MONITORING AND EVALUATION PRACTICES AND PERFORMANCE OF
KENYA NATIONAL HIGHWAY AUTHORITY ROAD CONSTRUCTION
PROJECTS IN NAIROBI CITY COUNTY, KENYA

CHRISTOPHER MWANGI NJERU
D53/OL/CTY/26580/2015

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

APRIL, 2022
DECLARATION

This research project is my original work and has not been presented for a degree in any other University or for any other award. No part of this project can be reproduced without the authority of the author and/or Kenyatta University.

Signature_________________________________        Date________________

CHRISTOPHER MWANGI NJERU

D53/OL/CTY/26580/2015

I confirm that the work reported in this project has been carried out by the candidate under my supervision as the appointed University Supervisor.

Signed………………………………                          Date……………………………

DR. CALEB KIRUI

MANAGEMENT SCIENCE DEPARTMENT

KENYATTA UNIVERSITY
DEDICATION

I dedicate this project study to the members of my family and colleagues. I am specifically indebted to my dear wife Hilda Muthoni Mwangi for her relentless pursuit of excellence in this academic work.
ACKNOWLEDGEMENT

I owe the fruitful completion of this study to Dr. Kirui, PhD, for guiding and supporting my efforts in putting this study together.
# TABLE OF CONTENT

- DECLARATION .......................................................................................................................... ii
- DEDICATION ............................................................................................................................. iii
- ACKNOWLEDGEMENT ............................................................................................................. iv
- TABLE OF CONTENT ............................................................................................................... v
- LIST OF TABLES ..................................................................................................................... viii
- LIST OF FIGURES ..................................................................................................................... ix
- ABBREVIATIONS AND ACRONYMS ................................................................................ x
- OPERATIONAL DEFINITION OF TERMS ............................................................................. xi
- ABSTRACT ............................................................................................................................... xiii

## CHAPTER ONE ...................................................................................................................... 1

1.1 Background of the Study ..................................................................................................... 1

1.1.1 Project Performance ....................................................................................................... 4

1.1.2 Monitoring and Evaluation Practices ........................................................................... 5

1.1.3 KeNHA Projects in Nairobi City County, Kenya ......................................................... 7

1.2 Statement of the Problem .................................................................................................. 8

1.3 Objectives of the study ...................................................................................................... 10

1.3.1 General Objective ......................................................................................................... 10

1.3.2 Specific Objectives ....................................................................................................... 10

1.4 Research Questions .......................................................................................................... 10

1.5 Significance of the Study .................................................................................................. 11

1.6 Scope of the Study ............................................................................................................. 11

1.7 Limitations of the study..................................................................................................... 12

1.8 Organization of the Study ................................................................................................ 12

## CHAPTER TWO .................................................................................................................... 13

LITERATURE REVIEW ............................................................................................................. 13

2.1 Introduction ......................................................................................................................... 13

2.2 Theoretical Framework .................................................................................................... 13

2.2.1 Theory of Change ......................................................................................................... 13
4.5 Descriptive Statistics .................................................................................................................. 41
  4.5.1 Road Construction Project Performance ........................................................................ 42
  4.5.2 Budget Allocation .............................................................................................................. 43
  4.5.3 Baseline Surveys ............................................................................................................... 45
  4.5.4 Performance Reviews ...................................................................................................... 47
  4.5.5 Capacity Building ............................................................................................................ 49
4.6 Result of Diagnostic Tests ........................................................................................................ 51
  4.6.1 Multicollinearity Tests ..................................................................................................... 51
  4.6.2 Normality Test ................................................................................................................ 52
  4.6.3 Homoscedasticity Test .................................................................................................... 53
4.7 Inferential Statistics .................................................................................................................. 54
  4.7.1 Model summary ............................................................................................................... 54
  4.7.2 ANOVA .......................................................................................................................... 55
  4.7.3 Coefficients of Regression ............................................................................................. 56
CHAPTER FIVE ........................................................................................................................................ 58
SUMMARY, CONCLUSION AND RECOMMENDATIONS ................................................................. 58
  5.1 Introduction ........................................................................................................................ 58
  5.2 Summary ............................................................................................................................. 58
  5.3 Conclusion ........................................................................................................................... 61
  5.4 Recommendations .............................................................................................................. 63
    5.4.1. Suggestions for Improvement ..................................................................................... 63
    5.4.2. Study Contributions to the Body of Knowledge ......................................................... 64
    5.5.3. Suggestions and Proposals for Further Research ....................................................... 64
REFERENCES ..................................................................................................................................... 65
APPENDICES .................................................................................................................................... 72
  Appendix I: Letter of Introduction ............................................................................................ 72
  Appendix II: Questionnaire ...................................................................................................... 73
  Appendix III: List of Road Infrastructure Projects ................................................................. 78
LIST OF TABLES

Table 2.1: Summary of Research Gaps ................................................................. 24
Table 3.1: Target Population................................................................................. 32
Table 3.2: Instrument Validity Test....................................................................... 34
Table 3.3: Reliability of the Study Instrument....................................................... 35
Table 4.1: Response Rate...................................................................................... 38
Table 4.2: Level of Education of Respondents .................................................... 40
Table 4.3: Distribution of respondents by age ....................................................... 41
Table 4.4: Construction Project Performance ....................................................... 43
Table 4.5: Budget Allocation.................................................................................. 45
Table 4.6: The Baseline Surveys.......................................................................... 47
Table 4.7: Performance Reviews and Project Performance................................. 49
Table 4.8: Capacity Building and Project Performance ........................................ 51
Table 4.10: Normality Test Results........................................................................ 53
Table 4.11: Homoscedasticity Test on Road construction and Performance.......... 54
Table 4.12: Model summary.................................................................................. 55
Table 4.13: ANOVA.............................................................................................. 55
Table 4.14: Regression Coefficients on Road Construction Performance ............ 57
LIST OF FIGURES

Figure 2.1: Conceptual Framework................................................................. 30
## ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVU</td>
<td>African Virtual University</td>
</tr>
<tr>
<td>CF</td>
<td>Conceptual Framework</td>
</tr>
<tr>
<td>CSFs</td>
<td>Critical Success Factors</td>
</tr>
<tr>
<td>IGR</td>
<td>Internally Generated Revenues</td>
</tr>
<tr>
<td>KENHA</td>
<td>Kenya National Highways Authority</td>
</tr>
<tr>
<td>KURA</td>
<td>Kenya Urban Road Authority</td>
</tr>
<tr>
<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
</tr>
<tr>
<td>RBV</td>
<td>Resource Based View</td>
</tr>
<tr>
<td>SCA</td>
<td>Sustainable Competitive Advantage</td>
</tr>
<tr>
<td>SMEs</td>
<td>Small, Medium Enterprises</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
</tr>
<tr>
<td>U.S</td>
<td>United States</td>
</tr>
<tr>
<td>KPMG</td>
<td>Klynveld Peat Marwick Goerdeler</td>
</tr>
<tr>
<td>KERRA</td>
<td>Kenya Rural Roads Authority</td>
</tr>
<tr>
<td>CARE</td>
<td>Christian Action Research and Education</td>
</tr>
<tr>
<td>ISA</td>
<td>International Studies Association</td>
</tr>
<tr>
<td>PV</td>
<td>Planned Value</td>
</tr>
</tbody>
</table>
OPERATIONAL DEFINITION OF TERMS

**Baseline Surveys:** A target community analysis is conducted before the project is introduced to assess the current state that requires attention. This is enabled through data acquisition, planning, baseline reports and timing.

**Budget Allocation:** is the amount of funds allocated for each line of expenditure. It is measured through cost of evaluating project, time of remittance, scope and benchmarking.

**Capacity Building:** is the process of individuals and organizations acquiring, refining, and maintaining the expertise, information, equipment, and other resources they need to do their jobs well. The level of assessor preparation, assigned roles and responsibilities, training frequency, and mission graduation are all indicators.

**Monitoring and Evaluation Practices:** are Supervising activities in progress to ensure they are on-course and on-schedule in meeting the objectives and performance targets and an appraisal of a project is done to determine its worth or fitness. In this study, M&E practices include baseline surveys, budget allocation, capacity building and performance reviews.

**Performance Reviews:** is a formal appraisal in which managers determine if the performance of the project is deteriorating or improving. It evaluates the management employees' work, identify
their strengths and weaknesses, provide feedback, and set
goals for future performance. It is measured using regular
reviews, feedback, goal setting and employee strengths & weaknesses.

**Project Performance:** denotes how much outcomes have been accomplished, comprises of practicality, number of expectations accomplished, number of exercises, fulfilled clients and expenditure of plan. It is measured using cost effectiveness, completion time, quality standards and process efficiency.

**Road Construction Projects:** refer to works involving construction, maintenance or repair of a road or highway.
ABSTRACT

Despite efforts and measures by the government of Kenya to improve performance of road construction projects, government funded projects are still seen to face delivery challenges due to various factors associated with quality, completion schedules, and cost. The intended benefits are therefore delayed or partly realized due to poor planning and implementations. The subpar performance of road projects can be linked to time efficiency, adequacy of resources, and preparation measures. This study examined the effect of monitoring and evaluation practices on performance of road construction projects done by the Kenya National Highway Authority (KENHA) within Nairobi City County, Kenya. The specific objectives were to identify the impact of budget allocations, baseline studies, performance reviews and capacity building on performance of the road construction projects. This research was supported by the theory of change, resource-based view theory, and constraint theory. Descriptive and explanatory research projects were utilized. The study targeted seven road construction projects undertaken by Kenya National Highway Authority for the period 2015-2019 within Nairobi City County. The unit of observation was 100 management employees in the ministry of Roads, Public Works and Transport in Nairobi City County and 7 Kenya National Highway Authority officials. A census of the road construction projects was done. Structured questionnaires were used to obtain primary data for the study. Percentage, Mean, and Standard Deviation were used as descriptive statistics. The relationship between the study constructs was tested using Pearson correlation and regression analysis with a model. Tables and graphs were used to present the analysed data. The study found out that, budget allocation was a key performance factor. Specifically, project cost evaluation helped to determine the right budget which positively affected the performance of road projects. Timely disbursement of funds ensured that the projects were delivered in good time. The study further suggested that baseline surveys were key in validating project scope thus assisted to set realistic expectations in time, cost, and quality. Similarly, the study indicated that performance reviews and capacity building enhanced the performance of road construction projects through employees feedback sessions, target setting and reviews as well as adequate resourcing of the project team. The study therefore concluded that the specific objectives of this study had a positive effect on the performance of KENHA road construction projects within the Nairobi City County. It was recommended that road construction budgets be disbursed in a timely manner. Continuous evaluation of gaps in resourcing is critical in building required capacity. Regular performance reviews should be incorporated to appraise the performance of the project. The study is thought to add to the knowledge base of project management, M&E function as well as the performance of projects. Finally, this study suggests further study on the topic with different variables, similar study in other Counties, as well as a study of privately implemented road construction projects.
CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Infrastructure or social projects are initiated to solve a particular problem, meet community needs, or take advantage of opportunities that exist in the business world. Projects perform better in developed countries than in developing countries, which are faced with a variety of challenges, including poor financial allocations, poor strategic plans, poor expertise, poor communication, poor monitoring, and evaluation (Ye, Shi, Chong, Fu, Liu & He 2018). According to Serrador and Turner (2014), project performance is determined by the following key factors: project mission, top management support, project plans / plans, customer service, employees, project support technology, customer acceptance, monitoring, and feedback and communication channels.

Project monitoring involves continuously assessing the implementation of projects with respect to schedules engendered during its design, inputs utilization and services that is offering to those it is meant for. This is done to assess in a timely manner whether the program is adequate, effective, and efficient, has influenced the beneficiaries, whether the intervention is sustainable and whether it is in accordance with the purpose of its creation (Simon, 2015). Project evaluation, on the other hand, is an objective review of ongoing or completed projects in terms of design, execution, and outcomes (Maendo, James & Kamau, 2018). M&E provides project contractors with useful information on project status for initial and final assessment. This information helps identify the required changes, particularly in the structure of the project, their impacts, and the
tentative date for completion. Infrastructure project monitoring and evaluation is regarded as a critical management mechanism because it aids in the monitoring of project progress (Tesfaye, 2019).

Countries like the United States of America (US) have achieved successful development by implementing effective and efficient processes that monitor the achievement of development goals all over the world (Katharine & John, 2015). In global efforts for environmental, economic, and social sustainability, project surveillance in Spain is becoming an increasingly important tool (Lombardo & Maetzke, 2019). For clarification, the history of surveillance in France is broken down into stages, showing how concepts typically grow and perceptions have changed over time. In China, special government officials oversee project surveillance (Angus & Mohammed, 2014).

There are regular monitoring activities in India and Malaysia, ranging from comprehensive national ranking systems to baseline monitoring of selected programs in many Middle Eastern countries (Zvoushe & Gideon, 2013). In all areas of government, it is critical to centralize and improve monitoring and assessment capability. A significant number of high-cost projects were undertaken, according to Chofreh, Goni, Malik, Khan, and Kleme (2019), with sustainability issues frequently encountered. Concerns have been raised by the World Bank, the Asian Development Bank, and bilateral aid agencies. There is a shortage of trained workers, as well as inadequate supervision and site management, according to Faridi and El-Sayegh (2016). In the United Arab Emirates, project delays have been caused by equipment shortages and damage caused by inefficient control practices.
Even though the principle of M&E is new in Africa and has yet to be widely embraced as an integral part of operations in organizational ventures, it has recently been copied by a variety of communities, industries, and firms (Kissi et al., 2019). Fonbeyin (2020) established that in Libya, factors like stakeholders’ involvement, support and perceptions of M&E, sources of financial resources and the amounts allocated, the government policies and external conditions tied to donors, training and education for the employees influenced project performance. The South African government attaches great importance to oversight. A study by Muzondo and McCutcheon (2018) reported that service quality and attitude are key factors limiting the success of monitoring project implementation in South Africa. In Rwanda, poor project execution, as evidenced by rising maintenance costs, may be due to a lack of successful monitoring and evaluation (Umugwaneza & Kule, 2016). In Ghana, both the government and non-governmental organizations face significant difficulties in tracking project funding. Donor funding for development projects has grown to the point that they are now referred to as development partners, reflecting Ghana’s reliance on donor support for surveillance development (Ameyaw & Chan, 2013).

In Kenya, a preliminary informal review on the determinants of M&E on construction projects in secondary schools’ implementation in Bomet, Kericho, Lamu and Kisii counties in 2010 found that most projects were caused by multiple problems and did not complete ahead of schedule. Other complex performance issues such as cost, time, poor planning, poor monitoring and evaluation, and security were also cited. (Mwangi & Kimenyi, 2014). According to Ochieng and Tubey (2013), the availability of allocated budget, scheduled for time, availability of experts in the M&E process, availability of appropriate technology, proper knowledge and proper channels of
information flow, and proper perceptions and attitudes toward M&E are all factors that affect M&E on projects, just as they are in other parts of the world.

1.1.1 Project Performance

Performance is the achievement of a specific company and is assessed using pre-set indicators that are perceived for peak, precision, price, and speed. Therefore, by considering and measuring the three constraints, reasons, prices and values, conclusions can be drawn about the performance of a project. A project is termed to have performed well if monitoring and evaluation was attributed to be successful (Ghani & Ismail, 2017). According to Franz and Messner (2019), project performance denotes how much outcomes have been accomplished, comprises of practicality, number of expectations accomplished, number of exercises, fulfilled clients and expenditure of plan.

A project is deemed successful if it is completed on time, on budget, and with the desired quality (Faridi & El-Sayegh, 2016). Project success was measured and evaluated using time, cost, productivity, client satisfaction, client adjustments, company outcomes, and health and safety indicators (Lee, Chong & Wang, 2018). Improved road construction technologies and methodologies, according to Mabin and Baldrestone (2015), will enable timely and efficient implementation of projects.

Numerous studies have adopted different measures to investigate project performance. Muchelule (2018) measured project performance in terms of timeliness, expense, scope, and service quality. Timeliness, number of deliverables shipped, number of activities, number of happy customers, and project cost were all factors regarded by Phiri as measures of project performance (2015). Ball, Grubbing, and Birchall (2014) defined project output in terms of the authorized scope, time limit, budget, quality, and
customer retention. This research evaluated the project's cost-effectiveness, timeliness, quality standards, and process productivity.

1.1.2 Monitoring and Evaluation Practices

M&E is a factor that has been identified as influencing project performance all over the world. According to Hubert and Mulyungi (2018), monitoring is a continuous function in public projects that entails the systematic collection of data related to specified indicators. Kissi et al. (2019) define M&E as a tool that aids project managers in increasing productivity and achieving goals. Monitoring and evaluating a project entail gathering and analysing data on a regular basis to keep track of its success. Information is collected and evaluated via M&E, which aids in tracking a project's progress (Maendo et al., 2018).

M&E, according to Kissi et al. (2019), is the systematic compilation and review of data and procedures to ascertain the degree to which objectives and milestones are being reached, as well as the analysis of any inconsistencies. M&E is one of the most important methods for influencing project efficiency and completion, according to Kusek and Rist (2014). M&E is distinct but complementary, and it is closely related to project functions (Kissi et al., 2019). Monitoring and assessment is a mechanism that uses empirical data to assist program implementers in making informed decisions about program activities, service delivery, and efficacy (Panda, Jurko, & Pandová, 2016).

The primary monitoring and assessment activities in a project have been illustrated in studies (Kabwegyere & Kiyega, 2014; Kerzner, 2015). Initial needs assessments, project design, strategic structure, M&E preparation, budgetary allocation, baseline surveys, performance assessments, and capacity building are some of the things that are
covered. Budgetary allocation, baseline surveys, performance evaluations, and capacity building are the subject of this study.

Budgetary allocation is specified by Béné, Frankenberger, and Nelson (2015) as the amount of money allotted to each expenditure line. It specifies the maximum amount of money a company can spend on a particular project, and that's a cap that can't be surpassed by the employee who's allowed to charge expenditures to a specific budget line. Nambiro (2018) studied the effect of M&E on project performance, focusing on budget allocation as an M&E dimension. The impact of project M&E procedures on project performance standards is discussed in depth in their study. Kissi et al. (2019) used budget allocation as well. In this study, Budget allocation was calculated using project evaluation costs, remittance time, distance, and benchmarking (Mwangi & Jagongo, 2019).

A baseline survey is a survey performed at the start of a project to collect information on the current state of a topic before any action can be taken (Llanto & Rosellon, 2017). Prior to project initiation, a survey of the target population is conducted to determine the current state of the situation to be resolved by the project. Kissi et al. (2019) used a baseline survey as part of their tracking and assessment in their report on the effect of project monitoring and appraisal activities on construction project performance criteria. In a report on the impact of monitoring and evaluation on project success, Phiri (2015) looked at baseline surveys as part of M&E. In this study, baseline survey was operationalized through data collection, plan design, baseline reports and time.

A performance review is a structured assessment in which a manager evaluates an employee's job performance, identifies strengths and weaknesses, offers feedback, and determines potential performance goals (Asio, 2020). Shihemi (2016) investigated the
effect of monitoring and evaluation strategies on project progress, including performance evaluation as a monitoring and evaluation dimension. This study measured performance review using regular reviews, feedback, goal setting and employee strengths & weaknesses.

Capacity building helps people and organizations gain, grow, and keep the knowledge and skills required for work (Merino & de los Ros Carmenado, 2014). As a result, individuals and businesses are willing to perform at a higher level. Phiri (2015) looked into the effect of M&E on project performance, with a particular emphasis on capacity building as an M&E metric. Sanganyi (2016) evaluated the M&E implementation in infrastructure projects, stressing the value of M&E capacity building. In this study, capacity building was measured through level of evaluators training, defined roles and responsibilities, frequency of training and existence of mission.

1.1.3 KeNHA Projects in Nairobi City County, Kenya

KeNHA is responsible for the management, development and maintenance of national roads. The Kenya Roads Act, 2007 Section 22(1) empowers KeNHA to construct, maintain, operate, improve and manage the roads under its jurisdiction. The roads that fall under KeNHA are classified as A, B and C. The KeNHA recognizes that road development is not only road construction and maintenance alone, but in the broader sense includes the management and protection of road reserves (Ministry of Transport, 2015). The KeNHA is an autonomous road agency, responsible for the management, development, rehabilitation and maintenance of international trunk roads linking centers of international importance and crossing international boundaries or terminating at international ports (class A road), national trunk roads linking internationally important centers (class B roads), and primarily roads linking
provincially important centers to each other or two higher-class roads (class C roads). Besides roads, KeNHA has 13 weighbridges, which are used to enforce the traffic regulations in the ferrying of goods across the country and the greater East African region.

Kenya Vision 2030 envisions a nation with a well-connected and integrated transportation and communication system, including highways, railways, ports, airports, waterways, and telecommunications. The Kenyan government recognizes that the efficiency of the road network will be critical in achieving Kenya Vision 2030 and the millennium development goals. Road transport is crucial in Kenya’s transportation market, accounting for more than 93 percent of all freight and passenger traffic. Kenya stands to benefit greatly from the introduction of the roads subsector investment programs and policy (Ministry of Roads, 2011).

Road infrastructure projects in Kenya, like those in many other African countries, have faced a slew of issues, including construction delays, cost overruns, demolition of residential and commercial buildings, and failed funding attempts (Maina, 2013). The cost of building the now famous and successfully completed Thika Superhighway, for example, increased from 26.44 billion to 34.45 billion (World Bank, 2014). The deadline had to be pushed back from July 2011 to July 2013, resulting in a two-year delay.

1.2 Statement of the Problem

The success of road projects is critical to any economy's growth and development. In terms of wealth creation and job prospects, road infrastructure is important to the economy (World Bank, 2018). Kenya government has taken many measures to increase
the performance of road construction projects. KENHA, KURA and KERRA were formed after the Kenya Roads Act of 2007 was passed (2007). The aim was to create a legal and institutional framework for road construction, reconstruction, and maintenance (Ministry of Transport and Infrastructure, 2019).

Despite the government’ action, road construction projects in Kenya continue to experience challenges leading to poor performance. According to the KMPG (2017) report, only 39.4 percent of road construction projects in Kenya are completed within the budgeted cost and timeline. Just 35% of the road projects completed met the desired quality requirements, according to the study. Failure of road projects, according to Wambui, Ombui, and Kagiri (2015), is due to time inefficiency, a lack of sufficient funds, and a lack of advanced working equipment. KURA report of 2017 identified several projects that were left unfinished due to client challenges, a lack of materials, a lack of funds, and a lack of project managers’ competency. Project success has been related to M&E activities (Rogito, 2015; Phiri, 2015).

Previous studies have been conducted linking M&E practices to project performance (Wanjiku, 2015; Ochenge, 2018; Muchelule, 2018; Kissi et al., 2019). However, these studies indicate various research gaps including contextual, conceptual, empirical, and methodological gaps. In addition, the researchers were unable to link M&E activities and performance of KENHA road construction projects in Nairobi County Kenya. As a result, there was a need to address the gaps by investigating the role of M&E practices in influencing the performance of KENHA road construction projects in Nairobi County, Kenya.
1.3 Objectives of the study

The study objectives are classified into general and specific objectives.

1.3.1 General Objective

The general objective of this study was to investigate the effect of M&E practices on performance of Kenya National Highway Authority Road construction projects in Nairobi City County, Kenya.

1.3.2 Specific Objectives

The specific objectives below guided the research.

i. To establish the effect of budgetary allocation on performance of KENHA road construction projects in Nairobi City County, Kenya.

ii. To determine the effect of baseline surveys on performance of KENHA road construction projects in Nairobi City County, Kenya.

iii. To establish the effect of performance reviews on performance of KENHA road construction projects in Nairobi City County, Kenya.

iv. To assess the effect of capacity building on performance of KENHA road construction projects in Nairobi City County, Kenya.

1.4 Research Questions

The study sought to answer the following questions:

i. What is the effect of budgetary allocation on performance of KENHA road construction projects in Nairobi City County, Kenya?

ii. How do baseline surveys affect the performance of KENHA road construction projects in Nairobi City County, Kenya?
iii. What is the effect of performance reviews on performance of KENHA road construction projects in Nairobi City County, Kenya?

iv. To what extent does capacity building affect the performance of KENHA road construction projects in Nairobi City County, Kenya?

1.5 Significance of the Study

The investigation may be beneficial to several stakeholders. Project managers and contractors will benefit from the study as it will boost the understanding in M&E activities that contribute to efficient infrastructure project efficiency. This will be critical in providing strategies for enhancing those traits with significant positive effects while eliminating or reducing the effects of those traits with negative impacts on project performance.

The study may also help the government and other stakeholders in policy creation process to aid in infrastructure projects governance. The study's goal is also to assist project contractors in developing road projects that meet the required standards.

Further, the findings provide empirical evidence in the field of project management. The study gathered empirical evidence to support or refute the effect of M&E activities on project success. The study also serves as a resource and sparks interest among academics, encouraging more investigation into the subject.

1.6 Scope of the Study

The study evaluated the impact of M&E practices on the performance of KENHA road construction projects in Nairobi City County, Kenya. Budgetary allocation, baseline surveys, performance reviews, and capacity building variables were tested against the
performance of road construction projects in Nairobi City County, Kenya. The study targeted population was seven (7) road construction projects undertaken by KENHA in Nairobi City County for the period 2015-2019. The study specifically targeted management employees in the ministry of Roads, Public Works and Transport in Nairobi City County and officials from KENHA.

1.7 Limitations of the study

The research encountered several challenges. The target respondents were hesitant in sharing information. To mitigate this challenge, the respondents were notified about the intent of the scholarly study, in addition to this, assurance of confidentiality and anonymity was given. Some of the participants had busy schedules, making access to information cumbersome, earlier bookings were made with these participants as well as revision of schedules. The study also took long during the data collection process due work from home policy and adherence to COVID-19 health restrictions. Research assistants were fully acquainted with the health protocols for COVID-19 as directed by the ministry of health all through the exercise.

1.8 Organization of the Study

The first chapter provided a background to the study's core concepts, including the problem statement, study goals, research concerns, study importance, and limitations. The literature review, specifically the theoretical and empirical reviews, research gaps, and conceptual context are discussed in Chapter Two. The methodology used in this study is detailed in Chapter Three. The study findings and discussions are outlined in the fourth chapter while chapter five provides the summary, conclusion, and recommendations.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section highlights some of the key concepts used in the research and pinpoints some theoretical contributions from the literature. A literature review helps in the development of understanding of the previous research that has been done relating to the objectives, aims and helps in the refinement of the ideas to which the research will be built.

The chapter also details the theories that will guide the study and a conceptual framework showing the graphic relationship of the study variables. The chapter has a summary of literature review and gaps exposed by the review that the study will seek to fill.

2.2 Theoretical Framework

Kombo and Tromp (2009) looked at a theory as a seasoned statement that aids in providing a general explanation on an issue that requires evidence or support to provide insights to some occurrences. The theoretical framework binds the main variables being studied. Theories anchoring the current study are discussed below.

2.2.1 Theory of Change

This theory arose in the 1990s as a reaction to program theory (Stein & Valters, 2012). In 1995, Carol Weiss developed the theory further and described it as “a theory of how and why an initiative works.” She argued that many projects are difficult to evaluate as they are based on poorly articulated assumptions. She proposed that in order to achieve
the envisaged outcomes, stakeholders should look at short-term outcomes that will help them achieve their specified targets (Msilà & Setlhako, 2013).

The theory of change usually yields two products: An outcome map and a list of assumptions about change (Reinholz & Andrews, 2020). An outcome map provides awareness about whether a project will be successful, as well as which interventions should be used to achieve success (Cox, 2009). This approach steers the project's course and the objectives to be met.

The theory of change roadmap is refined by monitoring and assessment, while communication aids in the achievement of envisaged objectives and the implementation of improvements. Consequently, it provides success assessments of projects (Msilà & Setlhako, 2013). If a contractor clearly outlines the project goals and outcomes the evaluator can track and evaluate the planned results and relate them to the original principle of change (Alcock, 2009). This theory applies to this study since it governs the approach to monitoring and evaluation practices especially during the design and planning phases.

2.2.2 Resource-Based View (RBV) Theory

( Wernerfelt, 1984; Barney, 1986, 1991; Peteraf, 1993). adopted RBV from a strategic point of view considering a resource as a strength that firms can use to formulate and to implement their strategies. The resources and capabilities of the firm are the main competences for formulating strategy (Grant, 1991).

Pearce (2018) perfected this principle. The Resource-Based View (RBV) is a management framework that considers resourcing to be the key to an organizations’ success. The execution of a strategy requires resources of sufficient quality and quantity
An organization’s success is anchored on its ability to create a sustainable competitive advantage (SCA) through management activities. This theory sees resources as key to superior firm performance if that resource exhibits attributes that enable the firm to gain and sustain competitive advantage. The supporters of this view argue that the organizations should look inside the company to find the resources of competitive advantage instead of looking at competitive environment for it.

Land, plant and equipment, intangible assets, and opportunities are the three sub-groups that make up resources. Stable and existing assets with a fixed long-term capability are referred to as tangible assets. Intangible assets include intellectual property, such as trademarks and patents, as well as name and industry awareness, company networks, and databases (Williams, 1992). Opportunities are also referred to as "invisible properties" or "intermediaries" because they are difficult to explain (Itami, 1987). In essence, skills include individual or group capabilities and organizational processes and interactions that coordinate all company resources (Grant, 1991). The theory is considered appropriate for this study because it informs the independent variables, particularly budget allocation, and capacity building.

2.2.3 Theory of Constraints

Goldratt was the first to propose the concept of constraint (1990). It can be used to demonstrate how managers can run organizations efficiently using systematic thinking and constraint management assumptions (Kohli & Gupta, 2010). The theory of constraint-based management philosophy focuses on change at three levels: organizational thought, organizational behavior, and organizational methodology (Gupta & Boyd, 2008). Project management is complicated by requirements and limitations in multi-party work situations (which are required for construction projects).
(Lau & Kong, 2006). Hence, constraints must be managed for effective project management.

Most ventures are difficult to handle, according to Jacob and McClelland (2001), since they are full of complexities and require three separate and conflicting commitments: H. Concept, Budget, and Content. In project management, the requirements for the three constraints (time, scope, and cost) are widely accepted indicators of project performance. The triple restriction is seen by executives as a critical requirement for the company's performance. The rationalization of these three elements learns to expand the quality and a favourable result. Each of the three constraints on the scope of the task, cost and time have an individual effect on firm performance. However, since this component has multiple connections, one must affect the other two in the long run.

This study was focused on the triple constraint theory, which states that most used monitoring and assessment practices may perform well or poorly from an organizational standpoint. In the construction industry, project delays are common, resulting in not only unquantifiable costs to the city, but also a debilitating effect on the contractor (Ondari & Gekara, 2013). Cost and quality criteria are another criterion for project success (Nwachukwu & Emoh, 2011). Therefore, this theory informs the dependent variable, project performance. It describes the steps for implementing the project such as cost, quality and time which are covered in this study.

### 2.3 Empirical Review

This section contains past studies relating to the study variables. Main arguments of these studies are brought forth as well as the emerging research gaps.
2.3.1 Budgetary Allocation and Project Performance

Oseni (2012) conducted a survey on the suitability of funding for educational institutions in Nigeria. Simple descriptive statistics were used in this study. Fund allocation was measured by scope and benchmarking. The study found that, although allocations increased, they did not meet international criteria. Therefore, internally generated revenue (IGR) must be increased to gain access to additional resources, and education should not be placed in the hands of bureaucrats or politicians who are unaware of the consequences of the quality of life of future generations. The study was however, done in Nigeria thus presenting a contextual gap.

Adong and Jagongo (2013) conducted research in Kenya on budget management as a measure of state-owned company financial efficiency. The survey descriptive design was used to gather information from state agency managers. The findings revealed that budget management and BUMN's financial performance had a significant positive relationship. The ability to predict the financial stages of an enterprise is reflected in household characteristics. Management engagement, employee morale, employee preparation, competence, and attitudes toward the budget control process are all affected by human factors in budget control. Nonetheless, the survey focused on state corporations, whereas the current study looked at road construction projects.

Opiyo (2014) conducted a study in Uriri District, Migori District, Kenya on the effect of budgets on the execution of programs in schools. A descriptive research design was used in this analysis. Researchers used a questionnaire and interview schedule as research tools. The results of this study were that budgeting skills, observation skills, appraisal skills, public procurement knowledge, project identification and decision-making skills all had a positive impact on the construction of school buildings.
However, the study concentrated on development projects in the education sector, while the current study focused on road construction projects.

A study in Malaysia by Jatarona, Yusof, Ismail and Saar (2016) established that time and money are two key aspects to every construction contract. For a predetermined amount of cash, a project worker will be needed to perform inside the predefined timeframe. Notwithstanding, when each financial backer endeavors in a development project subsequently they put away cash inside a predefined time and anticipate that the investment should reimburse itself. As such convenient consummation of the undertaking guarantees the expense caused to be the imperative project cost. Any defer prompts cost invades which raise the task cost. In government projects, the payments are delayed hence affecting the project timely completion negatively.

In another study, Mwangi and Jagongo (2019) focused on the impact of resource allocation on judicial work in Embu District, Kenya. This study was based on budget theory, agenda-based budgeting theory, basic agency budgeting theory, progressive public expenditure theory, and public administration budget theory. Budget allocation was measured in terms of project evaluation costs and translation time. The outcome indicated that allocation of fund positively impacts the functioning of the judiciary. In addition, the judiciary's clearest achievement in terms of the impact of resource allocation in meeting constitutional requirements on gender balance and greatly improving the quality-of-service delivery. However, the research indicated a theoretical gap since it was anchored on different theories to the ones used in this study.
2.3.2 Baseline Surveys and Project Performance

Phiri (2015) investigated the effect of M&E on program success: a case study from Kenya's Virtual University of Africa (AVU). Some of the objectives that were examined included, assessments of the impact of monitoring and evaluation training on project implementation and how the baseline study affect project implementation. Baseline surveys were measured for data collection, draft plans, baseline reports and timeframes. A mixed post factum research design and studies were used in this study's methodology. The findings showed that the baseline analysis had a positive impact on the AVU system's management. The research was limited to the education sector, resulting in a contextual void.

Using the example of a youth business development fund, Rogito (2015) investigated the impact of monitoring and evaluation on project execution in Marani County, Kenya. The research was carried out using a descriptive design. The aim of this research was to see how basic ISA studies influenced youth project implementation and what systems can be used to enhance youth project implementation. The baseline analysis was found to be largely absent in the study. This study investigates the impact of baseline surveys on the project performance.

In Nakuru County, Ochieng (2018) investigated the factors that influence the effectiveness of baseline surveys for donor-funded slum upgrading programs. The analysis used the descriptive technique. The method used was stratified random sampling. Stakeholder participation, project cost and effective baseline survey were significantly correlated. The study concluded that emphasis need to be placed on transparency and accountability, management must meet stakeholder expectations, effective control of baseline surveys forestalls inevitable cost escalation, budgeting
enhances planning and cost estimation. This research concentrated on slum upgrading programs in Nakuru County.

In Zambia, a study by Simwaka (2020) on influence of monitoring and evaluation on project performance. The study utilized mixed research design. The sample size of 15 respondents were sampled through judgmental sampling techniques. However, the study findings revealed that baselines surveys provide the basis for subsequent assessment of how efficiently the activity is being implemented and the eventual results achieved.

A study by Ng’etich (2020) on influence of monitoring and evaluation on the performance of projects in parastatals in Kenya. Descriptive research design was adopted. The study utilized Yamane formula to arrive at a sample size of 98 respondents and purposeful sampling was used to sample 10 respondents from the university administration. This study used primary data collected via a questionnaire and secondary data collected via published reports and other documents. From the findings, it was established that a baseline survey serves as a benchmark for all projects. The study concluded that baseline surveys should be conducted within scope while effective control of cost and technical performance should be put into consideration.

2.3.3 Performance Reviews and Project Performance

Liu and Yetton (2007) conducted a survey on the conditional impact of project review and project management office location on project implementation. The results showed that the effects of using a project management office and conducting a project review on project implementation depend on task uncertainty. Construction companies improve their project implementation by conducting project reviews to provide
feedback on the project team's implementation so that they can adjust their project
management strategies in a timely manner. Even so, the survey was carried out using a
desktop research design, while the current research employed descriptive and
explanatory research projects.

Shihemi (2016) used the University of Nairobi as a case study to examine the impact
of monitoring and assessment tools on the implementation of construction and growth
projects in Kenyan public universities. The study used descriptive research and
employed targeted sampling. The study discovered that the University of Nairobi had a
budget for control and evaluation of construction projects. It was established that
baseline study help understands project expectations and greatly increase the
effectiveness of construction and construction projects at the University of Nairobi. The
study also concluded that performance reviews improved project implementation. The
study focused on building and construction projects at Kenyan universities and thus
points to a contextual gap. The current study looked at road construction projects.

In their project performance review, Nalewaik and Mills (2016) investigated the
importance of audit, oversight, and enforcement for project progress. The study was
based on past literature and thus applied the desktop research design. The study
indicated that evaluation of projects efficiently led to project success. In addition,
stakeholders’ confidence led to timely delivery of the projects. The success of the
project was also attributed to the professional cooperation and competency of all parties
involved. The analysis utilized a desktop research design thereby presenting a
methodological gap.
A study by Poovitha, Ambika and Lavanya (2018) established that Project Performance Review focuses on evaluating projects efficiently and in context, identifying important improvement opportunities and leading project and organizational management practices. It advises how these can be put in place to give stakeholders confidence in the control and delivery of their projects without waste.

A study by Oyewobi, Jimoh, Suleiman and John (2019) on post-project reviews in construction. The findings established that increased stakeholder awareness of expenditures, conservatism, risk awareness, demands for transparency and accountability, and a greater focus on controls and obtaining value for money mean that stakeholders more often are turning to audits and reviews as a mechanism for control, risk management, and trustworthy reporting of project and organizational status.

2.3.4 Capacity Building and Project Performance

Wanyama and Mutsotso (2010) investigated the connection between capacity building and employee productivity, as well as the performance of Kenya's commercial banks. The research builds on previous research. The findings revealed that issues such as inadequate management and the lack of experience, expertise, and knowledge required by employees can be addressed by increasing employee productivity to increase bank efficiency. Furthermore, banks in Kenya, especially in Kakamega, had poor service, organizational inefficiency; poor public relations, customer dissatisfaction, and some have decreased profitability. Employee skills had a positive impact on organizational success, according to the study's findings. However, the dependent variable was employee productivity, while the current study focuses on project performance.
Muthoni (2013) investigated the financial performance and growth of women-owned SMEs in the Gikomba market in Nairobi City County. This analysis followed a descriptive research technique. The study found that most entrepreneurial women got empowered to run businesses through various empowerment forums that they attended. The research also showed that the gender awareness forums that the women attended influenced performance of their businesses in addition to building positive attitudes in taking up male dominated roles in their workplaces. The study presents a conceptual gap as it focused on financial performance as the dependent variable.

Merino and de los Rios Carmenado (2014) conducted a study on capacity building in development projects. This study was built on previous literature. According to the research, different forms of development projects are mainly aimed at alleviating poverty and enhancing local people's livelihoods. Focusing on organizations and building on their capacities to boost their living conditions or attempting to create a new organization to work on joint projects, is one of the most widely used techniques. These organizations' social and human capital are two essential components that can influence the performance of their actions. Both can be considered part of a local organization's social capability. This capability can be increased by capacity building programs as part of development projects. Capacity building was measured in terms of assessor training levels, assigned roles and responsibilities, training frequency, and mission graduation. Even so, the analysis used a desktop survey technique, while this research accepts both descriptive and explanatory research projects.

Brooks and Urmi (2014) conducted research in the Philippines on the importance of individual capacity building for successful solar power program implementation. This was a cross-sectional research project. According to the report, project failure is often
caused by inadequate maintenance, violence, poor implementation, and a lack of understanding from local device owners, managers, or technicians due to a lack of sufficient personal technical training and adequate social training activities. Furthermore, the findings of the study showed that adequate training of local consumers and technicians is a significant factor in the effective implementation of PV systems in rural areas. However, for training to be effective, everyone must agree on what the desired behaviour is and how to quantify it. The most basic prerequisite for effective training is that it reaches the appropriate people at the appropriate time and with the appropriate material. However, this study presents a contextual gap as it focuses on solar power projects, whereas the current study focuses on road projects.

A study by Ouma (2016) on the influence of capacity building programs on project performance in non-governmental organizations with a special interest on the Danish Refugee Council. The study used a descriptive survey design. The study used stratified sampling, simple random sampling and purposive sampling to collect data from target sample. The study findings also established that project performance is influenced by the curriculum content of a capacity building program.

2.4 Summary of Literature Reviewed and Research Gap.

Table 2.1: Summary of Research Gaps

<table>
<thead>
<tr>
<th>Author</th>
<th>Title of the Study</th>
<th>Research Finding</th>
<th>Research Methodology</th>
<th>Research Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liu and Yetton (2007)</td>
<td>The effects of conducting project reviews and developing project management offices on project</td>
<td>The findings show that the effects of deploying PMOs and performing project reviews on</td>
<td>Desktop research design</td>
<td>The study used a desktop research design presenting a methodological gap.</td>
</tr>
<tr>
<td>Authors</td>
<td>Research Question</td>
<td>Findings</td>
<td>Study Design</td>
<td>Contextual/Conceptual Gap</td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>---------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Wanyama and Mutsotsuo (2010)</td>
<td>Relationship between capacity building and employee productivity on performance of commercial banks in Kenya.</td>
<td>Findings indicated that equipping employees with necessary skills can enhance productivity to improve performance of the banks</td>
<td>Descriptive research design</td>
<td>The dependent variable was employee productivity thus showing a conceptual gap.</td>
</tr>
<tr>
<td>Oseni (2012)</td>
<td>Adequacy of budgetary allocation to educational institutions in Nigeria</td>
<td>The study found out that though there were increases in budgetary allocations, they fall short of international benchmarks.</td>
<td>Descriptive research design</td>
<td>The study was done in Nigeria presenting a contextual gap.</td>
</tr>
<tr>
<td>Adong and Jagongo (2013)</td>
<td>Budgetary control as a measure of financial performance of state corporations in Kenya.</td>
<td>A positive significant relationship exists between budgetary control and financial performance of state corporation</td>
<td>Descriptive research design</td>
<td>The study focused on state corporations thus presenting a contextual gap.</td>
</tr>
<tr>
<td>Muthoni (2013)</td>
<td>Influence of capacity building on financial performance and growth of women owned SMEs in Gikomba market.</td>
<td>The study found that networking skills development strategy influenced performance and growth of women</td>
<td>Descriptive research design</td>
<td>The study presented a conceptual gap since it focused on financial performance as dependent variable.</td>
</tr>
<tr>
<td>Study</td>
<td>Topic</td>
<td>Findings</td>
<td>Methodology</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Brooks and Urmee (2014)</td>
<td>Importance of individual capacity building for successful solar program implementation: A case study in the Philippines.</td>
<td>Lack of adequate personal technical training has often resulted in project failures.</td>
<td>Cross sectional research design</td>
<td></td>
</tr>
<tr>
<td>Merino and de los Ríos Carmenado (2014)</td>
<td>Capacity building in development projects</td>
<td>According to the report, development projects of various types are primarily intended to alleviate poverty and improve livelihoods of local people</td>
<td>Desktop research design</td>
<td></td>
</tr>
<tr>
<td>Opiyo (2014)</td>
<td>Budgeting’s effect on the implementation of development plans in Kenya’s public secondary in Uriri, Migori County.</td>
<td>The study found that budgeting had a significant effect on the implementation of development plans.</td>
<td>Descriptive research design</td>
<td></td>
</tr>
<tr>
<td>Alqahtani, Chinyio, Mushatat and Oloke (2015)</td>
<td>Factors affecting performance and outputs of projects.</td>
<td>Competencies and skills, capability, self-sufficiency, and leadership style were described as affecting aspects of the project manager.</td>
<td>Desktop research</td>
<td></td>
</tr>
<tr>
<td>Rogito (2015)</td>
<td>Assessing the impact of Monitoring and Evaluation on</td>
<td>The study found out that baseline surveys are to be conducted.</td>
<td>Descriptive research design</td>
<td></td>
</tr>
<tr>
<td>Author(s)</td>
<td>Title</td>
<td>Methodology</td>
<td>Findings</td>
<td>Contextual Gap</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------------------------------------------------------</td>
<td>------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Gitau (2015)</td>
<td>In Rwanda the extent of risk management activities during the planning process on project cost and schedule efficiency.</td>
<td>The findings indicated that risk management practices at planning stage influenced project performance.</td>
<td>The study was conducted in Rwanda presenting a contextual gap.</td>
<td></td>
</tr>
<tr>
<td>Ngachó and Das (2015)</td>
<td>Performance evaluation framework of construction projects.</td>
<td>The study found that there was a significant relationship between critical success factors and overall project performance.</td>
<td>The study used desktop research thus presenting a methodological gap.</td>
<td></td>
</tr>
<tr>
<td>Haq, Liang, Gu and Ma  (2016)</td>
<td>Effects of project quality, project risk and project governance on project performance.</td>
<td>Project leadership have positive significant impact on project performance</td>
<td>The study presented a contextual gap as it was done in Pakistan.</td>
<td></td>
</tr>
<tr>
<td>Nalewaik and Mills (2016)</td>
<td>Project performance review: capturing the value of audit, oversight, and efficiency led</td>
<td>The study indicated that evaluation of projects efficiently led</td>
<td>The study used desktop research thus presenting a methodological gap.</td>
<td></td>
</tr>
<tr>
<td>Author(s)</td>
<td>Title</td>
<td>Methodology</td>
<td>Conclusion</td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------------------------------------------------------</td>
<td>-------------</td>
<td>---------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Shihemi 2016</td>
<td>Impact of monitoring and assessment tools on building and construction project success in Kenyan public universities.</td>
<td>Baseline surveys aid in the comprehension of project expectations, and they improve building and construction project efficiency.</td>
<td>Descriptive research design. The study focused on building and construction activities in Kenyan Universities thus presenting a contextual gap.</td>
<td></td>
</tr>
<tr>
<td>Ochieng 2018</td>
<td>Determinants of effective baseline survey for donor funded slum upgrading projects in Nakuru county</td>
<td>Stakeholder participation, project cost and effective baseline survey were significantly correlated</td>
<td>Descriptive research design. The study focused on slum upgrading projects in Nakuru County thus presenting a contextual gap.</td>
<td></td>
</tr>
<tr>
<td>Mwangi and Jagongo 2019</td>
<td>Effect of budgetary allocation on performance of the judiciary department of Embu County, Kenya</td>
<td>The study established that budgetary allocation affects the performance of judiciary positively</td>
<td>Descriptive research design. The study was informed by the Budget theory, Agenda based theory of budgeting, Principle agent theory on budgeting, Progressive theory and budget theory thus presenting a theoretical gap.</td>
<td></td>
</tr>
<tr>
<td>Njeri and Were 2019</td>
<td>Determinants of project performance in Kenya.</td>
<td>The study found that top management support influence on project performance.</td>
<td>Descriptive research. The study used a descriptive research design presenting a methodological gap.</td>
<td></td>
</tr>
</tbody>
</table>
2.5 Conceptual Framework

Conceptual Framework (CF) is an instrument of research geared towards enabling a researcher to gain knowledge and conceptualize the variables under study (Lekaram, 2014). In this study, M&E practices constitute the independent variables while performances of infrastructure projects are the independent variables.
Figure 2.1: Conceptual Framework

Source: Author (2021)
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction
The chapter explores the methodology utilized in the research project. As such, it covers various aspects that include the research design, target population, the sample size and sampling techniques as well. Besides, it also comprises of the data collection instrument, validity and reliability of the study, data collection procedure and data analysis methods.

3.2 Research Design
This study used the descriptive and explanatory research designs. The descriptive design choice of this study is justified because it helps to accurately explain the attributes of the variables under study. In this study the research variables were described in terms of percentage, frequency, means, and standard deviation. On the other hand, an explanatory research design is appropriate if the aim is to determine the connection between constructs. The current survey intended to determine the connection between the explanatory and explained constructs.

3.3 Target Population
The study targeted all ongoing road construction projects currently within Nairobi City County. There were forty (40) active road construction projects under KENHA within Nairobi City County between 2017 and 2021. The subjects of study were drawn from these 40 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 (2017-2021) as they would have relevant information required to make this study a success. A total of 400 management employees and 7 KENHA directors were targeted.

### Table 3.1: Target Population

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management employees (Ministry of Roads, Public Works, and Transport)</td>
<td>400</td>
</tr>
<tr>
<td>KENHA officials</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>418</td>
</tr>
</tbody>
</table>

Source: Nairobi City County (2019)

### 3.4 Sampling techniques and Sample size

Sampling techniques provide a range of methods that facilitate in reducing the amount of data that needs to be collected by considering only data from a sub-group rather than all possible cases or elements. According to Mugenda and Mugenda, (2003), a sample of at least 10% to 30% of the entire population is a valid sample size for a considerably small size to draw conclusions for a given study. The study used stratified simple random sampling and census sampling. Stratified simple random sampling was used to select the employees where the participants are given equal chances in being selected. The research utilized a census sampling to select the number of KeNHA officials that would be involved in this study. This approach was suitable since the targeted population is well defined, small, and manageable. Hence, 100 employees and 7 KeNHA officials form the sample size.
3.4 Data Collection Instrument

Data collection is the process of collecting information from respondents (Sutton & Austin, 2015). Data was obtained using questionnaires with open and closed ended questions and classified into two parts. The first part asks questions about demographic information on target groups. The second part contains questions about the variables studied. Questions are asked on a 5 Likert scale. The rating scale includes: 1 - strongly disagree, 2 - disagree, 3 - neutral, 4 - agree and 5 - strongly agree. All means are then rounded off to zero decimal place for final mean score of each objective. Questionnaire options are easy to administer and inexpensive (Kombo & Tromp, 2006).

3.5 Pilot Study

A pilot study was carried out prior to the actual data collection to establish the face validity and content validity of the main research tool, the questionnaire. The pilot study was done in Kiambu County where 10 management employees from the ministry of Roads, Public Works and Transport and 2 KENHA officials were involved in construction of 2 road projects. The pilot study aimed at finding out whether the questions were understood by the respondents, questionnaire was arranged in a sequence that was logical and easy to follow and whether the questions were relevant.

3.5.1 Validity of the Research Instrument

To ensure the validity of its contents, the questionnaire was checked by the supervisor and adjusted according to the recommendations (Kothari, 2004). All metrics were carefully constructed based on current relevant information to achieve constructive validity. Only relevant questions measuring certain indicators of the variables under
investigation were included in the questionnaire. Further a validity test of variance (AVE) was used to ascertain instrument validity.

The validity of study instrument sought to establish whether the instrument was collecting the correct data. Using the content validity constructs, Average Variance Extracted (AVE) obtained a measurement of $\geq .5$ indicated in Table 3.2. The results confirmed instrument validity hence readiness to carry out field visit.

**Table 3.2: Instrument Validity Test**

<table>
<thead>
<tr>
<th>Study variables</th>
<th>No. of items</th>
<th>Average Variance Extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Performance</td>
<td>5</td>
<td>0.555</td>
</tr>
<tr>
<td>Budget Allocation</td>
<td>5</td>
<td>0.720</td>
</tr>
<tr>
<td>Baseline Surveys</td>
<td>5</td>
<td>0.823</td>
</tr>
<tr>
<td>Performance Reviews</td>
<td>5</td>
<td>0.634</td>
</tr>
<tr>
<td>Capacity Building</td>
<td>5</td>
<td>0.728</td>
</tr>
</tbody>
</table>

*Source: Survey (2021)*
3.5.2 Reliability of the Research Instrument

The degree to which the experiments are internally consistent and provide a consistent result when checked and retested is referred to as reliability (Orodho, 2009). The Cronbach alpha coefficient was used to assess the instrument's reliability in this analysis (Cronbach, 1951). The alpha coefficient is a number that ranges from 0 to 1. All elements with a value less than 0.7 are considered weak and are discarded. As indicated in Table 3.3, the aim of reliability was to establish that all sections of the study instrument could be used reliably from one point to another and still collect the data required. The key test was to achieve a Cronbach alfa coefficient of greater than 0.6. The results of the pilot study thus all indicated that the reliability figures were well above the threshold of 0.6 making the instrument suitable for field exercise.

Table 3.3: Reliability of the Study Instrument

<table>
<thead>
<tr>
<th>Study Variables</th>
<th>No. of items</th>
<th>Cronbach's alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Performance</td>
<td>5</td>
<td>0.674</td>
</tr>
<tr>
<td>Budget Allocation</td>
<td>5</td>
<td>0.793</td>
</tr>
<tr>
<td>Baseline Surveys</td>
<td>5</td>
<td>0.648</td>
</tr>
<tr>
<td>Performance Reviews</td>
<td>5</td>
<td>0.712</td>
</tr>
<tr>
<td>Capacity Building</td>
<td>5</td>
<td>0.795</td>
</tr>
</tbody>
</table>

Source: Survey (2021)
3.6 Data Collection Procedure

To collect data and make it usable for research, the data collection process is crucial (Groves, 2009). The University of Kenyatta submitted a cover letter certifying data collection. A permit was obtained from NACOSTI. The questionnaire was self-administered to the target group. The drop and pick later technique was used to make sure that the target group had enough time to go through the questionnaire, understand the questions and provide the responses. The researcher also engaged research assistants to help with the distribution and follow up of the questionnaires. The research assistants underwent training on data collection and what was expected of them.

3.7 Data Analysis and Presentation

The data collected was cleaned and coded. This was to enhance basic statistical analysis. The data analysis involved quantitative methods (numerical and descriptive). Quantitative data was analyzed using descriptive and inferential statistics. Data was analyzed with the help of electronic spreadsheet Statistical Package for Social Sciences (SPSS Version 21.0.) which has analysis tools. The descriptive statistics were utilized to analyze the quantitative data (mean, standard deviation, and percentages). They were displayed using tables, graphs, and pie charts. Regression analysis was carried out to determine inferential statistics. Diagnostic tests including multicollinearity, normality and homoscedasticity were run before carrying out the regression and correlation analysis for study model.
The model below was applied:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \]

Where,

\( Y \) = Performance of road construction projects

\( X_1 \) = Budget allocation

\( X_2 \) = Baseline surveys

\( X_3 \) = Performance reviews

\( X_4 \) = Capacity building

\( \varepsilon \) = Error term

The regression coefficients are represented by \( \beta_0, \beta_1, \beta_2 \ldots \beta_4 \). \( X_1, X_2, \ldots, X_4 \) are the independent variables and \( \varepsilon \) provides for the random variation in \( Y \) that \( X \) variables are not able to explain.

### 3.8 Ethical Considerations

Ethical considerations are standards that researchers must consider in all experimental methods at all stages of the study process (Fellows & Liu, 2015). To conduct research, the researcher requested permission from the university. By handling knowledge obtained from respondents with the utmost confidentiality, the researcher upheld high ethical standards. In addition, the researcher explained the study’s intent to participants and ensures their anonymity.
CHAPTER FOUR
RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter set about exploring the findings of the analysed data, presentation, and interpretation that would later be discussed with respect to similar studies done by other scholars. Specifically, the results for response rate, pilot study and other variable characteristics are reviewed for interpretation and discussion.

4.2 Field Rate of Response

The field visit aimed to collect data from 107 respondents comprising 7 KENHA managers and 100 officers from the ministry of Roads, Public Works and Transport in Nairobi City County. This data is indicated in Table 4.1 showing that all managers at the 7 various road construction sites responded and 82 management officers from the ministry responded. The results at 83 percent reflect what other scholars including Muchelule (2018), who established that such a social study done openly is quite adequate for analysis with 60 percent responses. Similarly, Umugwaneza and Kule (2016) used a response rate at 72 percent for a social study on sustainability.

Table 4.1: Response Rate

<table>
<thead>
<tr>
<th>Categories</th>
<th>Expected</th>
<th>Actual</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management employees (Ministry of Roads, Public Works, and Transport)</td>
<td>100</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>KENHA officials</td>
<td>7</td>
<td>7</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>107</strong></td>
<td><strong>89</strong></td>
<td><strong>83</strong></td>
</tr>
</tbody>
</table>

Source: Field data 2021
4.3 Demographic Characteristics

To give credence to the field study, it is logical in all social studies to establish demographic data for the field respondents. This study specifically used three variables including age, gender, and level of education as the key demographics.

4.4.1 Gender

This survey intended at determining how the respondents were distributed. Figure 4.1 shows the results.

![Gender Distribution Chart]

**Figure 4.1: Gender of the Respondents**

From the results, there was a higher number of males represented by 61 (73.5%) while females were 22 (26.5%). This implies that majority of the people working in the road construction sector are males. Females were fewer than male because construction of road infrastructure projects is very tedious and requires a lot of energy.

4.4.2 Educational level of respondents

The respondents were requested to indicate their educational level. The findings were presented in Table 4.2.
Table 4.2: Level of Education of Respondents

<table>
<thead>
<tr>
<th>Education category</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>College</td>
<td>5</td>
<td>6.0</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>49</td>
<td>59.0</td>
</tr>
<tr>
<td>Masters</td>
<td>26</td>
<td>31.3</td>
</tr>
<tr>
<td>PhD</td>
<td>3</td>
<td>3.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>83</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Field Data (2021)

From the findings, it was established that majority of the respondents which is 59% having 49 peoples had at least an undergraduate qualification with the least 3 at the highest level of PhD scholars. This is reflective of most institutions not just in the city but for the rest of the country with majority of government officers having to get minimum of undergraduate qualification to join the government institutions or public service

4.4.3 Age groups

The respondents were inquired to indicate their age category. The findings were presented in Table 4.3.
Table 4.3: Distribution of respondents by age

<table>
<thead>
<tr>
<th>Age</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 25 years</td>
<td>3</td>
<td>3.7%</td>
</tr>
<tr>
<td>26 – 35 years</td>
<td>23</td>
<td>28.4%</td>
</tr>
<tr>
<td>36 – 45 years</td>
<td>28</td>
<td>34.6%</td>
</tr>
<tr>
<td>46 – 55 years</td>
<td>20</td>
<td>24.7%</td>
</tr>
<tr>
<td>Above 55 years</td>
<td>7</td>
<td>8.6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>81</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Field Data (2021)

The findings presented in Table 4.3 established that majority of the respondents were fairly distributed in three age brackets of 36 to 45 years with 28 found in this bracket and this reflects the normal public service age for managers. The least age group was below 25 years with 3 respondents giving to 3.7% and this is a true reflection of the public service in which most officers of management level join the civil service at over 25 years after the average college age of 25 years. Similarly, the higher age group of over 55 years consisting of 8.6% had few respondents with only 7 respondents.

4.5 Descriptive Statistics

The study instrument was based on a social scaling measure of Likert type ranging from 1 to 5 where the constructs matched as follows: ‘1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree’. The means were rounded off to the nearest whole number with zero decimal places. Results were subdivided into specific objectives in the next subsection.
4.5.1 Road Construction Project Performance

Results of the dependent objective seeking to establish the performance of road projects are indicated in Table 4.4 with 5 constructs used to attain findings. The aggregate mean of construction project performance (PP1, PP2, PP3 and PP4) was 3.7 which when rounded off to zero decimal place, was 4. This result shows the respondents were overall satisfied with the performance of the road construction projects.

A study by Nalewaik and Mills (2016) also indicates that when reviews or audits are involved, most participants view performance of projects positively. A study by Ochieng (2018) also showed a leaning towards positive performance of road projects by the government, when public officers were interviewed. While conducting the construction companies on public road performances, Muzondo and McCutcheon (2018) established that majority of public servants were reluctant to give the correct nature of performance in which they were involved citing victimization as a key factor.
Table 4.4: Construction Project Performance

<table>
<thead>
<tr>
<th>CODE</th>
<th>Attribute of Performance</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP1</td>
<td>There is timely completion of road projects</td>
<td>89</td>
<td>3.5</td>
<td>0.12</td>
</tr>
<tr>
<td>PP2</td>
<td>The road projects completed are of quality standards</td>
<td>89</td>
<td>4.4</td>
<td>0.14</td>
</tr>
<tr>
<td>PP3</td>
<td>There is cost effectiveness in undertaking the road projects.</td>
<td>89</td>
<td>3.4</td>
<td>0.22</td>
</tr>
<tr>
<td>PP4</td>
<td>The efficient process involved in the carrying out of the road projects is.</td>
<td>89</td>
<td>4.1</td>
<td>0.09</td>
</tr>
<tr>
<td>PP5</td>
<td>The general level of satisfaction with the road projects is high.</td>
<td>89</td>
<td>3.1</td>
<td>0.13</td>
</tr>
</tbody>
</table>

**Aggregate Score**

<table>
<thead>
<tr>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>89</td>
<td>3.7</td>
<td>0.14</td>
</tr>
</tbody>
</table>

Source: *Field data, 2021*

**4.5.2 Budget Allocation**

The first objective sought to establish the effect of budget allocation on the performance of KENHA road construction projects in Nairobi City County with constructs (BA1, BA2, BA3, BA4 and BA5) ranging from 2.9 to 4 and an aggregate mean score of 3.5 which when rounded off becomes 4 as shown in Table 4.5. This was an indication that the respondents agreed that budget allocation was key to the performance of road construction. The standard deviation of the constructs was <1 indicating that the results were suitable for further review.
Results and findings of the study are in line with other scholars who have previously carried out similar studies. This includes the study by Gitau (2015) who observed that the road construction projects performed based on the positive allocations accorded to each. Again, it was established that timely allocation of funds to all stages of projects was paramount in the success of projects both for road construction and infrastructures undertaken by governments. Other scholars who found positive effect of budget allocation on road constructions were Kissi et al (2019) in Ghana and as well as Asio (2020) in Italy. On the contrary, other scholars have found contrary results in which budget allocation plays a negative role especially through corruption since funds allocated are overspent without quality road construction. This was a concluding result found by both Alqahtani et al (2015) and Fonbeyin (2020).
4.5.3 Baseline Surveys

The study also sought in the second objective to establish the effect of baseline surveys on the construction projects by KENHA in Nairobi City County. This was initially carried out through results indicated in Table 4.6. The mean of baseline survey
constructs (BS1, BS2, BS3, BS4 and BS5) had aggregate mean scores ranging from 3.3 to 4.1 when rounded off to zero decimal place, was 4. The results indicate that respondents supported the baseline surveys and that they were seen to add value to the overall performance of the completed road construction. The standard deviation of the constructs was below 1 and this is acceptable by statistical measures. Baseline surveys were therefore a positive factor in performance of road construction.

From the current results showing, the study matches with other scholarly works by among others Haq et al (2016) and Lekaram (2014). Other scholars who demonstrated that baseline surveys were critical in establishing good road construction performance include that of Lee et al (2018) and Maina (2013). On the contrary, there are scholars who clearly established that baseline surveys were not strong on the performance of road construction projects. Both Muchelule (2018) and previously Muthoni (2013) have established that baseline surveys had a mild role in the performance of government projects in which stakeholders get a chance to participate in the providing of ideas for the agreeable construction environment.
### Table 4.6: The Baseline Surveys

<table>
<thead>
<tr>
<th>CODE</th>
<th>Attribute of Baseline Surveys</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS1</td>
<td>Baseline survey is conducted before commencement of the project</td>
<td>89</td>
<td>4.1</td>
<td>0.26</td>
</tr>
<tr>
<td>BS2</td>
<td>The project team designs the plan for performing the baseline survey</td>
<td>89</td>
<td>3.7</td>
<td>0.45</td>
</tr>
<tr>
<td>BS3</td>
<td>The baseline survey is done in accordance with the designed plan</td>
<td>89</td>
<td>3.3</td>
<td>0.29</td>
</tr>
<tr>
<td>BS4</td>
<td>There is adequate collection and capturing of data on project demands</td>
<td>89</td>
<td>3.6</td>
<td>0.60</td>
</tr>
<tr>
<td>BS5</td>
<td>The baseline reports are formulated, and the results are shared among stakeholders</td>
<td>89</td>
<td>3.7</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td>Aggregate score</td>
<td></td>
<td>3.7</td>
<td>0.40</td>
</tr>
</tbody>
</table>

Source: *Field data, 2021*

#### 4.5.4 Performance Reviews

In the third objective, the study sought to establish the effect of performance reviews on performance of road construction projects under the KENHA umbrella in the city county of Nairobi. The results are dully presented in Table 4.7 listing all the 5 constructs of the variable on performance reviews. From the field constructs for performance reviews (PR1, PR2, PR3, PR4 and PR5), the aggregate mean was established to range from 3.5 to 3.8 and this was rounded off to 4. This was a fair reflection of the

Scholars have carried out similar studies in the project performance at public service and found contrary results. Ngacho and Das (2015) studying construction projects by public institutions established that performance reviews were less critical in maintenance of such projects implying that they had no big effect on performance if well calculated to include all aspects of project performance. Other scholars including Ondari and Gekara (2013) in studying road construction projects established that the performance reviews were part and parcel of a successful road project and require careful inculcation of all staff in the project.
Table 4.7: Performance Reviews and Project Performance

<table>
<thead>
<tr>
<th>CODE</th>
<th>Performance Review Constructs</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PR1</td>
<td>There is regular review of employees’ work performance.</td>
<td>89</td>
<td>3.8</td>
<td>0.26</td>
</tr>
<tr>
<td>PR2</td>
<td>Employees’ strengths are identified through performance reviews.</td>
<td>89</td>
<td>3.8</td>
<td>0.47</td>
</tr>
<tr>
<td>PR3</td>
<td>Employees’ weaknesses are identified through performance reviews.</td>
<td>89</td>
<td>3.5</td>
<td>0.33</td>
</tr>
<tr>
<td>PR4</td>
<td>Employees receive adequate feedback after performance reviews</td>
<td>89</td>
<td>3.5</td>
<td>0.11</td>
</tr>
<tr>
<td>PR5</td>
<td>Through reviews, the management sets goals for future performance.</td>
<td>89</td>
<td>3.8</td>
<td>0.69</td>
</tr>
</tbody>
</table>

Aggregate score 3.7 0.37

Source: Field data, 2021

4.5.5 Capacity Building

Additionally, the study had fourth objective of establishing the effect of capacity building on the road construction project performance in the city county of Nairobi as results indicate in Table 4.8 with five constructs (CB1, CB2, CB3, CB4 and CB5).

The results indicate that the mean of capacity building constructs ranged from 2.9 to 3.8. This aggregate mean when rounded off to zero decimal place, was 4. This was
therefore an indication that the respondents agreed that capacity building had a positive effect on the project performance at road construction projects. The result was also backed by the standard deviation of under 1 indicating that the means were within acceptable limits to receive further statistical tests or reviews.

The study results were in line with studies of other scholars including Oseni (2012) who established that projects in Pakistan once allocated budgetary funds had high chances of building capacity that played a positive role on the performance. Another study by Panda et al (2016) seeking to establish how monitoring and evaluation enhanced project performance concluded that the function enhanced capacity building which had a positive effect on project performance. On the contrary, there are studies that have produced results that show mild effect through capacity building for example, Rogito (2015) in seeking to establish the Kenya Youth Fund project sustainability found that capacity building process delayed the take-off of projects resulting in poor performance. Another scholar, Tesfaye (2019) established that during monitoring and evaluation, time wasted on capacity building ends up eating into the life cycle of projects and recommended the pursuit of highly qualified personnel that do not require further capacity building. Tesfaye argues that projects require experience and not learners in the field for efficient performance.
Table 4.8: Capacity Building and Project Performance

<table>
<thead>
<tr>
<th>CODE</th>
<th>Performance Constructs</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB1</td>
<td>The number of M&amp;E staffing in the projects is sufficiently provided.</td>
<td>89</td>
<td>3.5</td>
<td>0.45</td>
</tr>
<tr>
<td>CB2</td>
<td>There is regular training of evaluators</td>
<td>89</td>
<td>3.7</td>
<td>0.36</td>
</tr>
<tr>
<td>CB3</td>
<td>There is continuous training and development of staff</td>
<td>89</td>
<td>3.6</td>
<td>0.24</td>
</tr>
<tr>
<td>CB4</td>
<td>The roles and responsibilities are clearly defined.</td>
<td>89</td>
<td>2.9</td>
<td>0.19</td>
</tr>
<tr>
<td>CB5</td>
<td>There is well developed mission on capacity building.</td>
<td>89</td>
<td>3.8</td>
<td>0.68</td>
</tr>
<tr>
<td></td>
<td>Aggregate score</td>
<td></td>
<td>3.5</td>
<td>0.38</td>
</tr>
</tbody>
</table>

Source: Field data, 2021

4.6 Result of Diagnostic Tests

To carry out further analysis beyond the descriptive statistics, it was important to have diagnostic tests that would establish the suitability of data collected to run inferential statistics. The standard test of multicollinearity, normality and homoscedasticity were thus carried out for this study.

4.6.1 Multicollinearity Tests

In the first test, the analysis sought to establish multicollinearity of road construction projects and performance through the Variance Inflation Factor (VIF) approach. In this test, the key objective was to find out values ranging from 1 to 10.
Table 4.1: Multicollinearity Test

<table>
<thead>
<tr>
<th>Model</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Budgetary allocation</td>
<td>.635</td>
</tr>
<tr>
<td></td>
<td>Baseline surveys</td>
<td>.678</td>
</tr>
<tr>
<td></td>
<td>Performance reviews</td>
<td>.690</td>
</tr>
<tr>
<td></td>
<td>Capacity building</td>
<td>.597</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Project Performance

The tolerance values for the independent variables; budgetary allocation, baseline surveys, performance reviews and capacity building were all high, suggesting that the beta values of the regression equation for the independent variables with low standard error expressions would remain constant. The tolerance is utilized as portion of the denominator when determining the confidence limits of the fractional regression coefficient. Collinearity is defined by Porter and Gujarat (2009) as independent constructions of VIF out of 10 as a general rule. The independent variables were not collinear in this case.

4.6.2 Normality Test

The next test carried out involved normality in which the aim was to establish that the value of significance was not strong indicating that normality was achieved. This was achieved through the One-sample Kolmogorov-Smirnov Test aiming to determine the significance level of the data to ascertain normality thus taking out any outliers or abnormal data. From the results in Table 4.10, the variables of road construction projects compared against the performance by KENHA had a significant value of 0.032 and 0.021 respectively (p<0.05) implying that there was normal distribution in the constructs of both road construction variables and the dependent variable. This was
clear indication that the variables of the data collected had a normal distribution with KMO figures of 0.031 and 0.087 being positive and large enough as a sign of normal distribution. This data was therefore fit for further inferential statistical analysis.

Table 4.10: Normality Test Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>Df</td>
</tr>
<tr>
<td>Project Performance</td>
<td>.032</td>
<td>85</td>
</tr>
<tr>
<td>Budget allocation</td>
<td>.087</td>
<td>85</td>
</tr>
<tr>
<td>Baseline surveys</td>
<td>.057</td>
<td>85</td>
</tr>
<tr>
<td>Performance Reviews</td>
<td>.044</td>
<td>85</td>
</tr>
<tr>
<td>Capacity building</td>
<td>.031</td>
<td>85</td>
</tr>
</tbody>
</table>

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

4.6.3 Homoscedasticity Test

The final test of diagnostic was done to establish the similarity of variances among the variables. Specifically, an approach of Levene Statistic was used seeking to establish if the statistic was significant enough to indicate similarities. From the results indicated in Table 4.11, the value of the Levene Statistic, $F (3, 86) = 2.014$, $p > .05$ was not significant. This implies the data was indeed homogenous without homoscedasticity hence fit for inferential statistics.
Table 4.11: Homoscedasticity Test on Road construction and Performance

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.014&lt;sup&gt;a&lt;/sup&gt;</td>
<td>3</td>
<td>86</td>
<td>.276</td>
</tr>
</tbody>
</table>

a. Groups with only one case are ignored in computing the test of homogeneity of variance for Project performance.

4.7 Inferential Statistics

Having done the diagnostic tests to establish the suitability of data collected from the field for inferential statistics, the tests in section 4.6 ascertained that the data was fit for inferential analysis which is a step of strengthening the findings under descriptive statistics. The findings of model summary, ANOVA and Regression Coefficients are indicated in subsequent sections below.

4.7.1 Model summary

The study found a coefficient of correlation R was .813 an indication of strong positive correlation between the variables. Coefficient of adjusted determination $R^2$ was 0.849 which changes to 84.9% a great indicates of dependent variable can be explained by budget allocation, baseline, performance review and capacity building. The remaining of 15.1% can be explained by the others factors beyond the scope of current study.

The combined study of the independent variables shows results that are in line with some past studies and contrary to some studies that did not study the variables jointly. Specifically, Chofreh et al (2019) have results indicating positive significance on performance variables while Faridi and El-Sayegh (2016) found negative significance on the performance variables.
Table 4.12: Model summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R square</th>
<th>Adjusted R square</th>
<th>Std .Error of Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.813a</td>
<td>.802</td>
<td>.8491</td>
<td>1.31124</td>
</tr>
</tbody>
</table>

4.7.2 ANOVA

The results of Regression analysis are presented in Table 4.13 indicating significant effects on performance of projects $F(2, 87) = 17.234, p < .05)$. From the results, it is indicative that the regression model suitably predicted the outcome variable relating road construction to the performance of projects by KENHA in Nairobi City County. The results are in conformity with other scholars including Haverila and Fehr (2016) have demonstrated that there is positive effect on the performance of projects specifically in road construction. On the contrary, Kusek and Rist (2014) in their study of American road projects established that the performance of these projects can have negative effects from several variables including poor reviews, lack of adequate budget allocation and specifically poor monitoring and evaluation resulting from lack of retraining.

Table 4.13: ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>2.320</td>
<td>2</td>
<td>4.640</td>
<td>17.234</td>
<td>.003b</td>
</tr>
<tr>
<td>Residual</td>
<td>38.412</td>
<td>87</td>
<td>.226</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>40.732</td>
<td>89</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Performance of projects
b. Predictors: (Constant), Budget, Baseline, Reviews, Capacity
4.7.3 Coefficients of Regression

The final analysis of the study involved fitting the model of the study into data constructs using a linear regression model of the form \( Y = a + bx + c \) as proposed.

Using individual coefficients of the study variables as presented in Table 4.14, the independent variables comprising of Budget allocation, baseline surveys, performance reviews and capacity building were respectively matched to their dependent variable which performance as follows with variables was presented using \( R \) and \( Y \) for performance.

\[
Y = \beta_0 + \beta_1 R_1 + \beta_2 R_2 + \beta_3 R_3 + \beta_4 R_4 + \varepsilon \quad \text{..................................................(1)}
\]

\[
Y = 2.311 + 1.632 R_1 + 0.322 R_2 + 1.113 R_3 + 0.709 + 2.113 \quad \text{.................................(2)}
\]

Where \( R_1 \) = Budget allocation

\( R_2 \) = Baseline survey

\( R_3 \) = Performance reviews

\( R_4 \) = Capacity building

This according to the model in (2) indicates that performance without the independent variables would perform at 2.311 units of measurement. Otherwise for every unit of performance, there is a contribution of about 1.632 input of budget allocation, 0.322 input of baseline surveys, 1.113 input units of capacity building and 0.709 unit inputs of capacity building. Similarly, there is uncaptured 2.113 noise or error from the road construction industry that remains undefined.
Table 4.14: Regression Coefficients on Road Construction Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.311</td>
<td>0.219</td>
<td>2.113</td>
<td>.011</td>
</tr>
<tr>
<td>Budget Allocation</td>
<td>1.632</td>
<td>0.672</td>
<td>0.117</td>
<td>1.993</td>
</tr>
<tr>
<td>Baseline Surveys</td>
<td>0.322</td>
<td>0.430</td>
<td>0.057</td>
<td>0.413</td>
</tr>
<tr>
<td>Performance Reviews</td>
<td>1.113</td>
<td>0.136</td>
<td>0.139</td>
<td>1.902</td>
</tr>
<tr>
<td>Capacity Building</td>
<td>0.709</td>
<td>0.682</td>
<td>0.273</td>
<td>1.506</td>
</tr>
</tbody>
</table>
CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings of the study and reaches a conclusion and recommendations. The three sections are based on specific objectives of the study as highlighted in previous chapters.

5.2 Summary

This current study set out specifically to examine the monitoring and evaluation practices and performance of Kenya National Highway Authority (KENHA) road construction projects in Nairobi City County, Kenya. This was accomplished through a survey of road projects in which both KENHA project managers and ministry of transport staff were targeted. Data collected was analysed and presented in form of tables testing mean, standard deviation, diagnostic tests, and inferential statistics with a linear model.

5.2.1 Budget allocation and M& E

The first objective of this study sought to establish the effect of budget allocation on the performance of road construction projects in Nairobi City County by KENHA. The budget allocation on time enhances timely completion of road projects. Moreover, the findings revealed that road projects completed are of quality standards, there is cost effectiveness in undertaking the road projects, efficient process is involved in the carrying out of the road projects and general level of satisfaction with the road projects is high. As indicated by a regression coefficient of 1.632, funds allocated on timely basis helped M&E function positively enhance project performance. The mean cost of
evaluation was approximately four which indicates that accuracy in cost evaluation can lead to good performance of road construction projects. However, scope of the road construction was restricted to the KENHA supervised roads in Nairobi City County leaving out small road projects under county management.

5.2.2 Baseline surveys and M& E

In the second objective, this study sought to establish the effect of baseline surveys on the performance of road construction in Nairobi City County by KENHA. The findings established that baseline survey is conducted before project commencements. It was also established that baseline survey is done in accordance with the designed plan. Baseline reports are also formulated, and the results shared among stakeholders. The analysis indicated a positive effect of this practise with an aggregate mean of four. Regression coefficient of 0.322 a showed further significance of baseline surveys affecting the performance of projects thus a clear indication that the baseline surveys were positively effective on the performance of road construction projects. Other constructs of the baseline surveys including formulation of data capturing designs in the survey as well as sharing with stakeholders scored significant results too.

5.2.3 Performance reviews and M& E

In the third objective, the study sought to establish the effect of performance reviews on the performance of road construction projects in Nairobi City County by KENHA. This was accomplished through both descriptive and inferential statistics. Results indicated by the regression coefficient of 1.113 shows that the reviews were not significant. As a humanistic factor, the reviews were found to positively affect the performance of road construction.
The findings revealed that there is regular review of employees’ work performance. The findings established that employees’ strengths and weaknesses are identified through performance reviews. Including strengths in the performance appraisal tells employees that you notice and appreciate their contributions. Elaborating on their weakness enables them identifying specific areas where they can improve and helps them evaluate their own performance and understand how to improve their skills. Employees receive adequate feedback after performance reviews.

Feedback systems are emerging as a subset of performance review on M&E as a systematic approach to monitoring development interventions. They generate ‘customer-orientated’ data about intended beneficiaries’ perceptions of how well an intervention is working during its life cycle. Feedback data can monitor either the process of an intervention (such as the quantity and quality of services provided by staff) and/or the results achieved. They draw on key principles from customer satisfaction.

Goal setting orient stakeholders and to the tasks to be accomplished and motivate individuals involved in a project to do their best to ensure the goal targets are met. Once a program is underway, they serve as the guideposts for monitoring whether progress is being made on schedule and at the levels originally envisioned.

5.2.4 Capacity Building and M&E

In the fourth objective, this study sought to explore the effect of capacity building on the performance of road construction projects in Nairobi City County by KENHA. The findings revealed that the number of M&E staffing in the projects is sufficiently provided. The findings also established that there is regular training of evaluators, there
is continuous training and development of staff, roles and responsibilities are clearly defined and there is well developed mission on capacity building. It was established that capacity building had a positive effect on performance. Constructs like provision of adequate M&E staff and training showed more positive effect on performance as indicated by a regression coefficient of 0.709. The results also confirmed the constructs of capacity building as being positive towards the performance of KENHA road construction projects in Nairobi City County.

5.3 Conclusion

From the summary of study results and presentations, conclusions based on the objectives were derived. The independent variables were clearly indicating positive influence of performance of Kenya national highway authority road construction projects in Nairobi city County, Kenya.

The first objective seeking to establish the effect of budget allocation on the performance of road construction projects concludes that budget allocation has a positive effect on the performance. Specifically, the timely allocation of funds for the M&E function in road construction played a big and positive role in the performance of road construction projects. Significance of the results from the analysis done led to the conclusion that budget allocation if well harmonized and disbursed within the scope of the road projects contributes significantly towards performance of road construction projects by KENHA in Nairobi City County.

In the second objective of the study, it was sought to establish the effect of baseline surveys on the performance of road construction projects by KENHA in Nairobi City County. Results as presented using the correlation and regression analysis showed
significance and this was an indication that conducting surveys for baseline studies in road construction could be key in the performance of the road construction projects. This finding also led to the conclusion that baseline surveys are to be conducted and shared with all stakeholders to contribute to the performance of road construction projects.

The aim of the third objective was to explore how performance reviews affected the road construction performance within Nairobi City County by KENHA with a specific focus on 7 road construction projects. The initial results in descriptive statistics and subsequent inferential analysis showed strong significance. Further analysis on inferential statistics indicated that the performance reviews played a key role in the performance road construction as the personnel involved were pivotal for review of all stages ensuring positive completion of these projects.

The fourth objective sought to establish the effect of capacity building on the performance of road construction projects by KENHA in the city of Nairobi. Results showed high aggregate means for insufficient M&E staff while indicating agreement for support of regular training of M&E staff. There was equally a good mean score of clarity on the responsibility allocation for staff in the project. The conclusion was capacity building had a positive effect on the road construction project performance considering all constructs of the objective as pursued by the project handlers including training and staffing of M&E function.

The final objective sums up other objectives in this study which is to link the performance of road construction projects and other variables of the study. From the constructs of performance objective, it is concluded that quality standards are sought.
by construction teams. Completion of roads on a timely basis did not achieve an overall perfect score and this negatively affected the performance factor. However, the mean scores of the processes for road completion played a positive role improving the aggregate score, gauging from the road projects that had been completed within the expected timelines. In general, the results indicated good performance on road construction projects.

5.4 Recommendations

The recommendations of the study are derived from the field findings and conclusion set before this section. These include recommendations for improvements, adding to the body of knowledge as well as suggestions for further research.

5.4.1. Suggestions for Improvement

To improve the status of road construction projects, M&E teams should actively drive towards timely road completions while closely monitoring quality standards at all stages of the road construction. Again, the current study recommends timely allocation of budgets to road construction projects with clear scope of the budgetary allocations. It is also suggested that KENHA sets a budget to evaluate the cost of construction projects as well as involve relevant stakeholders in ascertaining the most appropriate budget allocations and disbursements during road construction projects. Similarly, it is important that the M&E function receives special budgetary allocations for the purposes of training and capacity building. These funds should support continuous performance reviews inculcating stakeholders for road construction projects in Nairobi City County. Baseline surveys are highly recommended. With involvement of relevant stakeholders, M&E practises should span across the road constructions scope. This is expected to
accelerate completion rates, as well as enhance quality standards for the city roads under the KENHA umbrella.

5.4.2. Study Contributions to the Body of Knowledge

This study is thought to have made adequate contributions in adding to the base of knowledge in M&E field. Specifically, the study findings will be an asset in project management and performance. Given the nature of theories used in the study and the nature of projects in road construction, findings from this study will help understand the theory of change, RBV theory as well as the theory of constraints as explained in budget allocations, performance reviews and capacity building. Finally, this study will be an asset to project managers, sponsors, and stakeholders in road construction projects.

5.5.3. Suggestions and Proposals for Further Research

At no time can this study claim to have exhausted all the knowledge gaps within the field of project performance and specifically of road construction projects. The study therefore suggests that other scholars take up similar studies by looking at roads under other national bodies, nationally as well as within other counties. It is suggested that another scholar could test the performance of private road construction companies within Nairobi City County or any other County within the country. Otherwise, any scholar would repeat this current study using different variables within a different study location in Nairobi City County.
REFERENCES


APPENDICES

Appendix I: Letter of Introduction

Dear Sir/ Madam,

RE: REQUEST FOR DATA COLLECTION

I am currently a master’s student. I intend to undertake a study on “Monitoring & evaluation Practices and performance of Kenya National Highway Authority Road construction projects in Nairobi City County, Kenya.” Please find the attached questionnaire which aimed at collecting information about this research. All information collected is stored securely and is only used for academic purposes. Kindly be honest when answering the questions in the questionnaire.

Your kind reply will be very valuable.

Yours sincerely,

CHRISTOPHER MWANGI NJERU
Appendix II: Questionnaire

Please tick [✓] or fill in the appropriate information on the spaces provided.

SECTION A: Background information.

1) What is your gender?
   a) Male [ ]
   b) Female [ ]

2) What is your age bracket?
   - Below 25 years [ ]
   - 26-35 years [ ]
   - 36-45 years [ ]
   - 46-55 years [ ]
   - Above 55 years [ ]

3) What is your highest academic qualification?
   - College [ ]
   - Undergraduate [ ]
   - Masters [ ]
   - PhD [ ]

SECTION B: Road Construction Project Performance

4) Please indicate your agreement or otherwise, with the following statements relating to road construction Project Performance. Use the following scale: 1 - Strongly Disagree,

   - 2 - Disagree, 3 - Neutral, 4 - Agree, and 5 - Strongly Agree.
There is timely completion of road projects

The road projects are of quality standards

There is cost effectiveness in undertaking the road projects.

The process involved in the carrying out of the road projects is efficient.

The general level of satisfaction with the road projects is high.

**SECTION C: Budget Allocation**

5) Please indicate your agreement or otherwise, with the following statements relating to Budget Allocation. Use the following scale: 1 - Strongly Disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, and 5 - Strongly Agree.

Sufficient finances have been provided for M&E staff hiring.

The cost of evaluating project is considered during budget allocation.

The scope of the project is considered during budgetary allocation.

There are adequate funds to facilitate benchmarking.
The finances are remitted to the M&E team on timely basis.

**SECTION D: Baseline Surveys**

6) Please indicate your agreement or otherwise, with the following statements relating to Baseline Surveys. Use the following scale: 1 - Strongly Disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, and 5 - Strongly Agree.

<table>
<thead>
<tr>
<th>Statements on Baseline surveys</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline survey is conducted before commencement of the project.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project team designs the plan for performing the baseline survey.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The baseline survey is done in accordance with the designed plan.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is adequate collection and capturing of data on project demands</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The baseline reports are formulated, and the results are shared among stakeholders</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### SECTION E: Performance Reviews

7) Please indicate your agreement or otherwise, with the following statements relating to the Performance Reviews. Use the following scale: 1 - Strongly Disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, and 5 - Strongly Agree.

<table>
<thead>
<tr>
<th>Statements on performance reviews</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is regular review of employees’ work performance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees’ strengths are identified through performance reviews.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees’ weaknesses are identified through performance reviews.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees receive adequate feedback after performance reviews.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Through reviews, the management sets goals for future performance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SECTION F: Capacity Building

8) Please indicate your agreement or otherwise, with the following statements relating to Capacity Building. Use the following scale: 1 - Strongly Disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, and 5 - Strongly Agree.

<table>
<thead>
<tr>
<th>Statements on capacity building</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>The number of M&amp;E staffing in the projects is sufficiently provided.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is regular training of evaluators</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is continuous training and development of staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The roles and responsibilities are clearly defined.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is well developed mission on capacity building.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Appendix III: List of Road Infrastructure Projects

<table>
<thead>
<tr>
<th>NO.</th>
<th>County</th>
<th>Project Name</th>
<th>Constituency</th>
<th>Implementing Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nairobi</td>
<td>Construction of Barabara Plaza</td>
<td>Embakasi</td>
<td>KENHA</td>
</tr>
<tr>
<td>2</td>
<td>Nairobi</td>
<td>Construction of the James Gichuru junction - Rironi</td>
<td>Westlands/Limuru</td>
<td>KENHA</td>
</tr>
<tr>
<td>3</td>
<td>Nairobi</td>
<td>Construction of access roads to the East Africa School of Aviation and Barabara Plaza</td>
<td>Embakasi</td>
<td>KENHA</td>
</tr>
<tr>
<td>4</td>
<td>Nairobi</td>
<td>JKIA Junction-Likoni Road Junction</td>
<td>Embakasi</td>
<td>KENHA</td>
</tr>
<tr>
<td>5</td>
<td>Nairobi</td>
<td>Likoni Road/Mombasa road Jn-James Gichuru Road/ Waiyaki Way Junction</td>
<td>Embakasi/Westlands</td>
<td>KENHA</td>
</tr>
<tr>
<td>6</td>
<td>Nairobi/Kiambu</td>
<td>Nairobi Southern Bypass</td>
<td>Langata/Dagoreti South</td>
<td>KENHA</td>
</tr>
<tr>
<td>7</td>
<td>Nairobi/Kiambu</td>
<td>Bomas – Karen - Ruiru</td>
<td>Langata /Kikuyu /Kabete /Kiambaa/Kiambu/ Ruiru</td>
<td>KENHA</td>
</tr>
</tbody>
</table>