%)	9 (21%)	3 (7%)	0 (0%)
Soil & water pollution control	4 (10%)	14 (33%)	4 (10%)	20 (48%)	0 (0%)
Dust control	3 (7%)	5 (12%)	21 (50%)	13 (31%)	0 (0%)
Noise pollution controls	3 (7%)	6 (14%)	14 (33%)	19 (45%)	0 (0%)
Proper solid waste management	5 (12%)	12 (29%)	18 (43%)	6 (14%)	0 (0%)

Source: Research Data

Respondents we asked to rate the effectiveness of the environmental management strategies. Majority of the respondents (72%) indicated that rehabilitation of quarry sites is not effective,

Sixty four percent of respondents indicated that soil erosion control measures is effective, 71% indicate that tree planting and revegetation is effective, 58% indicated that soil and water pollution control is not effective, 81% indicated that dust control is not effective, 78% indicated that noise pollution controls and 57% indicated that solid waste management is not effective. This implies that most environmental management strategies are not implemented effectively.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter contains a summary of research findings, discussions conclusions drawn and recommendations on policy and practice made. The findings of the study are presented in respect to the key aspects of the objectives of the study. The chapter also covers areas of limitations of the study and suggestions further research.

5.2 Summary of Findings and Answers to Research Questions

The study was to find out if project organizational structure, environmental supervision, financial resources, environmental legislation and training and education of road construction staff affect implementation of Environmental Management strategies of Kenya National Highways Authority road construction projects. The study came out with findings on some of the determinants of implementation of environmental management strategies of public organizations in road construction sector in Kenya.

5.2.1 Effect of Project Organizational Structure

All the road projects have organogram which indicates the project reporting structure. The type of organizational structure adopted in all the projects is Project Organizational Structure. 80 % of the respondents disagreed that decision making process on environmental management in the project is cumbersome

while 20% agreed. More than 40.3 % of the respondents indicated that communication channels are not efficient while 59.7% disagreed.

All road construction projects have a program of works which gives work breakdown structure. Majority (64 %) of the respondents indicated that environmental supervision is part of the road construction work program while 36 % of the respondents indicated that environmental supervision is not part of the road construction work program. For projects where environmental supervision is not part the road construction work program, it is not possible to monitor the implementation of environmental management plan.

5.2.2 Financial Resources

Strategies fail when enough financial resources are not allocated to successfully implement them. Majority (69 %) of the respondents indicated that inadequate financial resources have been allocated to implementation of Environmental Management Plans for road project. On the other hand 31 % of the respondents indicated that adequate financial resources have been allocated to implement Environmental Management Plans. The implication of this is that the environmental management strategies cannot be implemented effectively without adequate financial resources. The central proposition is that the way the financial resources are allocated in the firm shapes the realized strategy of the firm.

Majority of the respondents (71%) indicated that delayed payments to the contractors affect the implementation of Environmental Management while 29% of the respondents indicated delayed payments to the contractors do not affect the implementation of Environmental Management Plan. One of the reasons given by respondents why delayed payment doesn't affect EMP implementation is because EMP Implementation is not a bill item. 69.1 % of the respondents agreed that cost of implementing Environmental Management Plan should be a bill item in road construction while 30.9 % disagreed. This implies that those involved in road project management would like this to be done to make environmental management in project effective. This will ensure that the contractors' environmental performance is measured. Balance Score Card model affirms that measurement motivates and this resonates well with Resources Dependence Theory.

5.2.3 Environmental legislation and polices

All the road projects have Environmental Impact Assessment License and per the requirements of EMCA, 1999 and no road project has been stopped due to lack of the necessary environmental licenses. Majority of the respondents (36) indicated that environmental audit has been carried on the road projects (representing 85.7%) have carried out annual environmental Audit while the remaining percentage (14.7%) have not carried out the environmental audit. The reason for not having carried out environmental audit because the road projects have just started and not finished one (1) year. Environmental Audit is

done annually as per EMCA, 1999. The road projects have complied with all applicable environmental legislations.

5.2.4 Training and Education of staff

Equipping the road construction management with the required environmental management skills will ensure that environmental management strategies are well implemented. Majority of the respondents (38.1%) indicated they have training in environmental impact assessment, 19% in environmental audit and environmental monitoring, 7.1% on social impact assessment and 2.4% on Resettlement Action Plan Implementation. For implementation of environmental management strategies, officers involved in road project management should be trained in all the areas. When asked to rate their skills on environmental management, majority of the respondents (64.4%) indicated that its neither high nor low. 28.5% indicated that their skills are low while only 7.1 % indicated that it is high. The success of implementing environmental management strategies in road project need relevant environmental skills. This is supported by Resource Based Approach Model which affirms that competencies and skills are strategic assets for a firm. McKinsey 7S model likes indicates that skills are needed in strategy implementation.

Majority of the respondents (71.4%) are specialized in engineering, 33.3% in contract management and 21% in project management. None of the respondents is specialized in environmental sciences and accounting. When

asked to rate their skills on environmental management, majority of the respondents (64.4%) indicated that its neither high nor low. 28.5% indicated that their skills are low while only 7.1 % indicated that it is high. The success of implementing environmental management strategies in road project needs relevant environmental skills.

Majority of the respondents (55%) indicated that road projects have Safety Officers, 36% indicated that they have environmentalist while 21% indicated that they have sociologist/social scientist in their road projects. For effective implementation of environmental management strategies all road projects need to have these officers. The presence of the officers throughout the construction phase will encourage attitudes and behaviours consistent with environmental protection objectives established for each project.

It was established from the study that environmental management plans are not adequately implemented during road construction (73.8% indicated that to a moderate extent while 26.2% indicated to a great extent). The reasons why implementation of EMPs is no effect include EMP is not billed item in the contract (47.6%), EMP is not well articulated in the contract (42.9%), no permanent staff responsible for environment on site (35.7%) and contractors not taking EMP implementation seriously (26.2%) among others. This calls for interventions to address the reasons identified.

Effective Environmental Management Strategy implementation is achieved when rehabilitation of quarry sites, soil erosion control measures, tree planting & revegetation, soil & water pollution control, dust control, noise pollution controls and proper solid waste management takes place in a road project. Respondents when asked to rate the effectiveness of the environmental management strategies. Majority of the respondents (72%) indicated that rehabilitation of quarry sites is not effective, 64% indicated that soil erosion control measures is effective, 71% indicate that tree planting and revegetation is effective, 58% indicated that soil and water pollution control is not effective, 81% indicated that dust control is not effective, 78% indicated that noise pollution controls and 57% indicated that solid waste management is not effective. This implies that most environmental management strategies are not implemented effectively. This implies that Environmental Management Strategy implementation in road projects is not very effective.

5.3 Conclusions

The reporting structure in the roads studied road project is appropriate for developing shared understanding of environmental management activities and priorities. Organizational structure is important in determining the implementation of Environmental Management strategies of Kenya National Highways Authority road construction projects. This implies that decisions on environmental management in project are quicker and easy to make.

The environmental supervision in most roads is not part of the road construction work program. For projects where environmental supervision is not part the road construction work program, it is not possible to monitor the implementation of environmental management plan.

Adequate financial resources have not been allocated in road projects to implement environmental management strategies. The implication of this is that the environmental management strategies cannot be implemented effectively without adequate financial resources. Likewise delayed payments to the road construction contractors affect the implementation of Environmental Management.

Compliance to all environmental legislation is important in implementing environmental management strategies. All the road projects have Environmental Impact Assessment License and per the requirements of EMCA, 1999 and no road project has been stopped due to lack of the necessary environmental licenses. Annual environmental Audit has been carried for road projects where it is due.

The project staff involved in road construction projects management lack the necessary environmental management skills. The success of implementing environmental management strategies in road project needs relevant

environmental skills. Most road projects lack the services of environmentalist, sociologist and safety officer.

The study established that environmental management plans are not adequately implemented during road construction. This is because EMPs is no effect include EMP is not billed item in the contract, EMP is not well articulated in the contract, no permanent staff responsible for environment on site and contractors not taking EMP implementation seriously among others.

Effective Environmental Management Strategy implementation is achieved when rehabilitation of quarry sites, soil erosion control measures, tree planting & revegetation, soil & water pollution control, dust control, noise pollution controls and proper solid waste management takes place in a road project.

5.4 Recommendations on Policy and Practice

One of the reasons why Environmental Management Plans are not adequately implemented is because Environmental Management Plans are not a bill item in the road contract. This makes Contractors not to take the implementation Environmental Management Plans seriously. There is need for KeNHA to include environmental management in the bill of quantities (BOQ) during the tendering. This will ensure that environmental management strategy activities are itemized. It will also detail the terms and conditions of the road construction to enable a contractor to price the work for which he or she is bidding. The inclusion of environmental management elements in the contract documents of road

construction projects is a sustainable development strategy. This will offer leverage to project implementers in improving environmental performance.

Limited financial resources are a key issue in successful strategy implementation. The Implementation of Environmental Management strategies in road project require substantial financial resources. This is because road construction is an extractive industry whereby a lot of materials are extracted from the environment and the environment is damaged. All the road projects in the study have environmental management plans but no adequate financial resources are allocated to implement them. KeNHA should dedicate adequate financial resources in project budget to be used in environmental management. There should be no trade-off between environmental performance and financial performance. Environmental performance and financial performance are interrelated.

A program of works detailing schedule of the various construction tasks to be performed, length of time needed, resources needed, anticipated obstacles and measurable outputs is important. Scheduling of activities reduces chances of incurring losses. When preparing work program for civil works, KeNHA should ensure that environmental supervision forms part of the road construction work program in all the KeNHA road projects.

Effective Management of the Environment requires trained human resources who are skilled and knowledgeable in environmental issues. Successful execution of environmental management strategies depends greatly on competent personnel. KeNHA should ensure that the personnel involved in road project management need to be adequately training in environmental management. The training should be on Environmental Impact Assessment, Environmental Audit, Environmental Monitoring, Social Impact Assessment and Resettlement Action Plan Implementation and should take at least two (3) weeks. Likewise each project should have a resident Environmentalist, Sociologist and Safety Office.

5.5 Suggestions for further research

It is suggested that Further Research be undertaken on the following:

- i) Effective systems and tools in Environmental Monitoring and Evaluation of road projects.
- ii) Strategies and mechanisms of integrating environmental management plans into road construction work programs.
- iii) Potential of inclusion of environmental management elements in road construction contract documents.

REFERENCES

- Aaker, D. A. (1996). *Building Strong Brands*. New York: The Free Press.
- Adele., J.H. (2011). *Effective Strategy Implementation: Conceptualizing Firm's Strategy Capabilities and Assessing the Impact on Firm Performance*. Springer: Stefanic-Brich, Sabina Scholler.
- Andrews, K.R. (1999). *The Concept of Corporate Strategy*. New York: Primis Custom Publishing.
- Ansoff, I. (1990). (Ed): *Implanting Strategic Management*. Europe: Prentice Hall.
- Baird, L. & Meshoulan, I. (1998). Managing two fits of strategic human resource Management, *Academy of Management Review*, 13(1), 116-128.
- Baron, Joan Boykoff and Sternberg, Robert J. (1986). *Teaching Thinking Skills: Theory and Practice*. New York: Routledge.
- Barrett, S. (1991). Environmental Regulation for Competitive Advantage. *Business Strategy Review*, 2(1), 1-15
- Barrow, C.J (2005). *Environmental Management and Development*. New York: Routledge.
- Berle, G. (1991). *The Green Entrepreneur: Business Opportunities that can Save the Earth and Make you Money*. Blue Ridge Summit, PA: Liberty Hall Press
- Bogdan, R.C., & Biklen, S.R. (1982). *Qualitative Research for Education: An Introduction to Theory and Methods*. Boston: Allyn and Bacon Press.
- Bologun.J. Hailey, V.H., Johnson, G. & Scholes, K. (1999). *Exploring Strategic Change*. London: Prentice Hall.
- Borg, W.R., & Gall, M.D. (1983). *Educational Research: An Introduction*. New York: Longman.
- Boulding, K. (1996). General Systems Theory — the Skeleton of Science. *Management Science*, 2 (3), 197-298.
- Boxall, P. (1996). The strategic HRM debate and the resource-based view of the firm. *Human Resource Management Journal*, 6(3), 59-75.
Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/j.1748-8583.1996.tb00412.x/> abstract

- Braganza, A., and Korac-Kakabadzi, N. (2000). Towards a function and process orientation: Challenges for business leaders in the new millennium. *Strategic Change*, 9(1), 45-53. Retrieved from <http://www.strategicmanagementreview.com/doi/pdf/10.4128/1930-4560-6.1.98>
- Bruntland, G. H. (1991). *Our Common Future*. Oxford: Oxford University Press.
- Byars, L. (1991). *Strategic Management, Formulation and Implementation – Concepts and Cases*. New York: HarperCollins.
- Charles Hill, Gareth Jones. (2010). *Strategic Management Theory: An Integrated Approach*. Ohio: South-Western, Cengage Learning.
- Checkland, P.B. (1981). *Systems Thinking, Systems Practice*. New York: John Wiley & Sons Ltd.
- Cooper, L. (2000). Strategic marketing planning for radically new products. *Journal of Marketing*, 64(1), 1-15.
- Clayton, B.D., & Bass, S. (2009). The Challenges of Environmental Mainstreaming. Experience of Integrating Environment into Development Institutions and Decisions. London, United Kingdom: *Environmental Governance* No.1
- Conlow, R. (2001). *Excellence in Supervision. Essential Skills for New Supervisor*. Menlo Park, California: Crisp Learning.
- Crittenden, V. L., & Crittenden, W. F. (2008). Building a capable organization: The eight levers of strategy implementation. *Business Horizons*, 51(4), 301-309.
- Crognale, G. (ed) (2006). Environmental Management Strategies: The 21st Century Perspective. *Environmental Management and Engineering Series*. Vol.5.
- Dawidoowicz, P. (2010). *Literature Review made easy: A quick guide to success*. USA: Information age publishing Inc.
- Egelhoff, W.G. (1993). Great Strategy or Great Strategy Implementation-Two ways of competing in Global Markets. *Sloan Management Review*, 34(4), 375-87.
- Farjoun, M. (2002). Towards an Organic Perspective on Strategy. *Strategic Management Journal*, 23(7), 561-594.
Retrieved from: <http://onlinelibrary.wiley.com/doi/10.1002/smj.239/abstract>
- Floyd, S.W & Wooldridge, B. (2000). *Building Strategy from the Middle: Reconceptualising Strategy Process*. California: Sage.

- Floyd, S.W., and Wooldridge., B. (1992). Middle Management Involvement in Strategy and its Association with Strategic Type: A research Note. *Strategic Management Journal*, 13(5), 153-167.
- Frankel, C. (1998). *In earth's company: business, environment and the challenge of sustainability*. New Society Publishers: Stony Creek, CN
- Freedman, M. (2003). The genius is in the implementation. *Journal of Business Strategy*, No.March-April, 26-31.
Retrieved from http://www.accessmylibrary.com/coms2/summary_0286-22615018_ITM
- Gladwin, T. (1993). The Meaning of Greening: A Plea for Organizational Theory. In *Environmental Strategies for Industry*. Fischer, K and Schot, J (eds). Washington DC: Island Press.
- Gladwin, T., Kennelly, J.J. & Krause, T.S. (1995). Shifting Paradigms for Sustainable Development – Implications for Management Theory and Research. *Academy of Management Review*, 20 (4), 874-907.
- Grant, R.M. (2002). *Contemporary Strategy Analysis*. Blackwell: Oxford.
- Greeno, J. L. & Robinson, S. N. (1992). Rethinking Corporate Environmental Management.*The Columbia Journal of World Business*. 27(3), 222
- Hambrick, D.C and Cannella, A.A (1989). Strategy Implementation as substance and Selling. *Academy of Management Executive*, 3(40), 278-85.
- Hart, C. (1998). *Doing Literature Review: Releasing the social science Research Imagination*. United Kingdom. London: Sage Publication.
- Hart, S. (1997). Beyond greening: Strategies for a sustainable world. *Harvard Business Review*, 75(1),67–76.
Retrieved from <http://www.eco-advantage.com/articlesCase.php>
- Heide, M., Grønhaug, K.,and Johannessen, S. (2002). Exploring Barriers to The Successful Implementation of a Formulated strategy. *Scandinavian Journal of Management*, 18, 217-231.
- Heiskanen., E. (2002). The Environmental Agenda in Organization and Management Research– Towards Interdisciplinarity? *The Journal of Transdisciplinary Environmental Studies* 1(2), 2002
- Hunt, S. (1995). The resource-advantage theory of competition. The Resource-Advantage Theory of Competition Toward Explaining Productivity and Economic Growth. *Journal of Management Inquiry*, 4(4), 317-322.

- Hutchinson, C. (1992). Corporate Strategy and the Environment. *Long Range Planning*, 25 (4), 9-21
- Jauch, L. R., & Glueck, W. (1988). *Business Policy and Strategic Management*. New York: McGraw-Hill,
- Jennings, P.D. & Zandbergen, P.A. (1995). Ecologically Sustainable Organizations – An Institutional Approach. *Academy of Management Review*, 20 (4), 1015-1052.
- Jobst, C. (Ed.). (1998). *Freie Universität, Berlin, Germany Environmental Management in European Companies. Success Stories and Evaluation*. Amsterdam: Gordon & Breach Science Publishers. Johnson., Scholes, K., & Whittington, R. (2006). (Eds): *Exploring Corporate Strategy*. London :Prentice Hall.
- Johnson, G. and Scholes, K. (1993). *Exploring Corporate Strategy – Text and Cases*. New York: Prentice-Hall.
Retrieved from: http://www.amazon.com/Exploring-Corporate-Strategy-Cases-Edition/dp/027371192X#reader_027371192X
- Kakabadse A. & Myers A. (1995). Qualities of top management: comparisons of European manufacturers. *The Journal of Management Development*, 14(1), 5-15.
- Kaplan, R.S., and Norton, D.P. (1996). *The Balanced Scorecard: Translating Strategy Into Action*. Boston: The Harvard Business School Press.
- Kathuri, J.N., and Pals, D.A. (1993). *Introduction to Educational Research*. Njoro: Egerton University Press.
- Keller, K.L and Lehmann, D.R. (2006). Brands and Branding: Research Findings and Future Priorities. *Marketing Science*, 25(6), 740-59.
- Kivisaari, S. & Lovio, R. (1996). Greening of management and technology studies: do we need reconceptualization? In Kivisaari and Lovio (eds.): *Bright Ideas? - Environmental management in Finnish perspectives*. Helsinki: Helsinki School of Economics.
- Koehn, K. (1991). History of Environmental Management In Kenya. In Calestous, J., and Kiriro, A., (Eds.) *Gaining Ground: Institutional Innovations and Land-use Management in Kenya*.45-60. Nairobi: Acts Press.
- Kothari, C.R. (1985). *Research Methodology*. New Delhi: Wiley Eastern Limited.

- Kothari, C.R. (2004). *Research Methodology: Methods and Techniques*. New Delhi: New Age International Publishers.
- Kotter, J. & Schlesinger, L. (1991). Choosing strategies for change. *Harvard Business Review*, 24-29. Retrieved from: <http://hbr.org/2008/07/choosing-strategies-for-change/ar/1>
- Kunzmann, K.R., & Deicioglu, K.T. (1985). *Environmental Education and Training in and for Developing Countries*. Third World Planning Review, Vol.,7 45-68.
- Langley JG, Nolan K.M, Nolan T.W. (1996). The improvement guide: a practical approach to enhancing organizational performance. New York: Jossey-Bass.
- Lahteenmaki, S., Storey, J. & Vanhala, S. (1998). HRM and company performance: The use of measurement and the influence of economic cycles. *Human Resource Management Journal*, 5(2), 51-65.
- Lawrie, G. & Cobbold, I. (2004). Third Generation Balanced Scorecard: Evolution of an Effective Strategic Control Tool. *International Journal of Productivity and Performance Management*, 53(7), 611-623.
- Little, A.D. (1991). *Seizing Strategic Environmental Advantage*. London: Centre for Environmental Assurance.
- Lorange, P. & Murphy, D. (1984). Bringing human resource strategy into strategic planning: systems design considerations. In *Strategic Human Resource Management*. C. Fombrun et al (Eds). New York: Wiley.
- Lundy, O. (1994). From Personnel Management to Strategic Human Resource Management. *The International Journal of Human Resource Management*. 5(3), 687-717.
- Mabey, C., Salaman, G. & Storey, J. (1998). *Strategic human resource management*. London: SAGE Publications.
- Mintzberg, H. (1994). *The Rise and Fall of Strategic Planning*. New York: Prentice Hall,
- Mintzberg, H. (1987(a)). The Strategy Concept I: Five Ps for Strategy. *California Management Review*, 30 (1), 11-24.
- Morten, H., Kjell, G., and Simen, J., (2002). Exploring Barriers to the successful implementation of formulated strategies. *Scandinavian Journal of Management*, 18(2), 217-231.
Retrieved from
<http://www.sciencedirect.com/science/article/pii/S0956522101000070>

- Mugenda, O., & Mugenda, A. (1999). *Research Methods Qualitative and Quantitative Approaches*. Nairobi: Acts Press.
- Mungai, I.W. (2007). *Integrating Strategy Formulation and Implementation: A Case of the Commercial Banking Industry in Kenya*. Unpublished M. B. A Project, University Of Nairobi.
- Najab., A & Runnalls, D. (2007). *Environment and Globalization: Five Propositions*. International Institute for Sustainable Development. Manitoba, Canada.
- Niven, P.R. (2002). *Balanced Scorecard Step by Step*. New York: John Wiley & Sons.
- Noble, C.H. (1999). The Eclectic Roots of Strategy Implementation Research. *Journal of Business Research*, 45(2), 119-134.
Retrieved from
<http://www.sciencedirect.com/science/article/pii/S0148296397002312>
- Norcia, V. (1993). Environmental Performance and Competitive Advantage in Canada's Paper Industry. *Business Strategy and the Environment*, 2 (4), 1-9
- Nyatwang'a, B.W. (2007) .*Urban Neighbourhood Environmental Planning: Case of Karen and Langata, Nairobi*. Unpublished MPhil Thesis, Moi University.
- Okidi, O. & Mbote-Kameri.P. (Eds). (2001). *The Making of a Framework Environmental Law in Kenya*. UNEP-ACTS Publication Series on Environmental Law and Policy in Africa.
- Okumus, F., Roper, A. (1999). A review of disparate approaches to strategy implementation in hospitality firms. *Journal of Hospitality and Tourism Research*, 23(1), 21 -38.
- Oliver, P. (2012). *Succeeding with your Literature Review: A handbook for students*. Berkshire, England: Open University Press.
- Pearce II, J. A. & Robinson, JR. R. B. (1997). *Strategic Management Formulation, Implementation and Control*. Chicago: McGraw Hill.
- Pelesikoti, N. (2003). *Sustainable Resource and Environmental Management in Tonga: Current Situation, Community Perceptions and a Proposed New Policy Framework*. Unpublished doctoral dissertation, University of Wollongong, Australia.
- Pfeffer, J. (1982). *Organizations and Organization Theory*. MA: Marshfield.

- Pfeffer, J. and Salancik, G. R. (1978). *The External Control of Organizations: A Resource Dependence Perspective*. New York: Harper and Row.
- Piasecki, B. (1995). *Corporate Environmental Strategy*. New York: Wiley.
- Piercy, N.F. (1998). Marketing Implementation: The Implication of Marketing Paradigm weakness for the strategy Execution Process. *Journal of the Academy of Marketing Science*, 26(3), 222-36.
- Peters, T., & Waterman R. H. (1982). *In Search Of Excellence: Lessons from America's Best Run Companies*. New York: Harper and Row,
- Porter, M. E. (1985). *Competitive Advantage: New York: The Free Press*.
- Prahalad, C. & Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review*, 68(3), 79-91.
- Pryor, M.G., Anderson, D., Toombs, L.A., and Humphreys, J.H. (2007). Strategic Implementation as a core competency. *Journal of Management Research*. South Asia Publications.
- Quinn, J., (1988(a)) Strategies for Change. In Quinn, J. B., Mintzberg, H., and James, R., (Eds), *The Strategy Process: Concepts, Contexts and Cases*. U.K: Prentice-Hall International.
- Quinn, J., (1988(b)) Strategic Change: Logical Incrementalism. In Quinn, J. B., Mintzberg, H., and James, R., (Eds). *The Strategy Process: Concepts, Contexts and Cases*. U.K: Prentice-Hall International.
- Rapert, M.I., Velliquette, A & Garretson, I.A. (2002). The Strategic Implementation Process: Evoking Strategic Consensus through Communication. *Journal of Business Research*, 55(4), 301-310.
- Republic of Kenya. (2000) *Environmental Management and Coordination Act (EMCA)*, 2000. Nairobi: Government Printer.
- Republic of Kenya. (2003) *Environmental Management and Coordination Act (EMCA)*, Environmental Impact Assessment and Audit Regulation 2003 (Legal Notice 101 of 2003). Nairobi: Government Printer.
- Republic of Kenya. (1979) *National Development Plan, 1979-83*. Nairobi: Government Printer.
- Republic of Kenya. (1989a). *National Development Plan, 1989-93*. Nairobi: Government Printer.

- Republic of Kenya. (1994a). *National Development Plan, 1994-96*. Nairobi: Government Printer.
- Republic of Kenya. (2010) *The Constitution of Kenya*. Nairobi: Government Printer.
- Ridley, D. (2008). *The Literature Review: A step-by-step Guide for students*. United Kingdom, London: Sage publications.
- Robbins, S. & Barnwell, N. (1998). *Organization Theory: Concepts and Cases*. Sydney: Prentice-Hall.
- Roome, N. (1992). Developing Environmental Management Strategies. *Business Strategy and the Environment*. 1(1), 11-24.
- Rushton, B. M. (1993). How Protecting the Environment Impacts R&D in the United States. *Research Technology Management*, May-June 1993, 13-21
Retrieved from <http://www.readabstracts.com/Engineering-and-manufacturing-industries/US-Standards-Group-seeks-comment-on-committee-drafts-of-ISO-revisions.html>
- Schaao, J.I. (2006). Toward Strategy Implementation Success: An Empirical Study of the Role of Senior-Level Leaders in NEVADA Gaming Industry. *UNLV Gaming Research and Review Journal*, 10(2), 1-13.
- Shrivastava, P., and Scott, H. I. (1992). Corporate Self-Greenewal: Strategic Responses to Environmentalism. *Business Strategy and the Environment*, 1(3), 9-20
Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/bse.3280010303/abstract>
- Shrivastava, P. & Hart, S. (1994). Greening Organizations – 2000. *International Journal of Public Administration* 17 (3/4): 607-635.
- Shrivastava, P. (1995). The role of corporations in achieving ecological sustainability. *Academy of Management Review* 20 (4), 936-960.
- Smith, S. M., & Haugtvedt, C. P. (1997). *Implications of Understanding Basic Attitude Change Processes and Attitude Structure for enhancing Pro-environmental Behaviors*. In M. J. Polonsky & A. T. Mintu-Wimsatt (Eds.), *Environmental Marketing*. (pp. 155-176). Binghamton, NY: Haworth Press.
- Starik, M. & Rands, G.P. (1995) .Weaving an integrated web – multilevel and multisystem perspectives of ecologically sustainable organizations. *Academy of Management Review*, 20 (4), 908-935.

- Sterling, J. (2003) Translating strategy into effective implementation: Dispelling the myths and highlighting what works., *Strategy & Leadership*, Vol. 31 Iss: 3, 27 - 34
- Stikker, A. (1992). Sustainability and Business Management. *Business Strategy and the Environment*, 1(3), 1-8.
- Storey, J. (1998). Do human resources really have a role in strategy? *Financial Times Mastering Management*, 9, 14-18.
- Thompson, A. A., & Strickland, A. J. (1989). *Strategy Formulation and Implementation: Tasks of the Manager*. Boston: Richard Irwin.
- Thompson, A. A., & Strickland, A. J. (2003). *Strategic Management: Concepts and Cases*. Boston: McGraw-Hill,
- Thompson Jr. A.A., Strickland III, A. J., & Gamble J. E. (2008). (Eds): *Crafting and Executing Strategy: The quest for Competitive Advantages: Concepts and Cases*. USA: McGraw –Hill, Irwin.
- UN Global Compact, (2009). *Corporate Governace: The Foundation for Corporate Citizenship and Sustainable Business* UN, New York: UN Global Impact and International Finance Corporation.
- United Nations Environment Programme & International Labour Office. (1990). *Environmental Management Training Course for Employer's Organizations*. Geneva: UNEP and ILO.
- Wamicha, W.N., & Mwanje, J.I (2000). *Environmental Management in Kenya: Have the National Conservation Plans Worked?* Environmental Forum Publications Series, No.2 Organization for Social Science Research in Eastern and Southern Africa (OSSREA), Ethiopia.
- Welford, R. J. (1995). *Environmental Strategy and Sustainable Development: The Corporat Challenge of the 21st Century*. London: Routledge.
- World Bank. (1995). *Mainstreaming the Environment: The World Bank Group and the Environment since the Rio Earth Summit*. Washington, DC: World Bank.
- World Bank. (2004). *Environmental Management in Russia: Status, Directions and Policy Needs*. Environmentally and Socially Sustainable Development Unit, Europe and Central Asia Region.
- World Commission on Environment and Developmenet (WCED). (1987). *Our Common Future*. London: Oxford University Press.

Waterman, R.H., Peters, T.J. & Phillips, J.R. (1980). Structure is not Organization. *Business Horizons*, 1980, 14-26.

Retrieved from www.tompeters.com/docs/Structure_Is_Not_Organization.

Yuki, G., and Lepsinger, R (2007). Getting it done: Four ways to translate strategy into results. *Leadership in Action*, 27(2) May/June 2007. Retrieved from http://www.centerforcreativeleadership.com/leadership/pdf/publications/lia/lia27_2Getting.pdf

Online articles

BNET Business Directory (2007). Strategic analysis.

<http://dictionary.bnet.com/definition/Strategic+Analysis.html> [Accessed 24 December 2012]

Boulton, Dr. W.R. (2001). Understanding the strategic analysis model.

www.auburn.edu/~boultwr/index.html [Accessed 7 January 2013]

Businessballs (2006). . PEST market analysis tool

www.businessballs.com/pestanalysisfreetemplate.htm [Accessed 12 February 2013]

Encyclopedia of Business 2nd ed. Strategy Implementation Issues.

<http://www.referenceforbusiness.com/management/Sc-Str/Strategy-Implementation.html#ixzz2IVHzoEPt> [Accessed 12 March 2013]

Encyclopedia of Business 2nd ed. Strategy Implementation.

<http://www.referenceforbusiness.com/management/Sc-Str/Strategy-Implementation.html#ixzz2IVHls4jJ> [Accessed 12 March 2013]

Norland-Tilburg, E. V. (1990). Controlling error in evaluation instruments.

Journal of Extension, [On-line], 28(2). Available at

<http://www.joe.org/joe/1990summer/tt2.html>

APPENDICES

Appendix 1: Questionnaire

Serial Number_____

I am a Master of Business Administration student at Kenyatta University. As part of this course, I am carrying out a research on “**DETERMINANTS OF IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT STRATEGIES OF PUBLIC ORGANIZATIONS IN ROAD CONSTRUCTION SECTOR IN KENYA, CASE OF KENYA NATIONAL HIGHWAYS AUTHORITY**”.

This is to kindly request you to fill in this questionnaire by responding to the questions concerning your experiences and perceptions on the subject. The information gathered shall be treated with confidence and shall be used for this study only.

Kindly answer all the questions to the best of your ability. Indicate with a tick (√), Circle (O) or fill in the space (s) provided.

Road Project Name:_____

SECTION A: GENERAL INFORMATION

1. What is your gender? Male [] Female []
2. Your age bracket
 - 18-24 Years [] 25-30 Years []
 - 31-34 Years [] 35-40 Years []
 - 41-44 Years [] 45-50 Years []
 - Over 51 Years []
3. How long have you worked in the roads sector
 - 0-5 Years [] 5-10 Years []
 - 10-15 Years [] Over 15 Years []
4. What is the your highest academic qualification
 - Certificate [] Diploma []
 - Bachelors Degree [] Masters Degree []
 - Other (Specify).....

5. What is your current position in this project?.....

SECTION B: PROJECT ORGANIZATIONAL STRUCTURE AND IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT STRATEGIES

6. Do you have an organogram for the project?

Yes [] No []

7. Is Yes, please provide a copy (only the titles without names)-**For Resident Engineer and Site Agent only**

8. The channels of communication in the project are so efficient and this has helped in developing shared understanding of environmental management activities and priorities. On a five point, do you agree with this statement? (Please circle as appropriate)

1	2	3	4	5
Strongly disagree	Disagree	Slightly disagree	Agree	Strongly agree

9. Is the current project reporting structure appropriate?

Yes [] No []

10. If No, what are some of the shortcomings?

- i.....
- ii.....
- iii.....
- iv.....
- vi.....

11. Decision making process on environmental management in the project is cumbersome. On a scale of 1 to 5, do you agree with this statement? (Please circle as appropriate)

1	2	3	4	5
Strongly disagree	Disagree	Slightly disagree	Agree	Strongly agree

12. Do you have environmental management plan for this road project?

Yes [] No []

13. If No, what are the reasons?

- i.
- ii.
- iii.
- iv.
- v.

14. Is environmental supervision part of the road construction Work Program?

Yes [] No []

15. If Yes, how do you monitor to ensure that environmental issues are addressed during construction?

- i.
- ii.
- iii.
- iv.
- v.

16. Who among the following has visited the road project to monitor environmental performance of the project in the last three (3) months? **(thick all that apply)**

- NEMA District Environment Officer []
- NEMA Provincial Director of Environment []
- KeNHA Project Engineer []
- KeNHA Environment Officer []
- Government Public Health Officer []
- Directorate of Occupational Health & Safety Officer []
- Other (Please specify).....

17. Are environmental monitoring reports prepared for this road project?

Yes []

No []

18. If Yes, how often?

Yearly []

Quarterly []

Monthly []

Weekly []

19. If No, what are the reasons?

i.

ii.

iii.

iv.

i.

20. In your opinion, what can be done to improve environmental supervision during road construction?

i.

ii.

iii.

iv.

v.

SECTION C: FINANCIAL RESOURCE FOR IMPLEMENTING ENVIRONMENTAL MANAGEMENT STRATEGIES

21. Has adequate financial resources been allocated to implementation of Environmental Management Plans for this road project?

Yes []

No []

22. Is the cost of implementing Environmental Management Plan (EMP) part of road construction cost?

Yes [] No []

23. The cost of implementing Environmental Management Plan should be a bill item in road construction. On a five point, do you agree with this statement? (Please circle as appropriate)

1	2	3	4	5
Strongly disagree	Disagree	Slightly disagree	Agree	Strongly agree

24. Please give reasons for your choice in 23 above.

- i.
- ii.
- iii.
- iv.

25. Has delayed payments to the contractors ever affected the implementation of Environmental Management Plans?

Yes [] No []

SECTION D: ENVIRONMENTAL LEGISLATIONS

26. Does the road project have Environmental Impact Assessment License and per the requirements of EMCA, 1999?

Yes [] No []

27. Has the construction work ever been stopped because of not complying with conditions of the Environmental Impact Assessment License?

Yes [] No []

28. Has an environmental Audit carried out for this road project?

Yes [] No []

29. If Yes, who initiated it? (**thick all that apply**)

- Project Engineer []
- Resident Engineer []
- Site Agent []
- NEMA Officials []

30. If No, what are the reasons?

- i.
- ii.
- iii.

SECTION E: TRAINING/EDUCATION IN ENVIRONMENTAL MANAGEMENT

31. Which of the following are have you been trained in (thick all that apply)

- Environmental Impact Assessment []
- Environmental Audit []
- Environmental Monitoring []
- Social Impact Assessment []
- Resettlement Action Plan Implementation []

32. What was the duration of the training chosen above?

a) **Environmental Impact Assessment**

- One week []
- Two weeks []
- Three weeks []
- One Month []
- Other (please specify).....

b) **Environmental Audit**

- One week []
- Two weeks []
- Three weeks []
- One Month []
- Other (please specify).....

c) **Environmental Monitoring**

- One week []
- Two weeks []
- Three weeks []
- One Month []

Other (please specify).....

d) Social Impact Assessment

One week []

Two weeks []

Three weeks []

One Month []

Other (please specify).....

e) Resettlement Action Plan Implementation

One week []

Two weeks []

Three weeks []

One Month []

Other (please specify).....

33. Does the project have the following officers? (thick all that apply)

Environmentalist Yes [] No []

Sociologist/Social Scientist Yes [] No []

Safety Officer Yes [] No []

34. Please rate your skills in environmental Management

5 - Very high []

4 - Somewhat high []

3 - Neither high nor low []

2 - Somewhat low []

1 - Very Low []

35. Please indicate your primary area of specialization (thick all that apply)

Engineering []

Contract management []

Project Management []

Accounting []

Environmental sciences []

Other (please specify).....

SECTION F: IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT PLANS

36. Do you think Environmental Management Plans are adequately implemented

during road construction? Yes [] No []

37. If Yes, to what extent

- To a very great extent []
- To a great extent []
- To a moderate extent []
- To a little extent []
- To a very low extent []

38. If No, what may be the reasons

- i.
- ii.

39. Please indicate your opinion on how effective each of the environmental management strategy below is on the scale provided.

- Scale**
- 1. Very effective
 - 2. Effective
 - 3. Somewhat effective
 - 4. Not effective
 - 5. Very ineffective

Environmental Management Strategy	Rating				
	1	2	3	4	5
Rehabilitation of quarry sites					
Soil erosion control measures					
Tree planting & revegetation					
Soil & water pollution control					
Dust control					
Noise pollution controls					
Proper solid waste management					

THE END

Thank you so much for your time

Appendix 2: Letter of Authorization



**KENYATTA UNIVERSITY
SCHOOL OF BUSINESS
DOCTORAL & MBA COORDINATION OFFICE**

**P.O. Box 43844
Nairobi, KENYA**

Date.....

TO WHOM IT MAY CONCERN:

RE: WALTER BARONGO NYATWANG'A-D53/CTY/PT/23296/2011

This is to confirm that the above named is a Master of Business Administration MBA (Strategic Management Option) student in the School of Business, Kenyatta University.

He is through with course work and has successfully defended his master Degree Proposal. He is now embarking on data collection.

Any assistance accorded to him will be much appreciated by this office.

Thank you.

Ruth Wakasi

FOR: DOCTORAL AND MBA PROGRAMME COORDINATOR

Appendix 3: Introductory Letter

Walter B. Nyatwang'a

P.O. Box 1415-00100

NAIROBI.

TO WHOM IT MAY CONCERN:

Dear Sir/Madam

RE: DATA COLLECTION

I am a student at Kenyatta University pursuing a master's Degree in Business Administration majoring in Strategic Management. As part of the degree requirement, I am undertaking a management research on "Determinants of Implementation of Environmental Management Strategies of Public Organizations in Road Construction Sector in Kenya. Case of Kenya National Highways Authority".

This is to request you to assist me collect the data by filling in the accompanying questionnaire. The information provided will be used exclusively for academic purposes and shall be treated with utmost confidence.

Your co-operation shall be highly appreciated. Thank you in advance.

Yours faithfully,

Walter Barongo Nyatwang'a

Tel.0721884924

Appendix 4: List of on-going Kenya National Highways Authority road projects at the time of the study.

No.	Name of Road Project	Length (km)	Location-County	Contractor
1.	Voi-Mwatate-Wundanyi	52	Taita Taveta	Kundan Singh
2.	Marsabit-Turbi	121	Marsabit	Jiangxi Zhongmei Eng. Ltd
3.	Loruk-Barpelo	62	West Pokot	Intex Construction Limited
4.	Timboroa-Eldoret	73	Uasin Gishu	China WU YI
5.	Mau Summit - Kericho Road (B1/A1)	58	Keicho	SBI International
6.	Kericho - Nyamasaria Road (A1)	76	Kericho and Kisumu	SBI International
7.	Nyamasaria – Kisumu Airport	24	Kisumu	Sinohydro Corporation
8.	Homa Bay-Mbita	43	Homa Bay	Put Sarajero
9.	Londiani - Fortenan	63	Kericho/ Kisumu	Jiangxi Zhongmei Eng. Ltd
10.	Kaloleni-Kilifi	35	Mombasa/ Kilifi	Murji/Devraj
11.	KCC (Sotik)-Ndanai-Gorgor	28	Bomet	China Railway No.5
12.	Enjinja-Bumala	37	Bungoma	HayerBishan
13.	Chebilat-Ikongge-Chabera	37.2	Bomet/Nyamira/ Homa Bay	Victory Construction Company
14.	Chepterit-Kimondi	12	Nandi	Kabuito Construction Company
15.	Kangema-Gacharage	60	Muranga	SS Mehta
16.	Chiakariga-Meru	35	Meru	Intex Construction Limited
17.	Eldoret – Webuye	60	Uasin Gishu/ Kakamega	Maltauro/H.Young
18.	Webuye - Malaba	61	Kakamega/Bungoma	Maltauro/H.Young
19.	Webuye-Kitale	61	Kakamega/ Trans Nzoia	Jiangxy Zhongmei Engineering
20.	Nairobi-Southern Bypass	28.6	Nairobi	China Roads and Bridge Construction

Source: Kenya National Highways Authority, Planning and Environment Department