

**DETERMINANTS INFLUENCING MONITORING AND EVALUATION PROCESSES
OF ROAD CONSTRUCTION PROJECTS IN KENYA NATIONAL HIGHWAYS
AUTHORITY (KeNHA), CENTRAL REGION, KENYA**

BY

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DECLARATION

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

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DEDICATION

I dedicate this work to my beloved mother, Faith Wanjugu for her great love, care and concern.

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ABBREVIATIONS AND ACRONYMS

ADB	African Development Bank
APRP	Annual Public Roads Programme
EIRR	Economic Interest Rate of Return
FY	Financial Year
GDP	Gross Domestic Product
GOK	Government of Kenya
ICB	International Competitive Bidding
KeNHA	Kenya National Highways Authority
KeRRA	Kenya Rural Roads Authority
KES	Kenyan Shillings
KRB	Kenya Roads Board
KURA	Kenya Urban Roads Authority
MR&R	Maintenance Repair and Rehabilitation
O & M	Operation and Maintenance
SSA	Sub-Saharan Africa
USAID	United States Agency for International Development
USD	United States Dollar
WDI	World Development Indicator

ABSTRACT

In its mandate to steer the economic growth, Infrastructural development has been one core development area that has been put on focus by the Kenyan Government. There has been a lot of investment on Construction and Maintenance of National trunk roads mainly being the main transport medium inland owing most especially to the unreliability of the Railway Transport after its collapse within the last two decades. In lieu of this the government has streamlined the ministry of roads through gazettment of Key Authorities to discharge its duties. The Kenya National Authority having been given mandate to manage the National Trunk roads has a duty to Monitor and Evaluate the Projects it is responsible of managing. There has been inefficiency in carrying out of proper Monitoring and Evaluation of the road construction and maintenance projects. Owing to this, information that would be useful and consumed in guiding procuring for future works during the procurement evaluation process on contractor's bidding for work is insufficient and works may end up going to an inefficient contractor who could have won a tender by virtue of bidding lowest. The purpose of this study was to identify the factors that affect Monitoring and Evaluation of Roads project in KeNHA. The study targeted the population of roads that have ongoing construction works in this region. A sample of roads that have ongoing construction works were sampled using simple random sampling and was collected using questionnaires which were administered to respondents involved in these projects. The data analysis involved qualitative and quantitative techniques. The study findings indicate that there is a great influence of availability of resources on monitoring and evaluation of Road Infrastructural Construction. The study revealed that adequate resources ensure timely completion of construction projects together with competent project staff. Availability of monitoring and evaluation personnel influences road infrastructural construction projects. Personnel are the ones that contribute to the effectiveness since they are needed to perform the duties. Other monitoring resources have an influence on monitoring and evaluation of road construction projects. It was found that other resources include time, mode of transport and data collection tools. Contractors have big influences upon projects and their successes. If the contractor provides poor workmanship it affects construction projects.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Development and maintenance of physical infrastructure are key to economic growth and development as well as harnessing poverty reduction. Production costs, employment creation, access to markets, and investment depend on the quality of infrastructure, most especially in transport (Ikiara et al. 2000; Chai & Yusof, 2013). Road transport is the most widely used means of transportation globally. The fragmentary nature of the railway system and the limitations imposed on the scope of inland water transport by geographical factors mean that transport of people and freight by rail and inland waterways has to be supplemented, usually by road transport over long distances (Ikiara et al. 2000 cited by Chai & Yusof, 2013).

Infrastructural development through construction of new roads and maintenance of existing ones is a fundamental aspect in development of every economy. The total percentage of the global cover of the paved roads was measured as 64.94% in 2009 according to the World Bank. Paved roads are those surfaced with crushed stone (Macadam) and hydrocarbon binder or bituminized agents, with concrete, or with cobblestones as a percentage of all country's roads measured in length (World Bank WDI:2013). The data available show that Africa had approximately 311,184 km of paved roads in 1996, with approximately half of them in poor condition. According to African Development Bank, With the exception of Mauritius and the North African countries of Algeria, Egypt, Morocco, and Tunisia, paved roads account for less than 50 per cent of the road network in Africa. Indeed, paved roads in sub-Saharan Africa account for less than 17 per cent in 1996, with many countries falling below the average. About 57 per cent of the roads in North Africa were paved compared to 25 per cent in South Africa and 10.2 per cent in Central Africa. Road density per unit area of one km² is generally much lower than those of Asia and Latin America (ADB 1999:122; World Bank, 2014).

Traditionally in most African countries road building has been given a higher priority than road maintenance and monitoring and evaluation during construction, with scant attention to the imperatives of recurrent costs of road management once the road has been constructed. In a study

on road deterioration in developing countries, Harral and Faiz (1988) estimated the annual monitoring, evaluation and maintenance expenditure required to prevent road deterioration. On average, expenditures for 1986–1990 varied from 0.2% of GDP for countries in East Asia and the Pacific to 1% for countries in West Africa. They estimated that the backlog of maintenance work varied from 1.6% of GDP in East Asia and the Pacific to 3.5% in South Asia. Different countries have adopted aspects of this approach. For example, Ghana came up with a commission the National Development Planning Commission (NDPC) as a regulatory policy to assimilate the principle of M&E operations. NDPC adapted the Results Based Monitoring and Evaluation System (RBMES) and Results Based Budgeting (RBB) in the M&E process. This was purposely to ensure cost effectiveness, institutional capacity strengthening, promotion of good governance and accountability as well as credibility to the partners and government.

Since acquisition of independence of Kenya in 1963, there have been several attempts to tailor a system of socio economic development best suited for the rural poor population. Towards this, the government came up with concept of pooling resources together in the spirit of *Harambee*’ consequently many institutions especially schools and other facilities in the health sector were put up successfully in the spirit of *Harambee* (Moi, 1986). During the 1980s this concept of *Harambee* spirit of development was further enhanced by empowering committees at grass root level. The government on its part purposed to bring management of projects closer to the people through district focus for rural development, have budgeting process using the district as the focal point for allocation of financial resources (Wambugu, 2013).

The poor condition of paved roads, in effect, speaks to the low level of maintenance in the individual countries. And, as the road networks have expanded, their institutional and financial burden has tended to increase much more rapidly than the national budget could cater for, especially in times of socio-economic crisis (Ikiara et al. 2000). Many countries are not able to meet maintenance costs from budgetary resources, let alone to finance investment in new trunk-road systems that meet stipulated requirements and standards according to volume and weight of traffic. Lack of or insufficient monitoring and evaluation during construction and maintenance has left over 50% of the paved roads in Africa in poor condition, and the condition of more than 80% of the unpaved main roads would be considered just fair (Ikiara et al. 2000). The case of rural feeder roads is even worse: at the end of 1999, up to 85% of them were estimated to be in

poor condition with accessibility limited to dry seasons in most cases. The inadequate and poorly maintained rural feeder roads connecting villages and farming areas with each other and with market centers is a major gap in rural transport in many countries (Republic of Kenya, 2009).

The improvement of the road networks in various countries has not kept pace with growth in demand. Kilometer lengths are limited and construction standards are often low. Only a few cities have been able to keep pace with road network needs. Although the construction of regional road networks on a sub-regional basis is crucial for economic cooperation and integration, a real regional African road system does not exist as yet, and a large number of national road networks are not coordinated effectively (Ikiara et al. 2000; Ramanathan, Narayanan and Idrus, 2012). As agriculture and industry expand, and as national and sub-regional economies develop, existing road networks will require tremendous extension and improvement in quality. In particular, road links between nations will have to be strengthened to meet the large-scale demand for intra- and interregional goods traffic. In many African countries all of this requires heavy capital investment and expenditure (Oyewobi & Ogunsemi, 2010).

Information from the World Bank report on world's paved road indicates that Kenya had a partly 14.3% of paved roads as a percentage total of the entire roads in year 2010 (World Bank WDI: 2013). The transport sector in Kenya comprises a road network with 169,886 km of roads and 350,000 vehicles, a single-track railway running from Mombasa to Uganda, a major seaport at Mombasa, small ports at Lamu and Malindi, a ferry service to Uganda, an oil pipeline from Mombasa to Kisumu via Nairobi and Eldoret, four international and many small airports, and three inland container depots (IEA 1998). With a 34% share in the total transport sector in 1998, road transport has the highest contribution to national output among the transport systems. It is followed by air transport, with 25%, and water transport, with 16% (Ikiara et al. 2000). Considering that this level of performance was achieved over a period of deficient road maintenance, it is obvious that the subsector and by implication the road infrastructure policy—holds the potential for rapid economic growth and poverty reduction through its influence on production costs, employment creation, access to markets, and investment (Howe and Richards 1984; van de Walle 1996; GoK 2014).

Out of the 169,886 km of total road network in Kenya, only 11,197km is classified as paved while the remaining 149,689 is unpaved (KRB, APRP FY 2012/2013). This therefore implies

that quality roads are critical for development of any country. Fast deteriorating state of roads in Kenya calls for need to focus on monitoring and evaluation of roads during construction. This study will focus on determinants influencing monitoring of road construction projects.

The main institutions that carry out implementation construction and improvement of road networks in Kenya are in two distinct levels; The National government on one hand through the responsible ministries and the county governments which absorbed the services of the now defunct municipal councils. Others include private entities and Non-Governmental Organizations (Republic of Kenya, 2010)

The National government discharges its mandates in road infrastructural development through two key ministries - Ministry of Transport and Infrastructure as well as the Ministry of Environment, Water and Natural resources. The Ministry of Transport and Infrastructure of Kenya discharges this mandate through four key parastatals namely; The Kenya Roads Board (KRB), The Kenya National Highways Authority (KeNHA), The Kenya Rural Roads Authority (KeRRA) and the Kenya Urban Roads Authority (KURA). Kenya Roads Board is mandated with accessing for funds through the Central Government and allocation of this funds on need basis to the other sister Authorities (Kenya gazette, 2006). In relation to this detailed historical development and management of national highways in Kenya, monitoring and evaluation has not been bought well by the relevant bodies/stakeholder like the contractors, financial controllers, ministries handing the projects via various funding bodies etc. A number of studies have focused on the M&E strategy but have ignored the basic factors influencing the strategy.

According to the comparative study done by Republic of Kenya (2014) on the state of its national highways in 43 out of the 47 counties, 983 respondents were given individual questionnaires via the e-mobile technology of data collection as assisted by the afrobarometer secondary information gathers. The results showed that, on the issue of M&E of the proposed highways besides the continuing ones, 947 respondents strongly agreed that factors like the personnel, funds, M&E planning; organisational culture, communication, contractor's experience, political heat and many more influenced the M&E process. Other studies across the country by a number of organisation have shown that the perception and corruption have had an influence in monitoring and evaluation process of the roads projects in all the 47 counties (World Bank, 2014), issues of limited budgetary allocations from the national government and the delays

in funds release limits the M&E process (Ministry of Transport, 2013), poor contractual agreements as shown by the Public Procurement & Disposal Act published by the Republic of Kenya (2015). This has been a similar situation in the central region run projects whereby KeNHA has not been rated on the 89% threshold effectiveness in carrying out the supervision and checks on its projects starting from the planning phase to the impact assessment point.

1.2 Problem Statement

Infrastructural development of the road network in Kenya is a sector that has been put under emphasis by the government being the key incentive to spur economic growth. A large share of the national budget resource allocations goes to this cause. During the 2013/2014 fiscal year, 7.7% of the National budget allocation went to Ministry of transport and Infrastructure (Institute of Economic Affairs, budget guide, 2013). Contracting for paved road construction has increased in great measure making construction industry an easily noticeable development. This is intended to spur growth by creating efficiency, convenience and cost effectiveness in the transportation of both goods and services in the Kenyan economy.

However, quality of the construction work for the paving of these roads has deteriorated greatly with the entry of many players in this sector of construction. Marginal Construction companies, the so called 'cow boy' contractors have been able to get away with poor workmanship on sites and go ahead to win more tenders by taking advantage of gaps in quality assurance and control during the execution of the construction projects. The overall research problem addressed in this study is that despite conducting of the traditional task of Monitoring and Evaluation of construction projects, the effectiveness of the findings and compilation of this information creates ambiguity. This then makes stream lining of tendering processes during evaluation impossible giving rise to a hand set record of presence feeble and low scale ability to this at times of tender evaluation and award of construction works. Owing to this, marginal or low capacity and unacceptable bidders have been able to distort the bidding process by excessive underbidding for contracts. After award is done, most are unable to complete works on exhaustion of the project period and where it is finished, it is of substandard quality. At the point of construction, poor contractors have created a reflex on the part of the client by raising supervision and staffing costs substantially. The lack of effective monitoring and evaluation has resulted to huge losses of public funds through construction of poor quality roads.

This study sought to establish the possible determinants that influence monitoring and evaluation processes of road construction projects in Kenya National Highways Authority (KeNHA). In discharging its duties, KeNHA has demarcated the geographical area of Kenya into ten main regions. This include; Nyanza, Western, North Rift, South Rift, Nairobi, Central, Upper Eastern, Lower Eastern and Coast Region. Each Region is managed by a Regional Manager who oversees management of Trunk roads within his geographical region.

1.3 Purpose of Study

The purpose of this research project was to investigate the key determinants that influence efficiency of monitoring and evaluation studies and processes of road infrastructure construction projects during their implementation by KeNHA in Central Region.

1.4 Objectives of the Study

The study aimed at achieving the following objectives:-

1. To establish how availability of funds influences monitoring and evaluation of Road Infrastructural Construction Projects within KeNHA's Central Region.
2. To evaluate how availability of monitoring and evaluation personnel in KeNHA influences Road Infrastructural Construction projects within KeNHA's Central Region.
3. To assess how other monitoring resources influences monitoring and evaluation of road construction projects within KeNHA in Central region.
4. To evaluate how Contractor participation influences monitoring and evaluation of road construction projects within KeNHA in Central region.

1.5 Research Questions

The study aimed at answering the following research questions:-

1. To what extent does availability of funds influence monitoring and evaluation of Road Infrastructural Construction Projects within KeNHA's Central Region?
2. To what extent does availability of personnel in KeNHA influence monitoring and evaluation of Road Infrastructural Construction projects within KeNHA's Central Region?

3. To what extent do other resources influence monitoring and evaluation of road construction projects within KeNHA in Central region?
4. How does Contractor participation influence monitoring and evaluation of road construction projects within KeNHA in Central region?

1.6 Study Hypotheses

The study was guided by the following alternative hypotheses:

1. H₁: Availability of funds influence monitoring and evaluation of Road Infrastructural Construction Projects within KeNHA's Central Region.
2. H₁: Availability of monitoring and evaluation personnel in KeNHA influences Road Infrastructural Construction projects within KeNHA's Central Region.
3. H₁: Other resources have a significant influence in monitoring and evaluation of road construction projects within KeNHA in Central region.
4. H₁: Contractor participation have a significant influence in monitoring and evaluation of road construction projects within KeNHA in Central region.

1.7 Significance of the Study

The research findings aimed at providing policy makers with information necessary on enhancing efficiency of monitoring and evaluation processes in road construction and maintenance which is a key driver of the economy. This study also provides the stake holders in the road infrastructure with check-list information reference during procurement of works in the evaluation processes of bidding contractors to filter off proven-rogue bidders. The study is also important for future reference in studies related to monitoring and evaluation of road construction projects which has not been exhaustively researched. The findings for this research study might be very informative to the Planning and Evaluation as well as the Procurement departments of Kenya National Highways Authority and by extension it will also serve as a good reference material to any other roads infrastructure management body and individuals working directly for the community.

1.8 Limitation of the study

The study took into account financial and time constraints. To overcome the challenge of financial constrain, it was not possible to study the total road construction projects within the unit of study of KeNHA's Central region therefore this study sampled Two Design and Construction projects, Four Periodic Maintenance projects and Four Routine Maintenance projects. The researcher attempted to overcome the challenge of time constraints by employing a team of assistant researchers to ensure data collection is duly done in time.

1.9 Delimitation of the Study.

The study was limited to road infrastructure construction projects by KeNHA in central region. It focused on all roads under construction in the following categories; Design and Construction Projects, Periodic Maintenance Projects and Routine Maintenance Projects. The respondents were the Contractors carrying out the works, the ministry employees who deal with site works supervision, monitoring and evaluation, any donor/organization that funds the project, the Resident Engineers who head supervision for the works and the Client's representative for the works in KeNHA within the unit of study being in Central region.

1.10 Study Assumptions

The study assumed that the respondents were cooperative and questionnaires issued were to be filled in and submitted back on time to the researcher; an assumption that held ground immediately the researcher went to the field. It also assumed that the respondents gave correct and valid information. Further, it assumed in the course of this study that the sample picked represented the entire population; issues that held weight until the end of the study.

1.11 Definitions of Significant Terms.

Availability of Funds: The amount of money available for monitoring and evaluation activity in KeNHA

Availability of Personnel: The number of qualified personnel concerned with monitoring and evaluation of road construction projects.

Contractor participation: The contribution

by a contractor in his involvement in monitoring and evaluation of road construction projects

Design and Construction Projects: Those road projects that involve construction of new or fresh roads where none existed.

Marginal Contractor: A duly registered contractor who lacks finesse and expertise in undertaking timely construction to standard of a specific infrastructure that he has been awarded to in a competitive tender process. Also referred to as ‘cow boy’ contractor.

Monitoring and evaluation: The frequent collection of relevant construction control data to ensure quality roads are constructed according to plan, the design and quality.

Periodic Maintenance Project: The type of road maintenance works done to roads after every five to seven years after construction to reinvigorate the strength and design of the road structure. This requires longer contract period of between one to two years.

Routine Maintenance Project: The type of maintenance works done on a road after short periods of weather events e.g. after the rainy season. They are have a short contract period of maximum 6 months

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the relevant literature on factors influencing monitoring and evaluation of road construction projects. The literature is reviewed from global, African and local perspectives. The chapter also presents a conceptual framework on which the study is based.

2.2 Phases of Roads Development

The productivity, welfare, and security of both rural and urban people are greatly influenced by the level of infrastructure development in their communities and the infrastructural links to district, provincial, and national centers of administration and commerce. Infrastructural services are social overhead capital facilities and activities that share techno-economic features (such as economies of scale and spillovers from users to non-users) and enhance productive capacities of firms (within agriculture, and non-agricultural industries) and households (Aschauer 1989; Lynde and Richmond 1992; Shah, 1992; Tabishl & Jha, 2011, September 16-18).

2.2.1 Design and Construction of Roads

Design of a road project is a highly technical process requiring highly trained staff, with specialized skills especially now when complex technology is involved (for example, the evaluation on the scope of and method of repair of a failed trunk road structure network). The basic design is apt to be successful if presented and adapted through a process of consultation and active stakeholder participation at all stages. Indeed, there is increasing evidence that local involvement in design and construction of rural infrastructure leads to better design and better subsequent performance. This is most clearly seen with domestic water supply projects (USAID 1982; Williamson 1983). Literature suggests that design decisions and choice of technology for rural roads are more appropriate when made at the lower levels. There is also a bigger incentive for communities to take responsibility for the construction phase if they have had significant involvement in the design phase (Edmonds 1980 cited in World Bank, 2013).

The role of different levels of institutions in construction is a function of the technological requirements of the task. Farm-to-market roads, which have less-exacting standards and can

draw on techniques already mastered by local people, are more readily undertaken by local institutions than are inter-city highways (Uphoff 1986; The Quantity Surveyor and Construction Claims, 2011). By and large, however, the local government, other local institutions and private enterprises have a critical role in infrastructural development because construction activities rely on local materials and familiar technologies. Skills in design have had a tremendous influence on the level of road infrastructure development in Kenya due to lack of in-service training for new design technology at the Ministry of roads of Kenya (Wairuri 2009). The lack of enhanced skills runs the delay in rolling of construction of roads in Kenya's roads since feasibility studies and preliminary designs take long to approve. Besides this, lack of proper monitoring and evaluating a road construction project may lead to undesirable results in attaining the design life of a project.

Conformity to design measures and also the control of design parameters in the implementation of a construction project is the role of both the design Engineers and the supervision staff on site of a particular project. For the case of trunk roads in Central region of Kenya, KeNHA has mandated the Regional Manager with the role to oversee that design measures of quality, time and resources are adhered too. Each road project has an appointed project manager called a Resident Engineer and his role is to be on the ground and control quality in all aspects of the project implementation (Matesehe, 2013).

2.2.2 Operation and Maintenance

Operation and maintenance each has its particular activities, although they are usually grouped together in language and practice as 'O&M'. Central government agencies often concede O&M tasks to be 'suited' to local institutions. However, one of the main frequent conclusions from literature is that the willingness and ability of local institutions to discharge O&M responsibilities depend in large part on their involvement in the design and construction of the facility concerned (USAID, 2012). So, simply handing over O&M responsibility to local institutions as in a 'turnkey project' is apt to undermine the maintenance of the infrastructure. The critical variables, therefore, are how much the community understands and values the benefits of the infrastructure in question. This is why stakeholder participation in design and construction is important, first in ensuring that the infrastructure is needed and supported, and second in giving people a sense of ownership of and responsibility for the facility.

According to Ganiyu & Zubairu (2010) there are no good alternatives to local management of road infrastructure. The principle of comparative advantage proposes that all parties concentrate on doing what they can do best or avoid what they do worst, in order to contribute the greatest total benefit. Central government administration of roads at the local level is seldom the best way to use scarce financial and management resources.

Most considerations affecting the role institutions play in maintenance (encompassing maintenance, repair and rehabilitation - MR&R) are similar to those for construction. However, some MR&R factors deserve separate discussion. MR&R ranges from continuous (routine) to periodic (ad hoc or planned) activities. The former are often undertaken as 'preventive maintenance', which is important but is commonly neglected. The latter deal with improving repair, rehabilitation or, if the deterioration is substantial, reconstruction, which may amount to deferred maintenance (Wasike, 2001; Ganiyu & Zubairu, 2010).

Some forms of physical capital, such as bridges, need fairly continuous attention because any failure they suffer disrupts the working of the system and its provision of a crucial good or service (Wasike, 2001). Further, roads are more subject to gradual deterioration and thus are more amenable to periodic maintenance. Infrastructure that needs routine servicing must have institutional support, whether from national or local institutions. This study by Wasike did not address the issue of monitoring and evaluation during construction phase of road construction projects. KeNHA regional offices have the bulk of its administrative package being managing the built roads. This is through carrying out a roads inventory condition survey (RICS) as well as maintenance of roads within the region. RICS involves assessment of a road condition for purpose of arriving with the correct maintenance works. The purpose of this research will be to tie up the facts from the inventory together with information collected from Monitoring and Evaluation exercises previously conducted and see the factors that could have influenced proper implementation of Monitoring and Evaluation in central region.

2.3 Monitoring and Evaluation of Projects

Project monitoring is the continuous assessment of project implementation in relation to design schedules, and the use of inputs, infrastructure, and services by project beneficiaries (Simon, 1986). Project evaluation is the periodic assessment of a project's relevance, performance,

efficiency, and impact both expected and unexpected in relation to stated objectives. Projects monitoring and evaluation provide managers and stakeholders with continuous feedback on implementation, interim and terminal evaluations. These are conducted on projects as ways to identify necessary adjustments in project design and to assess the projects' effects and their potential completion (Paul, 2005).

Project sustainability is currently an extremely relevant concept worldwide. It refers to the continuation of a Project's goals, principles, and efforts to achieve desired outcomes (Paul 2005; Simon, (1986). The efficient and informed utilization of project M&E tools greatly affects project outcomes and therefore it is important to analyze their utilization in various projects. This in turn informs both project managers and stakeholders on areas of improvement for the achievement of better outcomes and completion.

According to Gaba (2013) there is need for effective M&E of projects as this is increasingly recognized as an indispensable tool of both project and portfolio management. This acknowledged need to improve the performance of development assistance calls for close attention to the provision of management information, both to support the implementation of projects and programs and to feed back into the design of new initiatives. The WBG further avers that M&E also provides a basis for accountability in the use of development resources. Given the greater transparency now expected of the development of community, governments and agencies assisting them need to respond to calls for more "success on the ground". Here, there should be examples of development projects with evidence that they have systems in place that support learning from experience.

At all stages of the project cycle, M&E tools can help to strengthen project design and implementation and stimulate partnership with project stakeholders. This is because it can influence sector assistance strategy. Relevant analysis from project and policy evaluation can highlight the outcomes of previous interventions, and the strengths and weaknesses of their implementation. It can also improve project design and use of project design tools such as the logical framework results in systematic selection of indicators for monitoring project performance (Fapohunda & Stephenson, 2010).

2.4 Availability of Funds and their Influence on M&E of Projects

Financing arrangements are crucially important. Without an adequate and stable flow of funds in all departments, road construction and maintenance policies will not be sustainable. That is an important part of the problem in Africa. Road maintenance expenditures in most of in Sub-Saharan African countries are well below the levels needed to keep the road network in stable long-term condition. In most countries, they are less than half the estimated requirements and, in some, less than a third. Furthermore, the flow of funds is erratic (Schliessler & Bull, 1993 cited by Fapohunda & Stephenson, 2010).

Budget allocations are often cut at short notice in response to difficult fiscal conditions, funds are rarely released on time, and actual expenditures are often well below agreed budget allocations. As a result, roads throughout the region continue to deteriorate, rural roads regularly become impassable during the rainy season, and the large backlog of road rehabilitation continues to increase with most of the ongoing works in construction being hoarded by stagnating contractors who have been unable to complete works on time rendering the project being anything but cost effective (Kikwasi, 2012).

The main reason why road monitoring and maintenance is underfunded is that road authorities work under constrained budgets owing to the fact that road users pay very little for the use of the road network. They pay the usual import duties, excise taxes and sales taxes, but so does everyone else. Road user charges in the form of vehicle license fees, a specific surcharge added to the price of fuel (the fuel levy), and international transit fees rarely cover more than 50 percent of expenditures on maintenance and, in some countries, barely cover 25 percent (Robinson, 1988). Most road expenditures are still financed from general tax revenues and donor-financed loans and grants. This is not necessary. Roads can be commercialized, put on a fee-for-service basis, and treated like any other public enterprise (Schlosse, 1993; Ahadzie, 2011).

An added complication is that funds for road maintenance are allocated as part of the annual budgetary process. Under this arrangement, each ministry must compete for funds during the annual budget negotiations and, at least in theory, funds are allocated to finance those expenditures with the highest economic return. However, if that were true, road maintenance

would not be underfunded. Allocations for monitoring and maintenance in Kenya and across Africa are well below the optimal requirements (defined as a maintenance strategy which produces an Economic Interest Rate of Return - EIRR of over 12 percent), even though the economic return at the margin is frequently well over 100 percent. The budget allocation process is flawed and politicized, and funds are unfortunately not allocated to finance expenditures with the highest return (World Bank, 2012). Large spending ministries, particularly those spending large sums on maintenance, nearly always lose out in the budget debate. Maintenance can always be postponed in the hope that better fiscal conditions are around the corner. They rarely are, and road maintenance continues to be cut or deferred. Given this inherent structural problem, it is no wonder that both Japan and the U.S. both generally considered successful economies with well-developed budgetary systems use earmarking to secure a stable flow of funds to support their road expenditure programs (Ahmed, Azhar, Castillo and Kapagantulla, 2012).

Another reason road maintenance is underfunded is that some countries still spend too much on new investments (mainly upgrading existing roads and construction of feeder roads). A review of nineteen Sub-Saharan African countries has shown that, between 1986 and 1988, 58% of road expenditures were devoted to new construction or improvement, 17% to reconstruction and rehabilitation, and a mere 25% to routine and periodic maintenance (World Bank. 1992; 2013). Countries continue to upgrade existing roads and build new ones even when there are no funds to maintain them. One of the reasons for preferring construction over maintenance is that maintenance is financed under the recurrent budget, while investment is financed under the development budget. Since donors are willing to support the development budget, development funds are less constrained than recurrent funds, which are mainly financed from domestic revenue sources. However, a more important reason for favoring new construction is that contracts tend to be larger (hence offering greater opportunities for gratification payments) and are politically more visible and glamorous (Bundi, 2011).

In the local setting, KeNHA has a very lean budget for performance monitoring and evaluation of road project. It is hypothesized that this results from the relatively small allocation for Administration from where Monitoring Exercise is funded from. Administration is allocated only 3% of the annual Budget prepared by KeNHA. The 8 day exercise on Performance Monitoring in

every quarter receives KES 1,487,000.00 which is meant and expected to sustain the budget requirement covering all construction projects ongoing in the entire country (Monitoring and Evaluation Report, 1st Quarter FY2012/ 2013 KeNHA, 2013). This means that the sources of finances for the M&E aren't streamlined since they are ever tied to the national budget. In his writings, Chilipunde (2011) argues that, in Malawi and Kenya's over 75% of the roads being managed and done by both the KeNHA and KeRRA have never met the supervision standards because there are no proper sources of financing the M&E activities, no funds set aside for the same and the allocations towards the process are limited. This is supported by the Makone (2010) who argue that, roads like other construction projects in Kenya face a major challenge of funds; a factor that has made the monitoring and evaluation for example a tedious activity. Lack of separation of the M&E process in these cases for example (with a different source of funds, with an allocated budget and with sufficient amounts of finances) has led to difficulties in implementing successful M&E strategy in all the roads in the country.

2.5 Availability of Personnel and their Influence on M&E of Projects

Human resource constraints are the single most important issue facing most road agencies. They suffer from an acute shortage of technically qualified staff and still employ far too many unskilled workers. In Zambia, of the nine road agencies, one has collapsed (two are close to collapsing (Malawi and Mozambique), and four are heavily dependent on expatriates (Botswana, Lesotho, Namibia, and Tanzania). Salaries in some road agencies are so low that day-lighting has become part of the status quo (Bahl, 1992; World Bank, 2013).

Salaries are not only well below those in the private sector, but are frequently below the living wage (the minimum salary needed to feed and clothe a family). Annual median salaries vary from an adequate 10,000 USD in Botswana, Lesotho, Namibia, and Swaziland to 6,000 USD in Zimbabwe (the road agency is just about holding its own, but 75 percent of its engineers and 60 percent of its technicians are under the age of 34), 4,000 USD in Malawi, 2,200 USD in Mozambique, 950 USD in Tanzania, and 650 USD in Zambia (Harral, and Faiz. 1988; McMiniminee et al. 2010), this has caused "a rapid exodus" of experienced and competent technical staff to the private sector and other competing markets. The main reason has been offers of far better compensation and more generous fringe benefits. The situation is similar, or is rapidly becoming so, in most other African countries. Vacancies at the professional and

managerial levels are major problems in Kenya, Uganda, and Zambia. It also shows that road agencies in Rwanda, Tanzania and Zambia are heavily dependent on expatriate engineers paid international salaries by multilateral and bilateral donors in the tune of 35,000 USD, exclusive of allowances (Moeller, Philip. 1993 cited by Musa, 2012).

The shortage of technical staff, together with the incidence of day lighting and moonlighting, are entirely attributable to the growing disparity between civil service salaries and those for comparable positions in the private sector (Rausch,1994). An engineer working in the private sector generally earns more than twice as much as his public sector counterpart (in Tanzania and Zambia, it is five and nine times respectively). Real salaries have also declined sharply (World Bank 2011). A young engineer in Tanzania earned about 250 USD per month in 1970. His real salary now is a mere 300 USD per month. The same is true in Nigeria. Until about five years ago, a young engineer earned about 1,000 USD per month. This has now fallen to 250 USD per month.

Roads departments paying qualified technical staff a fraction of the going market wage either end up with high vacancy rates (as in Kenya, Malawi, Mozambique, Uganda, and Zambia), employing expatriate road managers paid through donor-financed technical assistance programs (as in Botswana, Lesotho, Namibia, Rwanda, Tanzania, and Zambia), or with part-time staff forced to supplement their incomes by moonlighting, day-lighting, manipulating allowances, and pilfering (Riverson, Gaviria, and Thruscutt, 1991, Nyamwaro, 2011).

Day lighting is now a systemic problem in Africa. Too many technical staff hold second jobs and owe their loyalty to another employer. And this problem cannot be solved through training, bonded studentships, and improved allowances. There is no point training staff who only spend a fraction of their time on the job. Likewise, bonded graduates have no interest in making a career in the roads department and simply count the days to the end of their bonding period. Improved allowances are equally ineffective since they are discretionary, subject to change and are not bankable (i.e., cannot be used as security for mortgages and other loans). You cannot manage a road agency with a demoralized, part-time staff (Omran *et al*, 2012).

From the earlier reports on performance monitoring of Projects prepared by KeNHA, it was observed that indeed inadequacy of staff played a major role in the lack of thorough scrutiny to the project performance indicator tools. During the first quarter of Financial Year 2012 - 2013 there were 4 teams of only 3 people each to carry out the exercise picked from staff under Planning and Environment Department. Further to note is that they carried out Monitoring on only sample roads that were prioritized by the board of management owing to the time constraint given the personnel available (Monitoring and Evaluation Report, 1st Quarter FY2012/ 2013 KeNHA, 2013). In his focus, Waihenya (2011) argue that, construction projects like these require higher numbers of M&E experts who understand all the steps and levels of monitoring so as to give the direction of the projects.

2.6 Influence of Other Monitoring Resources in M & E of projects

Monitoring resources include human resources and time. Adequate institutional arrangements and institutional and human capacity are essential for any M&E project, including functioning of MIS. The level of skills required depends on the complexity of the project. Competitive Research Grant Projects and projects using contracting and involvement of a wide range of stakeholders across several R&E subprojects are demanding in M&E capacity the implementation of a well-functioning M&E system both at the subproject and the overall program level can be a major challenge. Establish a centralized M&E unit. In general, projects may either establish an M&E unit which is integrated into the Project Implementation Unit or not have a centralized M&E unit but share M&E tasks among the implementing partners and primary stakeholders. For complex ARE projects, it is recommended that a centralized M&E unit be established within the main implementing institution (Jackson, 1998; Omran *et al*, 2012).

Institutional design considers evaluating consistency among project priorities, mission, strategic goals, strategic products, and their beneficiaries. Similarly, based on the foregoing, it evaluates the coherence of institutional structure and division of responsibilities between work units that make up the body or public agency. The aspects evaluated in institutional management relate to institutional capacity (professional, technological, organizational) and management mechanisms or procedures applicable and relevant to the organization, such as mechanisms for coordination and allocation of responsibilities; allocation mechanisms, funds transfer, payment procedures, and audits; and accountability and transparency in the use of resources, activities, M&E tools,

and targeting criteria, or selection of beneficiaries (Jackson, 1998; McMiniminee et al. 2010). Link the centralized M&E unit to subunits. The centralized unit should collaborate with M&E units in other co-implementing institutions (e.g., extension agencies, research centers, private sector implementers, enterprise development centers) and in decentralized regions (e.g., province, district, and county level centers) where project activities take place or have influence (Jackson, 1998).

In regard to the time-consuming nature of the process at the same time it raised the issue of supporting such a time consuming process when we did not have a full staff complement in donor project. This put a very heavy burden on a few key Oxford-based INTRAC staff which became very difficult for them maintain when other pressures were put upon them. It took considerable time and effort to arrange meetings between stakeholders in five very different countries. Already at the end of Year 1 it was becoming clear that some stakeholders would not be able to participate fully and that the project would probably focus on a smaller number of partners in three countries (David C. Korten, 1980 cited by McMiniminee et al. 2010).

According to Chan and Kumaraswamy (1996), late completion of works as compared to the planned schedule or contract schedule is what is known as delay. The financial support to implement public projects, whether from main stream government sources or from donor funding, is time bound and this calls for critical monitoring of the implementation schedules in order to counter any form of delay. There is a relationship between schedule, the scope of work and project conditions. Changes to any one or more of these three can affect the compensation level and time of completion. The project management should ensure that the project is carried out according to the design. However, depending on the physical and policy environment, there may be need for flexibility in response to the reality on the ground. Monitoring of progress and reporting therefore, becomes crucial (Assaf, 2006).

In a nutshell, Oyewobi (2011) argues that, besides financial resources and personnel, a number of issues are surrounding the success of monitoring the road networks in Kenya, Burundi, Angola, Nigeria and Botswana. He for example talks of time allocated for monitoring and evaluation whereby time for monitoring and evaluation has never been stipulated by the contractors or relevant government ministries in these countries, organisational culture and its structures have never put into consideration, communication and many more. This has not been

studied into details in the central region's KeNHA projects and the researcher has decided to cluster a number of these factors and how their influence could be rated.

2.7 Influence of contractor participation in M & E of construction projects

An individual or firm needing construction services will employ a process of selection to identify the contracting firm with which they want to do business. In this process, the customer will utilize a set of criteria to aid in the identification (Bitner and Hubbert, 1994). These criteria could include such factors as past experiences with the firm, perceived capability of the firm, price, and so on. At the conclusion of the contractor's work, the customer will experience satisfaction or dissatisfaction with the contractor. The satisfaction or dissatisfaction is based on a set of criteria that may be the same as or different from the criteria used in the selection decision. These criteria may include such factors as quality, number of claims filed, accidents, and so on (Bitner and Hubbert, 1994). In Kenya all road construction projects are done by contractors (Republic of Kenya, 2012).

From observation, there has been a high occurrence whereby most roads did not last long enough as designed to last. This was attributed to poor workmanship. Although governance and regulation issues are critical to effective performance of the transport sector in Africa, there has been little research in this field (Bryceson 2002; DFID, 2012). This is a major omission, given the levels of corruption reputed to characterizes transport infrastructure provision (from selection of routes to award of road contracts, actual versus contract road construction specifications, etc.) and the corruption and rent-seeking practices widely in evidence across Africa's road transport system (from driving license issue and bribe-seeking traffic police and vehicle inspection officers, to lorry park and loading restrictions).

A few studies give some indication of the scale of the problem. The way transport unions can restrict the development of efficient and inexpensive transport services is well illustrated by Fouracre et al. (1994) for Ghana and Benmaamar (2002) for Uganda. Rizzo (2002) presents a fascinating study of the negative impacts of privatization and deregulation in the Dar es Salaam transport system, including the rent-seeking practices of the bus owners' association. Gore and Pratten (2002) observe how struggles around control of lorry parks have been exacerbated in Nigeria by the expansion of youth gangs. Roadside inspections by numerous administrative

bodies are often a major cause of delays and charges and do little to improve the dangerous, un-roadworthy condition of many vehicles (Nigerian Marketing Network, 2012).

In oil-rich Nigeria, the sensitive political issue of petroleum shortages created by supplier cartels has only recently been resolved. As Sohail et al (2003:38) emphasize, regulation processes must be carried out in a demonstrably transparent way, 'since regulation combined with corruption can produce a worse situation than an unregulated market'. Monitoring and evaluation of road construction could suffer under corruption scourge due to the high capitalization of road projects.

Studies across the country indicate that, Success of road construction projects depends mainly on success of performance. Many previous researches had been studied performance of construction projects. Dissanayaka and Kumaraswamy (2009) remarked that one of the principle reasons for the construction industry's poor performance has been attributed to the inappropriateness of the chosen procurement system leading to poor contractors in the country with poor experience, low financial knowledge, low monitoring and evaluation technology and poor attitudes towards M&E. Thomas (2002) identified the main performance criteria of M&E of construction projects as financial stability, progress of work, standard of quality, health and safety, resources, relationship with clients, relationship with consultants, management capabilities, claim and contractual disputes, relationship with subcontractors, reputation and amount of subcontracting; factors that are mostly lacking in Kenya's highways construction especially in the central region whereby corruption is the epitome of contractual agreements.

In summary on the performance of roads monitoring in Kenya, the World Bank (2013; 2014) wrote an article, 'Monitoring, Implementation and Evaluation of Roads'. In the argument, Construction and M&E, especially with respect to the contracting and bidding for civil works, requires the effective evaluation and supervision of contractors and their bids. Without this ability at tender, marginal or unacceptable bidders can distort the bidding process by excessive underbidding for contracts or future inability to complete. At the point of construction, poor contractors can raise owner's supervision and staffing costs substantially. Management of the road network requires different information, at different levels of the decision-making process, for example, for planning, for programming, for design, and for implementation. The data to be collected by an inspection system, and where, and how it should be collected, depend largely on the use of the data. Senior managers in road administrations may also be required to make

decisions about the choice of computerized road management systems that are to be implemented within their organizations. The consequences of such decisions can be very costly, not only in terms of the cost of initial system procurement, but also because of the on-going costs of system management and data collection. The implementation of systems can have far-reaching effects on all aspects of the operation of the road administration. Hence, it is important that managers are aware of the need for an effective approach to system implementation, and of the pitfalls of making inappropriate decisions in this area.

2.8 Conceptual Framework

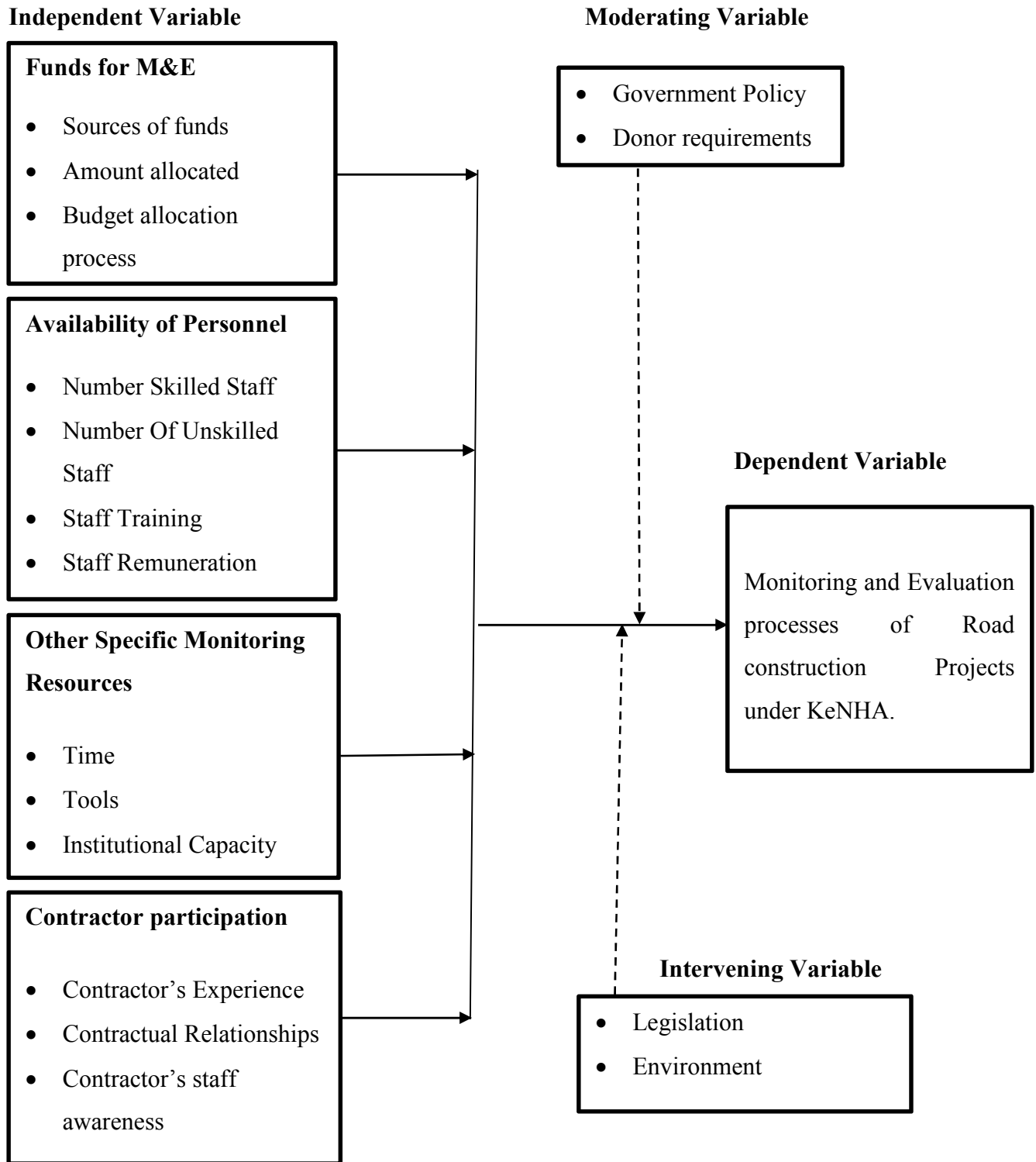


Figure 2.1: Conceptual Framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the type of research methodology that was applied. It covers the type of research design, sample and sampling procedure method, target population, Accessible population and sample size. Further data collection procedure and analysis, research instruments the study will adopt. It has also focused on validity and reliability of instruments and ethical issues.

3.2 Research Design

The research adopted a descriptive survey design. According to Kothari (1985), descriptive design allows the researcher to describe record, analyze and report conditions that exist or existed. The research study incorporated both quantitative and qualitative approaches. The data was collected to study and to investigate the key determinants that influence efficiency of monitoring and evaluation processes of road infrastructure construction projects during their implementation by KeNHA in Central Region. The qualitative approach was used in this study because it provides in depth understanding of information while the quantitative approach provides summary information on many characteristics (Hair, Money, Samuel and Page, 2007).

3.3 The Target Population

The target population is that which researcher wants to generalize the results of the study (Mugenda and Mugenda, 2003). The Central region of KeNHA has twenty (20) number ongoing road construction projects currently. The subjects of study were drawn from these 20 ongoing roads project within the geographical precincts of the unit of study. The Respondents were selected from the employees who have worked in the three categories of roads for the last five years since they could be having relevant information that is required. The technical staff in the Resident Engineer's supervisory team, contractor's team and the planning department of KeNHA through the Regional Manager Central. This gave a total of 65 respondents as shown below.

Table 3.1: Target Population

Road Category	Population (N)	Percentage
Design and Construction projects	19	29.2%
Periodic Maintenance projects	22	33.8%
Routine maintenance projects	24	37%
Total	65	100%

3.4 Sampling Technique

Sampling is concerned with the selection of a subset of individuals from within a statistical population to estimate the characteristic of the population (Borg and Gall 1989). The sample population of the study was determined by using Krejcie and Morgan (1970) table in appendix III. The sample size determined was 56 and therefore the study will target 56 employees in the three categories. The sampling design used for this study was Non-probabilistic design procedure using quota sampling method followed by purposeful sampling method. At first the target population projects was categorized into either Routine maintenance projects, Periodic maintenance projects or Design and construction projects. It is upon this was done that purposive selection of projects were selected from each category hence enabling the researcher to select the most reliable project to source data from.

Table 3.2: Sample Size

Road Category	Population (N)	Sample (N/65x56)
Design and Construction projects	19	16
Periodic Maintenance projects	22	19
Routine maintenance projects	24	21
Total	65	56

3.5 Data Collection Method

A self-administered questionnaire was used as data collection instruments. It comprised of both open ended and closed ended questions. The use of questionnaires was to enable the respondents to remain anonymous and be honest in their responses (Cooper and Schindler, 2003). The choice of the questionnaire was based on the fact that it was easy to analyze the collected data statistically. Further it was not biased and the responses were gathered in a standardized manner so they are more objective in their results.

3.6 Instrument Validity

Validity is the degree to which an instrument measures what is supposed to measure. Kothari, (ibid). It is the degree to which results obtained from the analysis of the data actually represent the phenomenon under study. The validity was enhanced through appraisal of the tools and verification by the supervisor who is an expert. Furthermore, the questionnaire was subjected to pre-test to detect any deficiencies in it. The necessary improvements were made.

3.7 Instrument Reliability

Mugenda and Mugenda (2003) define reliability as a measure of a research instrument yields consistent results or data after repeated trials. According to Joppe, (2000) reliability is the extent to which results are consistent overtime. To test reliability a test re-test method was employed to the same categories of respondents after a period of two weeks to examine the consistency of

response between the two tests in a pilot study. A correlation value of 0.75 was considered perfect.

3.8 Data Analysis

Data analysis consisted of examining categorizing; tabulating or otherwise recombining the evidence to address the initial prepositions of the study. The data collected was cleaned and coded. This was to enhance basic statistical analysis. The data analysis involved quantitative and qualitative methods (numerical and descriptive). Qualitative data was analyzed based on content analysis while quantitative data was analyzed using descriptive and inferential statistics. Data was analyzed with the help of electronic spreadsheet SPSS Program which has analysis tools. The collected data was presented using statistical techniques which included percentages and frequency distribution tables. The hypothesis was tested using the Chi-square so as to give the real values and mathematical relationships in the studies.

3.9 Ethical Issues

The principle of voluntary participation was strictly adhered to. The respondents were not coerced into participating in the research. They were informed about the purpose of the study. The researcher was guaranteed the participants confidentiality in the entire research process. The researcher obtained permission to carry out the research from the relevant authority.

Table 3.3: Operational definition of variables

Objectives	Variable	Indicators	Measurement	Scale	Data collection methods
To establish how availability of funds influences monitoring and evaluation of Road Infra structural Construction Projects within KeNHA's Central Region.	Funds	Sources of funds. Amount allocated. Budget allocation process	Frequency Percentage	Ordinal	Questionnaires

<p>To evaluate how availability of monitoring and evaluation personnel in KeNHA influences Road Infrastructural Construction projects within KeNHA's Central Region.</p>	<p>Availability of personnel</p>	<p>Number of Skilled Staff. Number of Unskilled Staff. Staff Training. Staff Remuneration.</p>	<p>Frequency Percentage</p>	<p>Ordinal</p>	<p>Questionnaires</p>
<p>To assess how other monitoring resources influences monitoring and evaluation of road construction projects within KeNHA in Central region.</p>	<p>Other monitoring resources</p>	<p>Time. Other Stakeholders. Institutional Capacity.</p>	<p>Frequency Percentage</p>	<p>Ordinal</p>	<p>Questionnaires</p>
<p>To evaluate how contractors influences monitoring and evaluation of road construction projects within KeNHA in Central region..</p>	<p>Contractors</p>	<p>Contractual Relationships. Contractors' Experience.</p>	<p>Frequency Percentage</p>	<p>Ordinal</p>	<p>Questionnaires</p>

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter analyses the data that was collected as well as offering the interpretation of the results from the findings collected from the sampled respondents. The purpose of the study was to make an assessment of how the effectiveness of monitoring and evaluation exercise in road construction projects was influenced by other determinants in KeNHA's Central region. The data collected was keyed and analyzed by simple descriptive analysis using Statistical Package for Social Scientists (SPSS).

4.2 Response Rate

A total of 56 respondents sampled from the various categories were administered with questionnaires. This was the total sample population of the study. However, 50 questionnaires were returned filled while 6 were not submitted hence earning a positive return rate of 89.3% against the 10.7% of the questionnaires that were not returned.

4.3 Data Analysis

Descriptive statistics were used to analyze and present the data. The Questions presented in the questionnaires were discussed after which related data was analyzed and interpreted. The data was presented through frequency tables with respective percentages which have been calculated followed by a narrative analysis. The data was analyzed in different categories as per the layout of the questionnaire that categorized respondents as per what they did and their areas of operation. Hypothesis testing was done using the Chi-Square test.

4.4 Background Information

The respondent's demographic information is analyzed here as they were drawn from various categories. This concerned elements regarding gender, age, working experience and frequency of inservice training were sought for and information below reached at.

4.4.1 Gender

The following was the distribution of gender as a biological demographic information amongst the respondents;

Table 4.1: Gender of the Respondents

Sex	Frequency	Percentage
Female	10	20%
Male	40	80%
Total	50	100%

From the responses collected in the field, 20 percent of the respondents were female while 80 percent were male. This could be a true indication in the ground whereby a great number of infrastructure related engineering projects like the roads are dominated by male staffs in the country and beyond. This fact was supported by previous studies which show a similar trend in gender distribution within road construction projects.

4.4.2 Age group

The researcher sought to know the age group of the respondents and the figures were as shown below

Table 4.2: Ages of Respondents

Response	Age	Frequency	Percentage
M & E Officers and Project Supervisors	18-30	10	20 %
	31-40	6	12 %
	41-50	6	12%
	51-60	5	10%
	Over 61	3	6%
Sub Total		30	
Contractors' personnel.	18-30	8	16%
	31-40	5	10%
	41-50	4	8%
	51-60	2	4%
	Over 61	1	2%
Sub Total		20	
Average total		50	100%

From the tabulated results, it was observed that the range of ages 18-30 years was most represented by both the contractors' personnel and the M & E staff in conjunction with project supervision staff. This being 16% and 20% respectively for both categories of staff. This high result in comparison to the older and more experienced as well as higher in-service trained staff would likely affect the quality and effectiveness of monitoring and evaluation of road construction projects negatively. The least age group representation was for those respondents over 61 years.

4.4.3 Academic Qualification of Respondents

It was important to establish the levels of education attained by the respondents and results below were reached.

Table 4.3: Academic Qualification of Respondents

Response	Level of Education	Frequency	Average Percentage
M & E Officers and Project Supervisors	Vocational Training	2	4%
	Diploma	6	12%
	Degree	18	36%
	Masters	2	4%
	Others	2	8%
Total		30	
Contractors' personnel	Vocational Training	4	8%
	Diploma	9	18%
	Degree	5	10%
	Masters	2	4%
	Others	0	0%
Total		20	
Average total		50	100%

From the responses it was noted with interest that from the first group of respondents involving M & E officers and project supervisors, graduates education level was the most frequent one at 36% while masters and higher levels coming in at 4% and 8% respectively. Most the graduates join KeNHA to serve as road designers and project managers who majorly are engaged with

analyzing data collected from the field. Post graduate holders and above are in managerial positions mostly in the regional headquarters. It is imperative therefore that the staff on site who carry out M & E on the ground are the diploma holders or those trained in vocational centers who constitute 12% and 4% respectively. This indicates skewness in the educational levels for the key staff handling data collection for M & E.

4.4.4 Work Experience

A combined question sought to know the work experience in a predetermined range of intervals scale between the M & E officers and project supervisors, and, contractors' personnel to establish the knowledge held about M & E and projects implementation by KeNHA linked workers. The respondents gave the following range of experience when asked.

Table 4.4: Work Experience

Work experience	Frequency	Percentage
Less than 10 years	20	40%
10-20	15	30%
20-30	10	20%
Over 30	5	10%
Total	50	100%

40% of the respondents were of less than 10 year experience, 30% went for between 10-20 years, 20% were of 20-30 years of experience while the remaining 5 who represented 10% had over 30 years' experience.

4.5 Responses from the M & E Officers and Project Supervisors

The researcher sought to find out the responses of M&E officers and project supervisors in relation to various factors influencing M&E and the success of projects implemented by KeNHA and responses discussed using the population sample of 30 respondents sampled in this category.

4.5.1 Availability of Financial Resources for Monitoring and Evaluation

The research sought to find out whether respondents felt that there is a dedicated budget for M & E processes in KeNHA, Central Region and responses below given:

Table 4.5: Response on existence of a Dedicated Budget

Response	Frequency	Percentage
No	24	80%
Yes	6	20%
Total	30	100%

From the responses, 80% of the respondents argued that there was no dedicated budget for M & E processes in KeNHA, Central Region. 20% of the respondents agreed that as much as there is a dedicated budget for M & E processes in KeNHA, Central Region, the budget is limited.

Respondents were asked in their own opinion whether they thought that budgetary allocation amount disbursed meet the time deadlines and results below were given.

Table 4.6: Amount Disbursed in Relation to Meeting the Time Deadlines

Response	Frequency	Percentage
No	21	70%
Yes	9	30%
Total	30	100%

From the respondents' information, 70% of the respondents felt that, the budgetary allocation amount disbursed did not meet the time deadlines while the remaining 9 who made 30% felt that it met the time deadlines.

Respondents were asked whether the amount provided for M&E exercise was sufficient and responses were tabulated below;

Table 4.7: Sufficiency of the Amount Provided for M&E Exercise

Response	Frequency	Percentage
No	27	90%
Yes	3	10%
Total	30	100%

90% of the respondents disagreed with the fact that the allocations provided to undertake an effective exercise of M & E was sufficient and enough while the remaining 10% agreed.

Respondents were asked a question that read, ‘does availability of financial resources influence the effectiveness of M&E processes of KeNHA projects in the central region?’ Responses below were arrived at.

Table 4.8: Influence of Finances on effectiveness of M&E Processes

Response	Frequency	Percentage
No	3	10%
Yes	27	90%
Total	30	100%

90% of the respondents strongly felt that financial resources have an influence in the M&E process of the road projects implemented by KeNHA that is operated in Central region of Kenya while the remaining 10% felt that financial resources have no significant influence to M&E processes.

When asked to give reasons, respondents argued that, with enough financial resources, the M&E exercise would be accelerated and the rate of hiring the required expertise will be higher and this will fall down to increased effectiveness of the M&E process in road infrastructure construction.

Table 4.9: Rating of Financial Resources and the Effectiveness of M&E Processes

Statement	Strongly disagree	disagree	Weakly agree	agree	Strongly agree	Mean rating
Sourcing of funds influence M&E.	7%	7%	13%	33%	40%	3.933
Amount allocated for M & E is limited.	3%	7%	3%	33%	53%	4.267
Budget allocation process restrictive	7%	7%	13%	30%	40%	3.966
Budgetary processes are bureaucratic	7%	7%	20%	16%	50%	3.966

With a guided scale, respondents were asked to rank some statements on the effectiveness of M & E with regard to financial resources and responses tabulated above.

The results show that the respondents agreed with the statements provided on the aspect of availability of financial resources and their possible influences on M & E of road construction projects. This is shown by their mean ratings which range between 3.9 and 4.3.

From the responses, a strong majority of the respondents strongly agreed to all the statement with 40% strongly agreeing that sourcing of funds had a significant influence in the success of M & E of road construction projects. Only 14% cumulative percentage of the respondents were in disagreement. With regard to whether the amount allocated for implementation of M & E strategy was limited, 53% of the respondents strongly agreed to the statement while a cumulative 14% disagreed either weakly or strongly.

40% of the respondents strongly agreed that budgetary allocation processes for M & E of roads project in KeNHA central region was restrictive. Further 50% of the respondents strongly agreed that budgetary processes are bureaucratic hence with affecting effectiveness of M & E processes in KeNHA Central Region. This was possibly inferred so since most of the budgetary provision are done at the headquarters of KeNHA in Nairobi which just like in most government institutions the funds are allocated based on the ministerial allocations from treasury and not mainly on the need-for basis.

4.5.2 Availability of Monitoring and Evaluation Personnel

A number of questions were asked in relation to personnel and this targeted the respondents who were made of M&E officers and project supervisors, adding up to 30 respondents according to the study.

To begin with, respondents were asked whether the number of deployed M & E officers met the capacity required for serving the projects in KeNHA Central region and the responses shown in the table below were arrived at.

Table 4.10: Number of Deployed M & E Officers

Response	Frequency	Percentage
No	28	93%
Yes	2	7%
Total	30	100%

93% of the respondents negated the statement that the number of deployed M & E officers meets the capacity required for serving the projects in KeNHA Central region while the remaining 7% of the respondents who were 2 supported the idea that the number of deployed M & E officers meets the capacity required for serving the projects in KeNHA Central region.

Respondents were also asked if they thought that the number of available personnel influenced the effective implementation of the M&E strategy in the KeNHA run roads in central region and responses in the table below were arrived at;

Table 4.11: Personnel’s Influence on the Effective Implementation of the M&E Strategy

Response	Frequency	Percentage
No	9	30%
Yes	21	70%
Total	30	100%

In relation to the above, 70% of the respondents felt that, personnel influenced the effective implementation of the M&E strategy in the KeNHA run roads in central region, while the remaining 30% thought that personnel did not influence the effective implementation of the M&E strategy in the KeNHA run roads in central region.

A statement rating based on the influence M & E personnel on effective Monitoring of road construction projects in central region was given by respondents with the following results;

Table 4.12: Rating of M&E Personnel in Implementation of Road Projects

Statement	Strongly disagree	disagree	Weakly agree	agree	Strongly agree	Mean rating
Number of M&E staff influences M&E	0%	3%	7%	33%	57%	4.433
Dominance of Unskilled staff influences M&E	10%	40%	33%	10%	7%	2.633
Training levels influences effectiveness of M&E.	7%	10%	7%	40%	36%	3.900
Remuneration of M&E staff influences M&E	0%	0%	33%	33%	33%	4.000

From the responses obtained for the first statement, 57% of the respondents that the number of M & E staff influenced the efficacy of the exercise hence the reports generated thereof would be lacking sufficient content to be effectively referred too. Both the statements on training level and remuneration having an influence in the efficiency of the M & E processes in road construction projects gave strong approval ratings at 36% and 33% respectively. It was also observed that the cumulative percentage content for all statements had greater values of approval rating than the disapprovals in each case. The results show that the respondents agreed with the statements provided on the aspect of availability of monitoring and evaluation personnel and their possible influences on M & E of road construction projects. This is shown by the means which range between 2.6 and 4.4.

4.5.3 Influence of Other Monitoring Resources on M & E

The researcher sought to investigate the influence of other Monitoring Resources on M & E in the implementation of road projects. Respondents were asked whether they were aware of the existence of a structured M&E action plan in KeNHA that was in existence to guide the monitoring and evaluation process and results below were arrived at:

Table 4.13: Awareness of Existing Structured M&E Action Plan

Response	Frequency	Percentage
No	25	83%
Yes	5	17%
Total	30	100%

From the responses, 83% of the respondents argued against the idea that there exists a structured M&E plan in KeNHA to guide its activities. However, this was supported 17% of the respondents in this category.

A similar question that read, does the existing M&E plan have exhaustive capacity guidelines for effective and efficient M&E processes, was asked and responses were as follows: 97% of the respondents disagreed while the remaining 3% agreed. According to the second section that sought for reasons behind this argument, most respondents gave reasons that ranged from the current M&E plans being just statements put down to satisfy the elementary conditions of funding, others felt that the plans were poorly thought out while others felt that there is no M&E plan even a single one done by non-biased expertise.

The sampled respondents of this category were further tasked to comment on whether there was an efficiently running transportation system as a supporting M & E resource. The responses were as presented below.

Table 4.14: Efficiency of Field Transportation Means for the M & E Staff

Response	Frequency	Percentage
No	22	73%
Yes	8	27%
Total	30	100%

From the table above, on average, over 70% of the respondents disagreed that KeNHA maintains a dedicated and efficient field transportation means for M&E while 27% of the respondents agreed.

Another question that sought to examine whether respondents supported the idea on whether the period designated for the M&E exercise was enough to exhaust requirements of the tasks

involved. 77% of the respondents answered negative while the remaining 23% agreed. This clearly indicates that M&E is basically affected by basic resources like time and many more.

Respondents in this category gave a rating on several statements regarding how other M & E resources influenced the efficiency and effectiveness of M & E exercise in roads construction projects in KeNHA's central region giving ratings as summarized below;

Table 4.15: Rating of Other M&E Resources in KeNHA Projects

Statement	Strongly disagree	disagree	Weakly agree	agree	Strongly agree	Mean rating
Limited time frame influences M&E	3%	3%	3%	44%	47%	4.267
Reliable transport influences M&E	7%	13%	3%	33%	44%	3.933
Co-operation of staff influence M&E.	7%	3%	7%	30%	53%	4.200
Proper record keeping of site work influence M&E	10%	7%	7%	33%	43%	3.933
Availability of equipment influences M&E	3%	3%	3%	37%	54%	4.333
Calibration of equipment influences M&E.	13%	30%	20%	23%	14%	2.933
Institutional Capacity influences M&E.	7%	7%	7%	37%	42%	4.033

From the responses in the rating scale, the first statement had 47% of respondents strongly agreeing that limited time frame for the exercise influenced greatly the efficiency of M & E processes. This was echoed by the fact that most respondents said it is this gaps that are left that create loop holes to lock out the poor performing contractors from bidding new tenders. Unreliable transport was also cited highly with 44% strongly agreeing that it contributed to the inefficiency of M & E.

On the issue of cooperation between M & E staff, Project Supervision staff and Contractor's project implementation staff in M & E, 53% of the respondents strongly alluded to the fact that it

was a significant factor for a successful M & E of road construction projects. This was confirmed by the separate uninfluenced responses from the contractors' staff discussed later in this chapter. Responses on the influence of M & E by record keeping of data obtained from the M & E exercise and availability of M & E tools resonated significantly with the objectives of the study since it was hugely agreed to be a significant influence at 43% and 54% respectively.

However, it was observed that calibration of M & E equipment was not a major influence in M & E success in road construction projects in KeNHA. This could be attributed to the fact that it was the same group of respondents that had indicated the absence or limited availability of M & E tools therefore their concern seemed more on the tools being available than even for them to be reliable in their measurement capability. Institutional capacity was also given a bias of 42% strongly agreeing and 37 agreeing with 7% weakly agreeing leaving only 14% of the respondents in the disagreement category.

The results show that the respondents agreed with the statements provided on elements of other specific monitoring tools used and their possible influences on M & E of road construction projects. This is shown by the means which range between 2.9 and 4.3.

4.5.4 Item on Contractor influence

Respondents were asked a number of questions in relation to the role of contractors and their responses given as follows:

Table 4.16: Contractors' Influence in the Implementation of M&E Process

Response	Frequency	Percentage
No	3	10%
Yes	27	90%
Total	30	100%

Respondents gave various answers in relation to the question that required them to indicate whether contractors have an influence in the implementation of M&E.

10% of the respondents felt that contractors have no influence in M&E process while the remaining majority 90% felt that they had an influence. When asked to support their answers, those who went against said that most contractors were never involved in the exercise at KeNHA levels while those who supported argued that a number of contractors are corrupt, like short cuts

and are absentees who felt like M&E exercise was not adding value to their construction business.

The respondents in this category gave scaled ranking on the selected elements of contractors' staff and possible influences on M & E of road construction projects within the unit of study returning the following results;

Table 4.17: Rating of Contractors by M&E Officers and Supervisors

Statement	Strongly disagree	disagree	Weakly agree	agree	Strongly agree	Mean rating
Contractors' experience influences M&E	0%	10%	10%	7%	73%	4.433
Contractual relationship influence M&E.	7%	13%	17%	27%	36%	3.733
Level of education of his staff influence M&E.	10%	3%	0%	40%	47%	4.100
Awareness level of M&E exercises influences M&E.	7%	3%	10%	33%	47%	4.100
The validity of contractors' responses during M&E influences the success of M & E	7%	7%	3%	23%	60%	4.233
Lack of follow up consequences on poorly ranked Contractors participation influences success of M&E process.	3%	3%	7%	13%	74%	4.233

From the responses a majority of the respondents ranked in the agreement to all the statements that contractual relationships, level of education of contractors' staff, awareness level of the staff and validity of the contractors' responses during monitoring, lack of follow up consequences all influence the effectiveness and success of M & E processes in road construction progress. Of interest is the 74% of the respondents who felt the information gathered on poor performing contractors does not get actioned upon and the same merchants end up getting contracts awarded to them in later periods. The results show that the respondents agreed with the statements

provided on elements of contractors’ practices and possible influences on M & E of road construction projects. This is shown by the means which range between 3.7 and 4.4.

4.6 Contractors’ Personnel.

This section had a response rate of 20 successful responses from the sampled contractors’ personnel in the technical department who answered questions that were prepared in their own section of the second part of the questionnaire and their responses as per the various questions as follows.

4.6.1 Item on Influence of Other Monitoring Resources on M & E.

The table below shows the responses to the question that read, have you been engaged by the M & E team during the monitoring exercise of the Road Project?

Table 4.18: Engaging of Contractor’s Personnel by the M & E Team

Response	Frequency	Percentage
No	14	70%
Yes	6	30%
Total	20	100%

From the responses, 70% of the respondents disagreed that contractors’ personnel have been actively involved in M&E exercises by KeNHA and other stakeholders while the remaining 30% that was made of 6 respondents agreed to the idea.

A second close question read, was the period of engagement with the officers in the M&E exercise sufficient to exhaust requirements of the tasks involved, and had the responses that had 14 respondents negating while the remaining 6 went for yes response.

4.6.2 Contractor Influence on M&E.

The contractors’ personnel were asked questions that touched on their employees’ influence in M&E and had the following information.

Table 4.19: Influence of Contractor participation on M&E

Response	Frequency	Percentage
No	4	20%
Yes	16	80%
Total	20	100%

Respondents were asked with reasons whether they felt that contractors have an influence in the implementation of M&E process and had responses tabulated above. 80% of the respondents felt that contractors have an influence while the remaining 16 felt that the contractors have no influence. When asked why, the 20% argued that a number of contractors determined little and had little knowledge on M&E. On the other hand, those who went for yes felt that contractors had a significant influence since they were the people carrying out the real construction, maintenance and repair works of the roads.

In another section of the similar category, respondents were asked whether they thought that fear of reprisal influence the validity of the contractors' response during the M&E processes and an overwhelming number of 19 respondents said yes while the remaining one respondents went against.

Table 4.20: Rating of Contractor participation Influence on M&E

Statement	Strongly disagree	disagree	Weakly agree	agree	Strongly agree
Contractors' experience influences M&E.	5%	0%	10%	25%	60%
Contractual relationship influence M&E of roads.	5%	5%	5%	10%	75%
Level of education of contractors' staff influence M&E.	10%	5%	10%	5%	70%
Awareness level of M&E influences M&E.	10%	10%	10%	20%	50%
The validity of contractors' responses on queries influences M&E.	5%	5%	5%	35%	50%

Lack of follow up consequences on poorly

ranked contractors influences M&E. 10% 5% 15% 20% 50%

From the responses a majority of the respondents were in agreement to all the statements that Contractors' experience, contractual relationships, level of education of contractors' staff, awareness level of the staff and validity of the contractors' responses during monitoring and awareness level of the monitoring procedures by contractors' technical staff, lack of follow up consequences all influence the effectiveness and success of M & E processes in road construction progress.

60% of the respondents strongly agreed that contractor's experience is a significant influence to M & E of road construction projects. 75% strongly agreed that the contractual relationship of the contractor and the supervision team has an influence in M & E.

The other three statement ranked highest at 50% of respondents strongly agreeing that awareness level of the contractors' staff in M & E processes, validity of the response to queries raised in the field during M & E exercises as well as lack of punitive measures as follow up to M & E findings by contractors' are significant influences to the success of M & E processes in road construction projects in KeNHA central Region.

4.7 Hypothesis testing for influence of availability of Financial Resources in M&E

H₁: Availability of funds influence monitoring and evaluation of Road Infrastructural Construction Projects within KeNHA's Central Region.

Table 4.21: Showing Chi-Square Testing on availability of funds

O	E	d	d ²	d ² /E
1	6	-5	25	4.2
2	6	-4	16	2.7
1	6	-5	25	4.2
10	6	4	16	2.7
16	6	10	100	16.7
				$\sum d^2/E = 30.5$

$\chi^2_c = 30.5 > \chi^2_{\alpha, 0.05} = 9.488$ at 4 degrees of freedom and 5% level of confidence.

Since the calculated chi-square value of 30.5 is greater than the critical chi-square value at 5% level of confidence, we accept the alternative hypothesis. Thus, availability of funds influences monitoring and evaluation of road infrastructural construction projects within KeNHA's Central Region.

4.8 Hypothesis testing for influence of availability of M & E Personnel on M&E

H₁: Availability of monitoring and evaluation personnel in KeNHA influences road infrastructural construction projects within KeNHA's Central Region.

Table 4.22: Showing Chi-Square Testing on availability of personnel

O	E	d	d ²	d ² /E
0	6	-6	36	6
0	6	-6	36	6
10	6	4	16	2.7
10	6	4	16	2.7
10	6	4	16	2.7
				$\sum d^2/E = 20.1$

$$\chi^2_C = 20.1 > \chi^2_{0.05} = 9.488 \text{ at 4 degrees of freedom and 5\% level of confidence.}$$

Since the calculated chi-square value of 20.1 is greater than the critical chi-square value at 5% level of confidence, we accept the alternative hypothesis. Thus, the availability of monitoring and evaluation personnel in KeNHA influences road infrastructural construction projects within KeNHA's Central Region.

4.9 Hypothesis testing for influence of other Monitoring Resources on M & E

H₁: Other resources have a significant influence in monitoring and evaluation of road construction projects within KeNHA in Central region.

Table 4.23: Showing Chi-Square Testing on other monitoring resources

O	E	d	d ²	d ² /E
1	6	-5	25	4.2
1	6	-5	25	4.2
1	6	-5	25	4.2
11	6	5	25	4.2
16	6	10	100	16.7
				$\sum d^2/E = 33.5$

$$\chi^2_C = 33.5 > \chi^2_{0.05} = 9.488 \text{ at 4 degrees of freedom and 5\% level of confidence.}$$

Since the calculated chi-square value of 33.5 is greater than the critical chi-square value at 5% level of confidence, we accept the alternative hypothesis. Thus, other resources have a significant influence in monitoring and evaluation of road construction projects within KeNHA in Central region.

4.10 Hypothesis testing for Influence of contractor participation in M & E

H₁: Contractors participation has a significant influence in monitoring and evaluation of road construction projects within KeNHA in Central region.

Table 4.24: Showing Chi-Square Testing on contractor participation

O	E	d	d²	d²/E
0	6	-6	36	6
3	6	-3	9	1.5
3	6	-3	9	1.5
2	6	4	16	2.7
22	6	16	256	42.7
				$\sum d^2/E = 54.4$

$\chi^2_{C=54.4} > \chi^2_{\alpha=0.05} = 9.488$ at 4 degrees of freedom and 5% level of confidence.

Since the calculated chi-square value of 54.4 is greater than the critical chi-square value at 5% level of confidence, we accept the alternative hypothesis. Thus, contractors have a significant influence in monitoring and evaluation of road construction projects within KeNHA in Central region.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the study findings, discussions, conclusions and recommendation of the research. The chapter also contains suggestions of related studies that may be carried out in the future.

5.2 Summary of Findings

The purpose of this research project was to investigate the key determinants that influence efficiency of monitoring and evaluation processes of road infrastructure construction projects during their implementation by KeNHA in Central Region. From an analysis and review of the research data and additional data gathered through questionnaires, the following became apparent.

From objective one that sought to establish how availability of funds influences monitoring and evaluation of Road infrastructural Construction Projects within KeNHA's Central Region, the following results were arrived at. 80% of the respondents argued that there is no dedicated budget for M & E processes in KeNHA, Central Region. 20% of the respondents went for yes meaning that as much as there is a dedicated budget for M & E processes in KeNHA, Central Region, the budget is limited. On the other hand, 90% of the respondents supported the idea that financial resources have an influence in the M&E process of the road projects implemented by KeNHA that is operated in Central region of Kenya while the remaining 10% felt that financial resources have no influence. When asked to give reasons, respondents argued that, with enough financial resources, the M&E exercise will be accelerates and the rate of hiring the required expertise will be higher and this will fall down to increased M&E process. On a rating scale of a number of statements related to financial resources responses were different. For example, in relation to the first statement that read, sources of funds have a significant influence in projects M&E success, 2 respondents strongly disagreed, 2 disagreed, 4 weakly agreed, 10 agreed while the rest who made 12 respondents strongly agreed. On the issue that touched on amounts

allocated for M&E strategy, 1 respondent strongly disagreed, 2 disagreed, 1 weakly agreed, 10 agreed while the rest who made 16 respondents strongly agreed.

In relation to the second objective which sought to evaluate how availability of monitoring and evaluation personnel in KeNHA influences road infrastructural construction projects within KeNHA's Central Region, 93% of the respondents argued against the idea that the number of deployed M & E officers meets the capacity required for serving the projects in KeNHA Central region while the remaining 7% of the respondents who were 2 supported the idea that the number of deployed M & E officers meets the capacity required for serving the projects in KeNHA Central region. On a rating scale of a number of statements related to monitoring and evaluation personnel responses were different. For example in relation to the first statement that read, number of M&E staff influences effective M&E process at KeNHA, 0 respondents strongly disagreed, 1 disagreed, 2 weakly agreed, 10 agreed while the rest who made 17 respondents strongly agreed. On the issue that touched on dominance of the unskilled M&E staff in KeNHA projects influences the level of efficiency of M&E processes, 3 respondents strongly disagreed, 12 disagreed, 10 weakly agreed, 3 agreed while the rest who made 2 respondents strongly agreed.

On the third objective that sought to assess how other monitoring resources influences monitoring and evaluation of road construction projects within KeNHA in Central region, 25 respondents who made 83% argued against the idea that there exists a structured M&E plan in KeNHA to guide its activities. However, this was supported by 5 respondents who made 17% of the respondents in this category. A similar question that read, does the existing M&E plan have exhaustive capacity guidelines for effective and efficient M&E processes, was asked and responses were as follows: 29 respondents who represented 97% went against the idea while the remaining 1 respondent who represented 3% supported the idea. According to the second section that sought for reasons behind this, the 29 respondents gave reasons that ranged from the current M&E plans being just statements put down to satisfy the seniors, others felt that the plans were aimed at witch hunting while others felt that there is no M&E plan even a single one done by non-biased expertise.

In relation to the fourth objective that sought to evaluate how contractor participation influences monitoring and evaluation of road construction projects within KeNHA in Central region, 10% of the respondents felt that contractors have no influence in M&E process while the remaining majority 90% felt that they had an influence. When asked to support their answers, those who went against said that most contractors were never involved in the exercise at KeNHA levels while those who supported argued that a number of contractors are corrupt, like short cuts and are absentees who feel like M&E exercise is just a waste of time like any other unnecessary activity. From the responses in the rating scale, in relation to the first statement that read, Contractors' experience influences the success of M&E processes, 0 respondents strongly disagreed, 3 disagreed, 3 weakly agreed, 2 agreed while the rest who made 22 respondents strongly agreed. On the issue that touched on Contractual relationship has an influence in the M&E of roads, 2 respondents strongly disagreed, 4 disagreed, 5 weakly agreed, 8 agreed while the rest who made 11 respondents strongly agreed.

5.3 Discussion of Findings

Results from the above have shown that a number of responses and views from the field are tied with the finding in the review of the secondary information in chapter two. For example, from objective one that sought to establish how availability of funds influences monitoring and evaluation of Road infrastructural Construction Projects within KeNHA's Central Region, the following results were arrived at. 80% of the respondents argued that there is no dedicated budget for M & E processes in KeNHA, Central Region. 20% of the respondents went for yes meaning that as much as there is a dedicated budget for M & E processes in KeNHA, Central Region, the budget is limited.

On the other hand, 90% of the respondents supported the idea that financial resources have an influence in the M&E process of the road projects implemented by KeNHA that is operated in Central region of Kenya while the remaining 10% felt that financial resources have no influence. In agreement to this is the World Bank report (2012) that shows that, allocations for monitoring and maintenance of roads in Kenya and across Africa are well below the optimal requirements (defined as a maintenance strategy which produces an Economic Interest Rate of Return - EIRR of over 12 percent), even though the economic return at the margin is frequently well over 100

percent. The budget allocation process is flawed and politicized, and funds are unfortunately not allocated to finance expenditures with the highest return (World Bank, 2012).

Also, Schlosse (1993) and Ahadzie (2011) in unison are in agreement that roads monitoring and evaluation is underfunded. They argue that, the main reason why road monitoring and maintenance is underfunded is that road authorities work under constrained budgets owing to the fact that road users pay very little for the use of the road network. They pay the usual import duties, excise taxes and sales taxes, but so does everyone else. Road user charges in the form of vehicle license fees, a specific surcharge added to the price of fuel (the fuel levy), and international transit fees rarely cover more than 50 percent of expenditures on maintenance and, in some countries, barely cover 25 percent.

In relation to the second objective which sought to evaluate how availability of monitoring and evaluation personnel in KeNHA influences Road Infrastructural Construction projects within KeNHA's Central Region, 93% of the respondents argued against the idea that the number of deployed M & E officers meets the capacity required for serving the projects in KeNHA Central region while the remaining 7% of the respondents who were 2 supported the idea that the number of deployed M & E officers meets the capacity required for serving the projects in KeNHA Central region. On a rating scale of a number of statements related to monitoring and evaluation personnel responses were different. For example in relation to the first statement that read, number of M&E staff influences effective M&E process at KeNHA, 0 respondents strongly disagreed, 1 disagreed, 2 weakly agreed, 10 agreed while the rest who made 17 respondents strongly agreed.

According to Bahl (1992) and World Bank (2013), Human resource constraints are the single most important issue facing most road agencies. They suffer from an acute shortage of technically qualified staff and still employ far too many unskilled workers. In Zambia, of the nine road agencies, one has collapsed (two are close to collapsing (Malawi and Mozambique), and four are heavily dependent on expatriates (Botswana, Lesotho, Namibia, and Tanzania). Salaries in some road agencies are so low that day-lighting has become part of the status quo.

Also supporting the above findings, Rausch (1994) argues that the shortage of technical staff, together with the incidence of day lighting and moonlighting, are entirely attributable to the

growing disparity between civil service salaries and those for comparable positions in the private sector. Omran et al (2012) also argues that, day lighting is now a systemic problem in Africa. Too many technical staff hold second jobs and owe their loyalty to another employer. And this problem cannot be solved through training, bonded studentships, and improved allowances.

On the third objective that sought to assess how other monitoring resources influences monitoring and evaluation of road construction projects within KeNHA in Central region, 25 respondents who made 83% argued against the idea that there exists a structured M&E plan in KeNHA to guide its activities. However, this was supported by 5 respondents who made 17% of the respondents in this category. A similar question that read, does the existing M&E plan have exhaustive capacity guidelines for effective and efficient M&E processes, was asked and responses were as follows: 29 respondents who represented 97% went against the idea while the remaining 1 respondent who represented 3% supported the idea. A number of scholars have had similar arguments.

For example, Jackson (1998) and Omran et al, (2012) argue that Monitoring resources include human resources and time. Adequate institutional arrangements and institutional and human capacity are essential for any M&E project, including functioning of MIS. The level of skills required depends on the complexity of the project. Competitive Research Grant Projects and projects using contracting and involvement of a wide range of stakeholders across several R&E subprojects are demanding in M&E capacity the implementation of a well-functioning M&E system both at the subproject and the overall program level can be a major challenge. Establish a centralized M&E unit. In general, projects may either establish an M&E unit which is integrated into the Project Implementation Unit or not have a centralized M&E unit but share M&E tasks among the implementing partners and primary stakeholders. For complex ARE projects, it is recommended that a centralized M&E unit be established within the main implementing institution.

In relation to the fourth objective that sought to evaluate how contractors' participation influences monitoring and evaluation of road construction projects within KeNHA in Central region, 10% of the respondents felt that contractors have no influence in M&E process while the remaining majority 90% felt that they had an influence. When asked to support their answers, those who went against said that most contractors were never involved in the exercise at KeNHA

levels while those who supported argued that a number of contractors are corrupt, like short cuts and are absentees who feel like M&E exercise is just a waste of time like any other unnecessary activity. In connection to the above results, Thomas (2002) identified the main performance criteria of M&E of construction projects as financial stability, progress of work, standard of quality, health and safety, resources, relationship with clients, relationship with consultants, management capabilities, claim and contractual disputes, relationship with subcontractors, reputation and amount of subcontracting; factors that are mostly lacking in Kenya's highways construction especially in the central region whereby corruption is the epitome of contractual agreements.

Another similar report shows that, in a nutshell summary of the performance of roads monitoring in Kenya, the World Bank (2013; 2014) wrote an article, 'Monitoring, Implementation and Evaluation of Roads'. In the argument, Construction and M&E, especially with respect to the contracting and bidding for civil works, requires the effective evaluation and supervision of contractors and their bids. Without this ability at tender, marginal or unacceptable bidders can distort the bidding process by excessive underbidding for contracts or future inability to complete. At the point of construction, poor contractors can raise owner's supervision and staffing costs substantially.

5.4 Conclusions

From a series of issues that have come into bow starting from the literature review, the information gathered in the field and the summary of the findings, the research concluded that financial resources are central in determining the future and the success of the M&E process needs specifically identified sources of funds, sufficient funds and funds that are flexibly allocated for the process.

The researcher also concludes that monitoring and evaluation personnel are missing in the process to the required capacities. The number of employees trained to monitor and evaluate the process is too little and this has made it difficult to successfully implement the M&E strategy.

Tied to the above are other monitoring and evaluation resources like stakeholders, institutional capacity and time. The time allocated for M&E is very limited, the stakeholders never support the process etc. and this has led to stagnating M&E process.

Finally, the researcher concludes that contractual experience, reputation, capability, contractual disputes are ignored and at times politicization of the contracts and contractors. This has reduced the spirit of M&E in almost all the projects in KeNHA's central region as shown by the responses and the literature review.

5.5 Recommendations

Based on the findings of the study that has come from the respondents in the field and the literature review, the researcher recommends that the relevant government bodies, the NGOs, World Bank and other donors, the contractors and all the bodies handling these projects must have a specific well defined source of financing the M&E exercise. Also, enough financial resources should be allocated and the budget allocation process should be effective so as to have the funds availed at the right time and be in the right hands in order to have the M&E processes a success.

In relation to the second objective, the researcher recommends that monitoring personnel should be hired, well remunerated and well trained so as to achieve the target of M&E. The people to be hired must be in any case be well trained and have experience in high standard roads M&E. Also they can contract bodies like World Bank to have them the best expatriates for the M&E.

The study further recommends that time, instructional capacity, stakeholders and many more should and must be considered before during and after carrying out any M&E on the road projects. This will help give the best target, acquire required resources and finally make the M&E process a success.

Finally, the researcher recommends that contractors should be hired in strict terms that take into consideration the experience, reputation, capacity and how in one way or the other the contractors have previously solved issues in contractual agreements. Also the political contracting should be avoided so that the M&E exactly is done practically and is done without any bias and subjectivity.

5.6 Suggestions for Further Research

1. Due to the nature of the study, this study was carried out in Kenya's central only and therefore, similar studies can be done in other KeNHA regions.
2. Another study can be done to examine the determinants of successful M&E process among the KURA and KeRRA run road projects in Kenya's central region.
3. Finally, a study can be done to examine effects of monitoring of evaluation of road projects run by KeNHA in the central region.

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APPENDICES

Appendix I: Letter of Introduction

Kenneth Gitahi Kariuki,
P.O. Box 2-10400,
Nanyuki.
3rd February, 2014.

To whom it may concern:

Dear Respondent

RE: ACADEMIC RESEARCH QUESTIONNAIRE

I am a student at University of Nairobi pursuing a Master's degree in project planning and management. This Questionnaire is part of my research project and your kind response to the questionnaire is crucial to the successful completion of the research project. The information given will be treated confidentially and will not be used for any other purpose except for academic.

Please respond as honestly as possible.

Participation in this exercise is voluntary. You are however encouraged to answer all questions. Please not that there is no right or wrong answer to this questions and your honest opinion will be highly appreciated.

Yours faithfully,

Kenneth Gitahi Kariuki.

Appendix II: Research Questionnaire

Questionnaire 1: For use by Monitoring and Evaluation Officers and Project Supervisors.

Please respond to each item in this study as guided. This study will be used for academic purposes only.

SECTION A: Demographic data.

Instructions: Please tick (√) in the appropriate answer-brackets to each of the questions in this section.

1. Gender:

Male () Female ()

2. Age:

18-30yrs () 31-40yrs () 41-50yrs () 51-60yrs () over 61

3. Level of education:

Vocational Training () Diploma () Degree () Masters () Others ()

4. Work experience

Less than 10 years () between 10-20 () between 20-30 () Over 30.

Section B: Availability of Financial Resources for Monitoring and Evaluation

5. Is there a dedicated budget for M & E processes in KeNHA, Central Region?

Yes () No ()

If answer is yes in 5 above answer question 6 next,

6. In your own opinion, do you think that budgetary allocation amount disbursed meet the time deadlines?

Yes () No ()

7. Was the amount provided on the budget sufficient for an effective M&E exercise?

Yes () No ()

8. (a) Does availability of financial resources influence the effectiveness of M&E processes of KeNHA projects in the central region? Yes () No ()

(b) Give reasons for your answer above.

.....
.....

9. On a scale of 1 to 5, rate the extent to which you agree or disagree with the following statements in relation to financial resources and the effectiveness of M&E processes. (Where 1= Strongly Disagree 2= Disagree 3= Weakly Agree 4= Agree 5= Strongly Agree).

Statement	1	2	3	4	5
Sources of funds have a significant influence in projects M&E success.					
Amount allocated for the implementation of M&E strategy are limited.					
Budget allocation process for the M&E of roads projects in KeNHA is restrictive.					
Budgetary processes are bureaucratic; affecting M&E of projects.					

Section C: Availability of Monitoring and Evaluation Personnel

10. Do you think that the number of deployed M & E officers deployed meets the capacity required for serving the projects in KeNHA Central region? Yes () No ()

11. (a) Do you think that personnel influence the effective implementation of the M&E strategy in the KeNHA run roads in central region? Yes () No ()

(b) Give a reason for your answer above

.....

12. Indicate your position on the statements below appropriately: **1= Strongly Disagree 2= Disagree 3= Weakly Agree 4= Agree 5= Strongly Agree**

Statement	1	2	3	4	5
Number of M&E staff influences effective M&E process at KeNHA.					
Dominance of the Unskilled M&E staff in KeNHA projects influences the level of efficiency of M&E processes.					
Training levels of M&E personnel influences effectiveness of M&E.					
Remuneration of M&E staff influences significantly M&E of roads Projects.					

Section D: Influence of Other Monitoring Resources on M & E

13. Is there an existing structured M&E action plan in KeNHA that is in existence?

Yes () No ()

14. (a) Does the existing M&E plan have exhaustive capacity guidelines for effective and efficient M&E processes? Yes () No ()

(b) Give reasons for your answer above.

.....

15. Does KeNHA maintain a dedicated and efficient field transportation means for the M & E staff teams?

Yes () No ()

16. Is the period designated for the M&E exercise enough to exhaust requirements of the tasks involved? Yes () No ()

18. Indicate the extent to which you agree or disagree with the following statements in relation to other monitoring resources and M&E process. **(Where 1= Strongly Disagree 2= Disagree 3= Weakly Agree 4= Agree 5= Strongly Agree).**

Statement	1	2	3	4	5
Limited time frame influences effectiveness of M&E of road projects					
Reliable transport influences efficiency of M&E processes of road projects					
Co-operation between M&E officers and supervisors influence the success of M&E.					
Proper record keeping of project sites influence the effectiveness of M&E process					
Availability of Monitoring tools influences the success of M&E processes					
Calibration of Monitoring Equipment influence the viability of M&E processes					
Institutional Capacity is a determinant resource that influences M&E in central.					

Section E: Item on Contractors

20. (a) Do you think that Contractors participation has an influence in the implementation of M&E process?

Yes () No ()

(b) Give reasons for your answer above on how they are likely/ unlikely to influence M&E.

.....
.....

21. Indicate the degree to which you agree or disagree with the following statements.

(Where 1= Strongly Disagree 2= Disagree 3= Weakly Agree 4= Agree 5= Strongly Agree).

Statement	1	2	3	4	5
Contractors' experience influences the success of M&E processes.					
Contractual relationship have an influence in the M&E of roads.					
Level of education of contractors' staff has an influence on the effectiveness of M&E.					
Awareness level of M&E exercises by contractors' staff influences success of M&E processes.					
The validity of contractors' responses on M&E queries influences success of the process.					
Lack of follow up consequences on poorly ranked contractors influences success of M&E process.					

Questionnaire 2: For use by Contractors' personnel.

Please respond to each item in this study as guided. This study will be used for academic purposes only. Please insert a tick in the appropriate answer-brackets to each of the questions in this section.

Section A: Demographic data.

Instructions: Please insert a tick in the appropriate answer-brackets to each of the questions in this section.

1. Gender:

Male () Female ()

2. Age:

18-30yrs () 31-40yrs () 41-50yrs () 51-60yrs () over 61

3. Level of education:

Vocational Training () Diploma () Degree () Masters () Others ()

4. Work experience

Less than 10 years () Between 10-20 () Between 20-30 () Over 30.

Section B: Influence of Other Monitoring Resources on M & E.

1. Have you been engaged by the M & E team during the monitoring exercise of the Road Project?

Yes () No ()

2. Was the period of engagement with the officers in the M&E exercise sufficient to exhaust requirements of the tasks involved? Yes () No ()

Section C: Contractors participation influence on M&E.

3. (a) Do you think that Contractors have an influence in their participation during the implementation of M&E process?

Yes () No ()

(b) Give reasons for your answer above on how they are likely/ unlikely to influence M&E.

.....

6. Do you think fear of reprisal influence the validity of the contractors 'response during the M&E processes. Yes () No ()

7. Indicate the degree to which you agree or disagree with the following statements.

(Where 1= Strongly Disagree 2= Disagree 3= Weakly Agree 4= Agree 5= Strongly Agree).

Statement	1	2	3	4	5
Contractors' experience influences the success of M&E processes.					
Contractual relationship have an influence in the M&E of roads.					
Level of education of contractors' staff has an influence on the effectiveness of M&E.					
Awareness level of M&E exercises by contractors' staff influences success of M&E processes.					
The validity of contractors' responses on M&E queries influences success of the process.					
Lack of follow up consequences on poorly ranked contractors influences success of M&E process.					

Appendix III: Table for Determining Sample Size for a Given Population

Table for Determining Sample Size for a Given Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: "N" is population size
"S" is sample size.

Source: Krejcie & Morgan, 1970