MONITORING AND EVALUATION PRACTICES AND IMPLEMENTATION OF CLIMATE CHANGE PROJECTS IN KENYA: A CASE OF STATE DEPARTMENT FOR ROAD INFRASTRUCTURE PROJECTS IN NAIROBI COUNTY KENYA

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An Applied Research Project Submitted to Business School in Partial Fulfillment of The Requirements for The Award of Master of Monitoring and Evaluation Degree in of Africa Nazarene University

July 2024

DECLARATION

I declare that this applied research project is my original work and that it has not been presented in any other university for academic credit

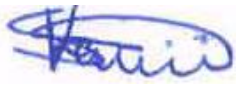
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DEDICATION

To mother Josephine Mutiso, Sisters Betty and Winnie; and friends Cindy, Stacey, Jackie and daughter Annabelle.

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ABSTRACT

The projected climate change weather events such as increasing temperature and precipitation are anticipated to increase disruptions, damage and failure across land based, air and marine transportation systems. Road infrastructure is among the most affected by climate change because increased temperatures affect aging of roads resulting in brittle and cracked surfaces. Monitoring and Evaluation practices are important to inform infrastructure climate change projects implementation. This study focused on monitoring and evaluation practices on implementation of implementation of road infrastructure climate change projects in Kenya to support implementation of Climate Change projects in fulfillment of the Climate Change Act in Kenya. The study was informed by theory of change and systems theory. The study was guided by three objectives namely; to assess the influence of planning for M&E practices on implementation of road infrastructure climate change projects in Kenya, To investigate influence of M&E budgeting practices on implementation of road infrastructure climate change projects in Kenya and finally to determine influence of dissemination of M&E reports on implementation of road infrastructure climate change projects in Kenya. The study used descriptive survey design with mixed approaches. The study target population is 400 and a sample size of 196 determined using Morgan and Krechjie determination table of 1970. Unit of analysis is climate change projects which comprised senior planning officers, superintended engineers, stakeholders and environment and safeguards officers who were involved in the implementation of the study. Data was collected by use of a questionnaire and interview guide questions for qualitative study. Data was cleaned, coded and analyzed by use of SPSS version 25 for descriptive data and Nvivo plus 12 for qualitative data. Inferential statistics was run using regression method and all the null hypotheses were tested and rejected thus accepting the alternate hypotheses. There was weak correlation on the three objectives however there was influence on each to the dependent variable. The study recommends that other researchers to investigate on monitoring and evaluation process in order to compare with the practices of mounting and evaluation.

DEFINITION OF TERMS

Monitoring and Evaluation practices: monitoring and Evaluation practices are management functions used to assess if a progress of a certain activity is contributing towards a goal.

Climate Change projects: set of interrelated activities that have been put in place to either reduce Greenhouse Gas emissions or reduce the risk and vulnerability to climate change. In other words, climate change projects either support to mitigate or adapt to climate change effects.

Climate Change Act: Kenya's regulatory framework enacted in 2016, as a measure to respond towards climate change and to domesticate the Paris Agreement which aims to limit global warming to 2 degrees.

Baseline surveys: for this study, any form of assessment that was done before a climate change project is put in place and the basis against which success of the implemented project will be against this assessment.

Workplan: a written document for each climate change project outlining tasks, timelines and deliverables.

Spending plan: a written document for each climate change project outlining how the distribution costs for the total allocated budget. In other words, a written document to determine the cash flows within the climate change projects.

Communication plan: a defined approach within the state department for roads to provide information to relevant key stakeholders.

ABBREVIATIONS

CCD	Climate Change Directorate
FAO	Food Agriculture Organization
GHG	Greenhouse Gases
GIZ	The Deutsche Gesellschaft für Internationale Zusammenarbeit
IDEAS	The International Development Evaluation Association
M&E	Monitoring and Evaluation
MtCO2e	Metric tons of carbon dioxide equivalent
MRV	Monitoring Reporting and Verification
NDC	Nationally Determined Contributions
NCCAP	National Climate Change Action Plan
PPP	Public Private Partnership
UNFCCC	United Nations Framework Convention for Climate Change
USAID	The United States Agency for International Development

CHAPTER ONE

1.1 INTRODUCTION

This chapter provides an overview of climate change projects as well as monitoring and evaluation practices that influence project implementation. Among the specific practices to be evaluated are planning for M&E, budgeting for M&E and dissemination of M&E reports. The chapter therefore covers the background of the study, statement of the problem, objectives of the study and respective research questions, significance of the study and the conceptual framework of the study.

1.2 Background of the Study

Intensity of temperature and precipitation are some of weather patterns anticipated to increase as due to climate change. (Abbass, Qasim et.al 2022). As a result of this, disruptions and even damage are some of the risks anticipated across transportation systems (National Climate Change Action Plan 2018-2022). Road infrastructure is among the most affected by climate change. Increased temperatures affect aging of roads resulting in brittle and cracked surfaces. As a result of flooding, these cracks deteriorate and cause potholes (Shao et.al, 2017). Every year, Kenya continues to invest heavily in transport infrastructure which are vulnerable to climate change effects (Transport sector climate change annual report 2021).

Monitoring and Evaluation practices are important to inform road infrastructure climate change projects implementation. This study will examine monitoring and evaluation practices on implementation of climate change projects in Kenya to support implementation of Climate Change projects in fulfillment of the Climate Change Act in Kenya, and ultimately the country's commitment towards the Paris Agreement.

1.2.1 Implementation of Climate Change projects

Climate change projects refer to activities that have been set up to reduce greenhouse gas emissions while in the same time supporting development of infrastructure that takes into consideration issues associated with extreme weather patterns such as flooding (Murphy D et al 2019). Implementation of climate change projects in state department for roads are clustered in three pillars as defined by GIZ (2019). That is, **'**Avoiding' measures i.e. projects that aim to improve the efficiency of transport system as a whole, **'**Shifting**'** measures i.e. projects that aim to shift from the most energy consuming and polluting transport modes to more environmentally friendly ones and lastly, 'Improve' measures i.e. projects that focus on vehicle and fuel efficiency (Hussein 2019).

Implementation of climate change projects in state department for roads is important given that road related climate project interventions have been identified globally to have high potential to reduce greenhouse gas emissions adapting to measures to reduce vulnerability to climate changes (United Nations Economic Commission for Europe, 2023). From the Kyoto protocol to the Paris Agreement as well as Kenya's National Climate Change Action Plan (2018-2022), implementation of climate change projects with a focus on road transport is highlighted as important to help reduce associated emissions from high motorization rates that contribute to extreme weather patterns such as flooding that impact road infrastructure (Chapman 2020).

Implementation of climate change projects in state department for roads is measured by looking at two aspects which are, vulnerability assessments and emission reduction (State Department for Transport, 2020). For vulnerability assessments, climate change projects are measured by assessing physical risks to transport infrastructure such as roads, bridges (Murphy D et al, 2019).

For emission reduction, implementation of climate change projects is measured by calculating and analyzing carbon footprint from road transport (Yaacob et al, 2020).

1.2.2 Project Monitoring and Evaluation practices

Monitoring and evaluation are defined as management function that involve collecting and analyzing output or outcome related indicators related to the project to see if the project is on track to deliver the intended results (Singh et.al 2017). Monitoring involves keeping track of progress during project implementation, while evaluation involves systematic assessment of a project at various phases of implementation to guide strategic decision making (Kabeyi 2018).

Monitoring and evaluation practices closely examine the quantity and quality of executed activities within a project as well as the effects triggered as a result of the specific intervention. Effects triggered is based on gathered evidence, which is usually compared to a baseline done prior to the project implementation. Beneficiaries targeted by the results are also usually informed about the effects of the project intervention (Kabeyi 2018).

1.2.2.1 Planning for Monitoring and Evaluation

Planning for M&E refers to a system that links strategic information obtained from various data collection systems to decisions that will accelerate project implementation. Planning is essential when it comes to deciding which data will be collected to track climate change project implementation, how the collected data will be analyzed, necessary baselines and dissemination of results for informed decision making. If planned together with all key stakeholders, participation will be encouraged (FAO 2023). Planning for monitoring and evaluation can be measured by assessing clear articulation of project desired results, the outlined process to achieve them as well as articulation of how the progress towards achieving the results will be measured (International Organization for Migration, 2020).

1.2.2.2 Budgeting for Monitoring and Evaluation

Budgeting for M&E refers to allocation of resources to facilitate climate change project implementation related activities such as field data collection and analysis, staff time, associated logistics among others. Resources available for M&E influences the extent of climate change implementation (Intrac 2019). For climate change projects to be realized within state departments, the M&E budget should not be small to compromise accuracy and credibility of results (Sedrakian 2016). Budgeting for monitoring and evaluation can be measured by assessing the proportion of the project's cost allocated towards Monitoring and Evaluation functions.

1.2.2.3 Dissemination of Monitoring and Evaluation Reports

Dissemination of M&E reports refers to process of relaying findings of project monitoring and evaluation results to relevant stakeholders to either strengthen or improve an intervention (USAID 2021). M&E reports are important as they provide accountability to different stakeholders. Dissemination of M&E reports is also important to explore and investigate what is working well in a project and what is not. They should therefore emphasize the most important findings that can contribute to decisions made by relevant project stakeholders (Odhiambo 2021). Dissemination of M&E reports can be measured by assessing clarity of M&E results dissemination plans as well as relevant stakeholders that the reports reach (Mbugua et al 2018).

1.2.3 Overview of Climate change projects

Even though Kenya contributes less than 0.1 percent of global greenhouse gas (GHG) emissions annually, it has put measures in place to support low carbon development pathway to realize its vision 2030 (USAID 2023). In December 2020, Kenya submitted an updated Nationally Determined Contributions. These contributions build on Kenya's first NDC and other national plans such as the National Climate Change Action Plan (2018-2022). Every five years, the cabinet

secretary under climate change affairs formulates a National Climate Change Action Plan to guide climate change actions implementation (Climate Change Act 2016). Kenya's transport related climate change projects as outlined in the country's NDC include upscaling the construction of roads to systematically harvest water and reduce flooding, enhancing the institutional capacities to conduct vulnerability assessments, enhancing resilience of roads to climate risk and lastly, putting in place low carbon and efficient transportation systems that reduce fuel consumption, fuel overhead costs and encourages low carbon technologies (Ministry of Environment 2020).

1.2.4 Profile of Road Infrastructure Projects in Nairobi County

Nairobi County in conjunction with the national government and state corporations have various ongoing road infrastructure projects related to climate change. These include constriction of non-motorized transport facilities that encourage walking and cycling within the city to encourage the shift from motorized transport, climate proofing and constructing of road infrastructures to ensure reduction of flooding and address decongestion therefore reducing emissions and making provision for use of hybrid and electric buses within Nairobi County. Major infrastructure projects include are the constructions for outer ring road, Mombasa road to Kyumvi and Uhuru highway up to Rironi.

1.3 Statement of the problem

Implementation of climate change projects support mitigation and adaptation to climate change effects. However, they face implementation issues therefore affecting performance. Oxford 2021 highlighted that when it comes to climate change projects there is insufficient understanding of what successful climate change projects look like. Kweyu et.al 2023 in relation to this account looked at East Africa, one of the regions vulnerable to climate change effects such as flooding. They highlight that there exists a gap between policy and implementation of climate change

projects. Notably for Kenya, Tanzania and Uganda significant progress has been made in relation to policy but successful implementation of climate change remains a challenge.

Review of scholarly studies around climate change in Kenya revealed that information on what makes climate change projects successful is scarce and fragmented (Runhaar et.al 2018). Various studies have been conducted by different researchers on M&E practices and implementation of projects. Emphasis has been made on different aspects which include planning for M&E, budgeting for M&E and reporting for M&E. Galgallo (2019) in his study to establish influence of M&E practices on the implementation of country governments' infrastructural development projects in Marsabit County, Kenya concludes that allocation of staff with technical expertise for M&E highly influences implementation of development infrastructural projects. The empirical research study emphasizes that technical capacities to carry out M&E practices can be a big determinant of how a project is implemented and communicated. This research motivated this study in Kenya, where M&E practices was evaluated as factors influencing implementation of climate change projects in Kenya.

Previous studies have focused on climate change barriers as opposed to a close examination of specific approach such as applying M&E practices to support implementation of climate change projects. In addition, there lacks a close examination in the Kenya context to bring out what implementation of climate change means in practice (Karani, 2018). Kimatu (2020) in his study sought to establish influence of monitoring and evaluation of county funded projects in Kajiado County. The study however focused on planning, stakeholder involvement and utilization of M&E findings and does not look at other aspects that have potential influence on project performance or implementation.

This study focuses on M&E practices on implementation of climate change projects. It might help to generate information that can support the state departments to implement climate change projects successfully, therefore fast tracking their contribution towards achieving the Nationally Determined Contributions in line with the Paris Agreement.

1.4 Purpose of the study

The general objective of the study is to establish the influence of monitoring, and evaluation practices on implementation of climate change projects in Kenya, a case of road infrastructure climate change projects in Nairobi County.

1.5 Specific objective

i. To assess the influence of planning for M&E practices on implementation of climate change projects in Kenya
ii. To establish the influence of M&E budgeting practices on implementation of climate change projects in Kenya
iii. To determine how dissemination of M&E reports on implementation of climate change projects in Kenya

1.6 Research hypotheses

H_{01} There is no significant relationship between planning for M&E and implementation of climate change projects in Kenya.

H_{02} There is no significant relationship between budgeting for M&E budgeting and implementation of climate change projects in Kenya.

H_{03} There is no significant relationship between dissemination of M&E reports and implementation of climate change projects in Kenya.

1.7 Significance of the study

The findings of this study would facilitate understanding of the relationship between monitoring and evaluation practices and implementation of climate change projects.

It generated new knowledge that informed additional research in climate change project implementation. The generalized study findings contributed to monitoring and evaluation knowledge for implementing Kenya's climate change projects. Particularly, the study's recommendations informed development and implementation that are anchored on monitoring and evaluation aspects to help achieve desired goals and objectives.

The research findings enhanced accountability among stakeholders who are involved in climate change projects implementation. By involving the project staff in the study as participants, they were able gain to acquire knowledge on M&E practices that can go into future project design and implementation.

1.8 Scope of the study

The research was based on climate change projects implemented in 47 counties in Kenya. The study examined three independent variables namely planning for M&E, budgeting for M&E and dissemination of M&E reports and their influence on implementation of the climate change projects. The study was limited to road infrastructure projects identified in Kenya's Nationally Determined Contributions submitted to UNFCCC in 2020 and elaborated in the country's National Climate Change Action Plan 2018-2022.

1.9 Delimitation of the study

The study was restricted to road infrastructure projects in Nairobi County. For definitive results, the study would have had to be conducted in all 47 counties where different climate change projects are being implemented.

1.10 Limitations of the study

Some of the information required targeted State Department officials who might not afford time to meet individually. To mitigate this, online survey tools were used to generate information. In addition, series of short virtual consultation meetings were used to collect additional information. In addition, the researcher anticipated hurdles in terms of approvals to carry a research in a state department. To mitigate this, the researcher planned prior before the commencement of the study itself.

1.11 Assumptions of the study

The study assumes that implementation of sustainable and effective climate change projects within state departments is highly influenced by M&E practices.

The study also assumes that the respondents would cooperate and be willing to give required information in a transparent manner.

This study assumes that the sample to be selected as a representative can be generalized to represent the entire target population.

1.12 Theoretical Framework

This study focuses on relevant theories applicable to M&E practices and their influence on climate change projects implementation. These are; theory of change and systems theory.

1.12.1 Theory of change

In 1990s Carol Weiss popularized the theory of change. It highlights how activities undertaken by an intervention contributes to a chain of results that ultimately lead to desired impacts (Centre for Theory of Change 2016). Further articulated as 'a theory of how and why an initiative works (Bours 2014). The theory explains why desired change is expected to happen in a context. In this case, desired goals are identified first then mapping out is done backwards to establish conditions that must be in place for the identified goal to be fulfilled (International Institute for Environment and Development 2023).

This theory when applied provides for involvement of relevant stakeholders to ensure that all activities that have been identified are planned for and the goal will be achieved. In the end once the goal has been achieved the advantage is that the tools that were used for it to be successful will be documented in the process and can be replicated in other programs. In summary according to James. C (2011), the theory helps to develop a common understanding among stakeholders of what an organization is trying to change and how and provides an evidence-based justification that an intervention is indeed making a difference, the basis for an impact assessment.

According to Bours et.al (2014), theory of change is one of the robust approaches used by M&E experts to design and evaluate climate change adaptation interventions because it not only entail processes that articulate assumptions that underlie a programme, it also allows for the identification of what is needed to advance along a causal pathway. In the current study, this theory is instrumental in understanding whether the planning for M&E, budgeting for M&E and disseminating M&E reports in climate change projects can be attributed as preconditions for successful implementation of climate change projects.

1.12.2 Systems theory

Systems theory as an area of study developed in the 1950s from the work of Ludwig von Bertalanffy where he emphasized on holism. That is, rather than focusing on the smaller elements that make up a larger system individually, focus should be relations between these smaller elements of the entire system. From the dynamic interrelationships new properties of the system emerge Wilkinson L.A. (2011). According to Wotela K (2016) using systems thinking can be used to conceptually link monitoring and evaluation functions with development interventions and public policies. Because organizations should be dynamic in order to survive and grow, organizations should monitor and collect information that supports to make necessary adjustments to address a problem.

Systems thinking is critical to understand climate science and address climate change. This is because understanding how systems thinking influences attitudes about climate change has implications in for climate change communication and education (Ballew et.al 2019). Application of systems theory in a vast and complex problem such as climate change helps to observe sub systems and feedback loops such as various emissions pathways (Global association of risk professionals 2020).

In this current study, the theory will help to understand the relationships between different elements of monitoring and evaluation practices and how they influence implementation of climate change projects within state departments.

1.13 Conceptual framework

According to Mugenda and Mugenda (2013), a conceptual framework is a graphical representation of notions about relationships in variables. In this case, the variables include Planning for M&E, Budgeting for M&E budgeting and Dissemination of M&E reports. The dependent variable shows

the effect of manipulating the independent variables. From the graphical representation below the dependent variable is implementation of climate change projects.

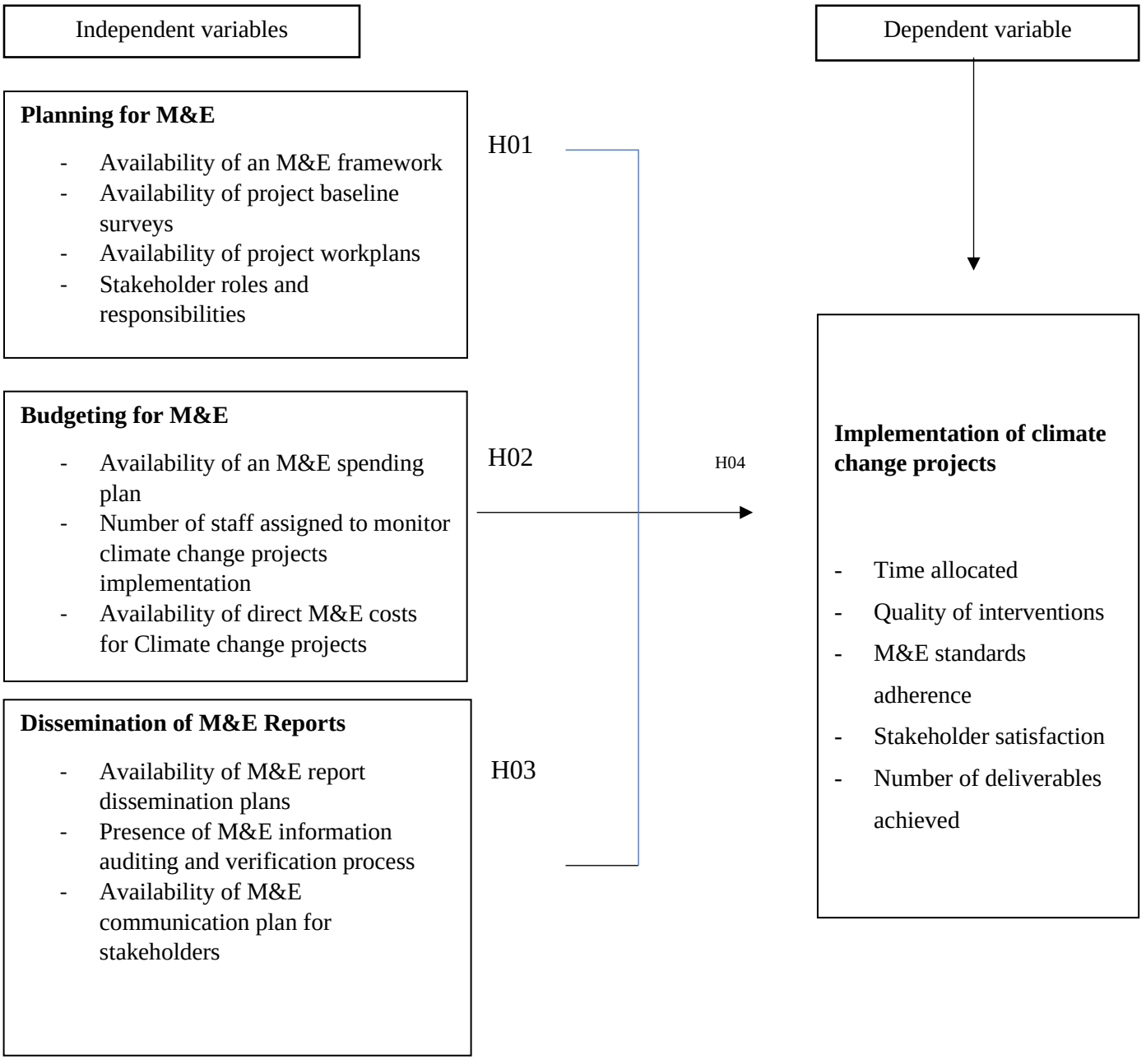


Figure 1: Conceptual framework

Source: Author (2024)

CHAPTER TWO

2. LITERATURE REVIEW

This chapter sought to explore relevant literature on influence of M&E practices on implementation of climate change projects within state departments. The chapter also provides an analysis of studies that have been undertaken in relation to influence of monitoring and evaluation practices on implementation of climate change projects by other scholars. It brings out the linkages with the study variable and research gap.

2.1 Empirical literature review

As Kenya economy grows, motorization of the transport sector increases posing a concern of more emissions. In 2018, Kenya's motorization rate was 30 vehicles per 1000 inhabitants (Deloitte 2018). There are clear linkages between climate change and development, with unsustainable social economic developments being the force behind increased Greenhouse gas emissions (Dodman 2010). FAO (2023) highlight that monitoring and evaluation is a continuous management function used to assess whether there is progress to achieve the set results.

In a descriptive study carried out by Mbugua (2019) to find out influence of monitoring and evaluation practices on the implementation of county governments' infrastructural development projects in Marsabit county in Kenya, M&E is noted to improve overall efficiency of project planning, management and implementation.

2.1.1 Planning for M&E and climate change project implementation

Monitoring and evaluation planning cycle helps in establishing measures or systems for tracking project implementation actions, decisions and initiatives helping minimize the climate change impacts in any sector (Scott et.al 2022). When M&E planning is executed well it provides a clear

picture of the current situation which can be viewed as the baseline against which to measure success of a given intervention. Lack of planning in any project leads to a missed opportunity to track information on what decision and actions are working. This data if captured can be used to build the capacity of the teams and identify the needs and purpose of monitoring and evaluation planning in any development project (Klostermann et al., 2018).

Ivan (2020) on a study on influence of monitoring and evaluation on project performance concluded that monitoring and evaluation has a directly proportional influence on project performance and that for positive influence to be seen an M&E plan should be in place. To facilitate this however, clarity over the objective of M&E activities is crucial to guide implementation of different interventions (Villanueva 2018). According to David (2021) in his study on the role of monitoring and evaluation and the performance of roads construction projects noted that an M&E plan outlines assumptions upon which project goal depends on, as well as providing linkages of activities, outputs and outcomes as outlined in the logical framework. As highlighted in the case of South Africa's climate change M&E plan, key aspects to consider includes identification of indicators for low carbon analysis, desired mitigation and adaptation outcomes as well as methodologies that will be used for assessments Kilroy et.al (2017).

Ssekamatte (2018) notes that many developing nations are implementing several climate change adaptation and mitigation projects, but majority do not have comprehensive M&E plans. A Nigeria case study by Ologunorisa T. (2017) titled 'the Challenge of Climate Change in Africa' concluded that in as much as Nigeria has the necessary policies to tackle climate change there is need for a framework to assess vulnerability of sectors as well as assess and implement different mitigation and adaptation options. This baseline data is an integral part of M&E framework and is necessary before an intervention to provide a basis for comparing the change observed over time against the

situation that existed before (Ssekamatte D 2018). Benefits of planning for M&E according to Ssekamatte (2018) is that it provides a common understanding of success through having a benchmark against which to measure, standardizing and validating the mandates, authorities and responsibilities of different stakeholders as well as deciding which activities to implement. Ssekamatte concludes that planning for M&E in climate change mitigation and adaptation interventions in developing countries is essential to generate knowledge and support decision-making at various levels.

A study by Bevan (2013) on Planning and Implementing Effective Monitoring and Evaluation for Climate Change Projects" concluded that effective planning and implementation of M&E systems can lead to improved decision-making, accountability, and learning for climate change projects. Muchelule (2018) conducted a study that focused on influence of Monitoring Practices such as planning on Projects Performance of Kenya State Corporations. The study established that planning as one of the monitoring techniques influences project performance to a large extent. These techniques as he highlights includes baselines. This is echoed by Galgallo (2019) in a study conducted to establish the Influence of Monitoring and Evaluation Practices on the Implementation of County Governments' Infrastructural Development Projects in Marsabit County, Kenya. The descriptive research survey design study carried on a sample of 165 personnel found out that the projects implementation was not influenced by M&E baseline surveys. Without this proper element of M&E planning, the study concluded that the county government should enhance M&E baseline surveys for it to scale up infrastructural project implementation. The study also recommended proper management participation in all levels of project implementation.

Techniques used to monitor and control a project include using a baseline as a reference point (Tereso 2019). In the study that sought to establish project management practices used by most

private organizations in general and by sector of activity, Tereso et.al 2019 found out that at the planning process a baseline plan is considered as an essential tool. These results are aligned with the study of Njeru (2022) on M&E Practices and their influence in performance of Kenya National Highway Authority Road Construction Projects in Nairobi City County, Kenya. One of the specific objectives was to identify impact of baseline surveys on performance of road construction projects. The study found out that baseline surveys were essential to validate the project scope, therefore assisting to set realistic time, quality and cost expectations.

A comprehensive planning process while involving broad range of stakeholders at all levels is critical. Building a route towards the desired goal of mainstreaming is key when it comes to implementation of climate change (Guzman et.al). In a study by Muli (2020) on unpacking partnerships for planning monitoring and evaluation, active stakeholder participation in planning for M&E is essential to transfer expertise of implemented interventions and increase consensus on the goals of a project. The study found out that despite importance of partnerships for M&E planning, many organizations do not utilize it. Kimatu (2020) noted in her study on influence of monitoring and evaluation on performance of county funded projects that many projects in Kenya are either stalled or fail to kickoff due to inefficient M&E practices. The descriptive study found out that stakeholder involvement in M&E has a great influence on performance of projects. On how the stakeholder involvement in M&E influences performance of projects the study found out that stakeholders help to identify and track needs and expectations within a project.

2.1.3 Budgeting for M&E and climate change project implementation

According to the United Nations Framework for Climate Change Convention, resource allocation for climate related M&E looks at individuals assigned for the process as well as financial resources

allocated to cover data collection and information systems, coordination of the M&E work and special studies to be conducted to inform the process.

The M&E budgeting in the public sector programmes helps the government officials to track the project's expenditure and ensures that the funds are utilized as per planned interventions (Micale et al., 2018). Amos (2015) in conducted a study to determine effectiveness of a monitoring and evaluation system for project, specifically the extent to which funds influences the effectiveness of an M&E system. Availability of funds was found to have a positive correlation with effectiveness of M&E system.

A well-designed M&E system has the potential to clearly define indicators for public spending outputs and outcomes as well as monitor non-financial evaluations (Krause 2010). Nelima (2020) in a study to analyze the effects of M&E programs on performance of government projects in Uganda revealed that M&E should be clearly defined within the overall project budget for M&E to have its rightful recognition within a project. The study recommended clear defining of budgets for M&E by defining what percentage of project cost can be allocated to M&E activities. A spending plan provides for this within a project. According to Kion success centre (2023), a spending plan combines funding sources, amounts as well as start and end dates to be able to calculate a budget and planning rates.

Tunya (2014) sought to examine the influence of M&E integration on sustainability of development projects in Kenya with a focus on Nairobi county work program. On basis of the study findings, the study recommended that projects should focus on efficiency in monitoring processes and service delivery to ensure project implementation success. Service delivery is attributed to staff allocated to execute a specific process. Galgallo (2019) in his study to establish influence of M&E practices on the implementation of country governments' infrastructural

development projects in Marsabit County, Kenya concludes that allocation of staff with technical expertise for M&E highly influences implementation of development infrastructural projects. The empirical research study emphasizes that technical capacities to carry out M&E practices can be a big determinant of how a project is implemented and communicated. This is supported by a feasibility assessment done by Williams et al 2021 to establish climate change adaptation options for Africa. After a review of 827 records across Africa for countries including Kenya, the assessment found that institutional barriers affect implementation of most adaptation options. Some institutional barriers noted include institutional capacity, especially staff allocation to support implementation of adaptation options.

Ooko (2018) conducted a descriptive survey in Migori County to establish influence of monitoring and evaluation systems on provision of healthcare services in public health institutions in Migori County, Kenya. The study was guided by several objectives including human capacity for M&E and found out that technical support increased knowledge on M&E systems. Regular assessment of data was noted to influence provision of healthcare services in public health institution in a great extent and this requires a team solely allocated to drive this process. Wachayu (2016) in her study on monitoring and evaluation factors influencing success of development projects in Kenya cites that the monitoring team especially the number of monitoring staff is one of the factors influencing success of development projects in Nairobi County.

Closely tied to this is direct cost allocation. Baer (2022) highlights that availability of direct M&E costs should be designed for at the beginning of a project. That is, ensuring there is a quantifiable amount available for M&E activities independent of project activity costs. According to Baer (2022), this can only be possible if M&E is treated as a standard and required element of the project therefore including M&E costs in funding requests and requiring specific program designs to

enable M&E to contribute to policies, strategies and project goals and objectives. The figure for many implementers is noted to range from 1% to 25% of the total budget. According to Abdi (2017), both adequate and timely funding is related to project cost performance and time performance respectively. In his study to establish influence of monitoring and evaluation practices on performance in counties, the case of Mombasa County notes that budgetary allocation highly influences project performance.

Allocating direct costs for M&E in a project in many occasions is an additional but a necessary cost to a project according to Campbell (2018). This is because both formative and summative evaluations inform project implementation. Further, evaluations are not only for accountability but also to support learning in a project since it is essential for projects to learn from successes and learn even more from failures.

2.1.4 Disseminating M&E reports and climate change projects implementation

According to Kabonga (2019), the power of monitoring and evaluation is in the ability to demonstrate results and reporting is at the core of this. Reporting provides a basis of justification why an intervention is being implemented. Aspects to consider when reporting is frequency, format and interactions that need to be put in place to facilitate collating of information. Hassan (2013) conducted a study to investigate the structural capacity of Monitoring and Evaluation in project success of road construction projects in Kenya. The study recommended putting in place proper reporting structures and procedures citing that these are necessary to generate relevant information for project success evaluation.

Mpofu (2014) highlights that many low- and middle-income countries experience challenges to produce quality data due to inadequate harmonization of multiple data collection and reporting systems. When it comes to implementation of transport climate change projects, Monitoring,

Reporting and Verification (MRV) supports transparency for NDC implementation. Dagnet et al. 2014 highlight that monitoring entails collecting of activity data on a project or measure. Reporting on the other hand is about compiling information in a standardized format and making it available for different users while verification is about periodically reviewing the submitted information to establish reliability and completeness. According to World Resources Institute (2016), MRV can take different forms i.e. MRV of Greenhouse gas emissions where a department can put mechanisms in place to collect and analyze relevant data to understand its emissions profile and essentially build an inventory or MRV of mitigation actions being implemented through various projects to assess emission reduction effects as well as monitor their implementation in relation to sustainable development.

The aspect of reporting is supported by a study by Kimutai (2019) which examined Nairobi City County public private partnership (PPP) projects and the influence of M&E on their performance. One of specific objectives examined included use of reports to influence performance of the PPP projects. The study found that performance of the projects was negatively affected because M&E reports were not disseminated or deliberated upon to inform decision making. This is in line with a study by Naugle (2015) that established that robust M&E systems are crucial for ensuring that adaptation projects achieve their intended outcomes, and that regular monitoring and evaluation can help to identify opportunities for improvement.

Gertler et.al (2016) highlight that at country level where ministries compete for financial allocation from finance departments accountability to citizens is essential, to inform public about performance of projects being implemented. This robust evidence serves as a basis for accountability, innovation and learning. A communication strategy or information system can guide this. Wanjiku (2015) conducted a study to examine the influence of monitoring and

evaluation (M&E) factors on performance of road project performance in Nyandarua County. The descriptive research design specifically assessed how Information Management Systems used in M&E influences performance of road projects. The study found poor management of M&E information citing poor means of data storage, data processing and information dissemination especially to primary stakeholders who were the communities in this case.

A study by Giles et.al (2021) in Vietnam found that when it comes to climate change implementation and enhancing coordination, communication between ministries and their departments tend to be in one direction often with little feedback to the national level. In many cases, there is no mechanism for critical feedback and recommendations. This is echoed by a study by Ampaire et.al (2017) in Uganda which highlights the same coordination challenge, where departments with climate change issues are likely to disseminate reports and feedback on project implementation up to the donor level especially for the donor assisted projects. The study concludes that strengthening vertical and horizontal communication through multi-stakeholder climate action platforms has benefits which include improving climate change adaptation interventions.

2.1.5 Implementation of Climate Change projects

According to Grassroots Development Initiatives Foundation Kenya (2024), implementation of climate change projects means putting programs in place that limit the amount of greenhouse gases released to the atmosphere while also supporting communities to deal with unavoidable impacts of climate change being already being experienced at the different levels. Ngugi et.al (2022) conducted a descriptive research to determine influence of resource allocation on project implementation in Busia County, Kenya. Results of the study showed that resource allocation had a positive influence on project implementation. However, as highlighted by Owen (2020), for

implementation of adaptation climate change initiatives to be effective routine evaluation into different processes to measure progress and attribute success to various intervention mechanisms are needed. Resource allocation such as adequate time determine quality of interventions.

2.2 Knowledge gap

The literature has tackled the concepts of planning for M&E, budgeting for M&E and disseminating M&E reports as the influencing practices of climate change projects implementation success. Understanding M&E will support state departments to advocate for intervention by relevant bodies through fiscal and monetary policies to enhance climate change projects success. Empirical review has been provided studies on variables being evaluated. As it can be noted, the discussion on the relationship between the monitoring and evaluation practices and climate change projects specifically within the state departments at national level needs to be addressed. Although there are several literatures on climate change projects, evidence regarding their implementation and influencing factors such as M&E remain scarce. Knowledge on what makes climate change projects successful is scarce and fragmented across sectors and across climate change mitigation and adaptation approaches. Further, most of these studies were done in different contexts which cannot be generalized to state departments for roads in Kenya.

Table 1: **Summary of knowledge gaps**

Variable	Author and year	Findings	Knowledge gap	Focus of current study
Planning for M&E	Muchelule (2018)	The study aimed to investigate the influence of monitoring practices on projects performance of Kenya State Corporation with one of the independent variables for the study being monitoring planning. The study found out that planning for M&E influences state corporations projects performance.	The study aimed at investigating the influence of monitoring practices on projects Performance of Kenya State Corporation in general not implementation of projects within specific state departments in the state corporations.	**Context gap:** This study will narrow down to influence of how planning for M&E influences delivery of climate change projects within state departments.
	Kimatu (2020)	Purpose of this study was to establish influence of monitoring and evaluation of county funded projects in Kajiado County. It sought to establish how planning,	The study variables focus on planning, stakeholder involvement and utilization of M&E findings. It does not look at other variables which have potential influence on	**Knowledge gap:** In addition to stakeholder involvement, this study will provide more information based on additional variables such as how availability

		stakeholder involvement influence performance of conservation projects in Amboseli, Kajiado County. The study found out that planning and stakeholder involvement influence performance of projects greatly.	project performance or implementation.	of M&E frameworks, presence of baseline surveys, availability of an M&E plan influence implementation of climate change projects.
Budgeting for M&E	Wachayu (2016)	The study sought to establish the monitoring and evaluation factors influencing success of development projects with a focus on Starehe subcounty Kenya. The study found out that Number of monitoring staff and their monitoring skills, frequency of monitoring and stakeholders'	The study generally focuses on development projects and not specific climate change projects. It also focuses on M&E direct cost allocation in relation to implementation of M&E systems not implementation of the development projects.	**Context gap**: This study will focus on implementation of climate change projects, not development projects. It will examine how the number of staff allocated for M&E activities influences implementation of climate change projects.

		representation to be one of the factors influencing project success. The study also found out that additional direct costs for M&E in development projects was likely to increase implementation of M&E system significantly.		**Knowledge gap**: This study will also examine how direct M&E cost allocation informs implementation of climate change projects.
	Abdi (2017)	Aim of the study was to establish the influence of monitoring and evaluation practices on project performance in Counties with a focus on Mombasa County, Kenya. The study found that budget allocation to be a have a great influence in project performance.	The study does not examine the influence of M&E budget allocation but rather focuses more on overall project budget allocation.	**Knowledge gap:** This study will examine how budgeting for direct M&E costs influences implementation of climate change projects.

Dissemination of M&E reports	Wanjiku (2015)	The study sought to examine the influence of monitoring and evaluation factors on performance of road project performance in Nyandarua County. It was guided by several objectives including assessing how Information Management Systems used in M&E influences performance of road projects within the county.	The study focuses on dissemination of M&E reports in relation to infrastructure projects, specifically road infrastructure	**Context gap**: this study will focus on influence of disseminating M&E reports on implementation of climate change projects.

CHAPTER THREE

3.1 INTRODUCTION TO RESEARCH METHODOLOGY

This section provides an explanation of the research methodology that used for this study. It details the research design, target population, and sample design. It also provides an explanation on how data was collected and analyzed.

3.2 Research design

According to Prahlada G. (2021), research design is a structural framework of methods and techniques that are used by a researcher. This study used a descriptive design. It used a structured questionnaire to collect data that can be quantified to inform the research problem. Descriptive research design facilitates for collection of systematic data that can be quantified. This allowed triangulation of the data analysis without interfering with research analytical findings.

3.3 Research site

The research was carried out in Nairobi County. The selection of the site is based on the factor that road infrastructure projects are concentrated in Nairobi County due to the county's economic importance. This selection site facilitated the researcher's access to government institutions such as the state department for roads which centrally manages road infrastructure projects and coordinates with other relevant institutions. In addition, all project staff, decision makers and key stakeholders sit at the State Department for roads transport located at Transcom House building, Ngong road within the Ministry of Transport, Infrastructure, Housing and Urban Development.

3.4 Target population

According to Lavrakars, (2008) he describes target population for a survey as a finite collection of units from which information is sought. This study's population comprised senior planning

officers, infrastructure projects superintended engineers, stakeholders involved in road infrastructure climate change projects and environment and safeguards officers who oversee the climate change functions for the various infrastructure projects. The target population is 400 people as per the information gotten from the state department.

Table 2 Target population

Target population

Categories	Target Population
Senior planning officers	20
Superintended engineers	30
Stakeholders	210
Environment and safeguards officers	140
Total	**400**

Source: Author (2023)

3.5 Study sample and Sampling procedure

The researcher engaged 196 participants as indicated in table 3.3 below. These participants were drawn from State department for roads, infrastructure climate change project staff, environment and safeguards officers involved in the climate change projects and relevant stakeholders. The senior planning officers and superintended engineers.

The calculations as done as per the formula below

n = N/(1+N(e)2

Where:

n = the sample size,

N = the population of the study,

e = the margin error in the calculation

Whereas the respondents were as follow;

Senior planning officers**:** 196/400 x 20 = 10

Superintended Engineers: 196/400 x 30 = 15

Road Users: 196/400 x 210 = 102

Environment and safeguards officers: 196/400 x 140 = 69

The study sample size is as depicted in Table 3 below.

Table 3 Sample size

Categories	Target population	Sample size
Senior planning officers	20	10
Superintended engineers	30	15
Road users	210	102
Environment and safeguards officers	140	69
Total	**400**	**196**

3.7 Data collection

This section describes how data collection and analysis was carried out and the tools used in collecting the data.

3.7.1 Data collection instrument

Primary data was collected using Likert scale questionnaires. The researcher's choice of the Likert scale questionnaire is because it can directly and quickly obtain information about opinions,

attitudes and behaviors of the participants. Statements on the questionnaire were structured using a scale that allows for degrees of opinion. As a result, quantitative data can be obtained and analyzed relatively easily. While qualitative data was collected through an interview guide on face to face sessions.

3.8 Reliability and Validity of the research Instrument

The researcher conducted a pilot test before commencing actual data collection for the study. This assessed the research data collection tool by checking reliability, validity, integrity, precision and timelines. As a result of the pilot test, the researcher reviewed the research tool together with the data collection assistants and pilot participants to improve on the data collection tool. Review was done for each research objective and appropriate feedback incorporated accordingly the experts and the university supervisors.

3.9 Data collection Procedure

Approval was sought from Monitoring and Evaluation department of Africa Nazarene University (ANU). Approved proposal was shared with State department for roads to seek for authorization.

For each engagement with the participants, ANU authorization letter was presented as part of the researcher's introduction. Overview of the study was also provided with background of the study, and its objectives. Quantitative data was collected through interviews administered using google forms. In cases where participants prefer to administer the research tool themselves, emails or hard copies were delivered appropriately.

3.10 Data processing and analysis

Data was collected using the questionnaires used to retrieve and scrutinize the information provided. Data was then cleaned and validated by the researcher. Frequencies and percentages

were used to draw conclusions in a relevant manner. For data visualization, tables were used to present the information. Once this is done data was analyzed using Statistical Package for the Social Sciences (SPSS) version 25. Descriptive statistics was analyzed and presented in tables where frequencies, percentages, means, standard deviations and overall composite mean are presented.

Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0. 354[a]	0.125	0.121	0.59300

a. Predicator: (Constant), Planning for M&E

ANOVA

Model		Sum of Squares	Df	Mean Squares	F	Sig.
1	Regression	1.742	1	1.742	4.953	0.027 [b]
	Residual	64.703	184	0.352		
	Total	66.445	185			

a. Planning for M&E and Implementation of Road Infrastructure Climate Change Projects

b. Predictors: (Constant), Planning for M&E

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig (p-value)
		B	Std. Error	Beta		
1	(Constant)	2.815	0.230		12.244	0.00
	Planning for M&E	0.154	0.069	0.354	2.225	0.027

3.11 Hypothesis Testing

Hypothesis testing was conducted to establish whether the results of the study support the study hypotheses. Characteristics of comparison were determined from the data collected and a cutoff sample score on the comparison at which the null hypothesis should be rejected was determined. An analysis was then conducted to explore the association between the variables of study.

3.12 Legal and ethical considerations

Approval to carry out the data collection was sought from the state department for roads. In addition, a research permit was obtained from National Commission for Science Technology and Innovation (NACOSTI).

CHAPTER FOUR

DATA PRESENTATION, INTERPRETATION AND DISCUSSION

4. 1. Introduction

The current chapter presents the findings of how monitoring and evaluation practices influence implementation of climate change projects in Kenya: A case of state department for road infrastructure projects in Nairobi County Kenya. Data was collected using questionnaires and an interview guide which was later analyzed and presented in tables. The findings are interpreted and discussed.

4.2. Response Rate

The response rate of the questionnaire in the study was 95%, with at least all questionnaires returned except a few of them which were not returned. This high response rate was as result of cooperation from the study's target audience who were very cooperative in the process. This was also represented by most of respondents being literate and answered the questions via email, physically and what's up services. A high return rate increases the confidence that data accurately reflects the opinions of the vast majority of the respondents.

4.2.1 Questionnaire Response Rate

The questionnaires responses rate of the study is tabulated in Table 4.1

Table 4.1: Return Rate for the Questionnaire

Questionnaire Categories	Frequency	Percentage (%)
Received questionnaires	186	94
Unreturned questionnaires	10	6
Total	**196**	**100.0**

The findings designate that the return rate was 94%. This supersedes 68% as the minimum response rate for conclusive survey findings (Holtom, Baruch, Aguinis & Ballinger, 2022). All the interviewees responded to the interview questions. When return rate is high, it increases the assurance that data reflects the views of the majority of the respondents. As a result, validity is enhanced.

4.3. Demographic Features of the Respondents

The demographic features included: gender, age, marital status, number of years worked, level of education and the current designation of the respondents as summarized in Table 4.2.

Table 4.2 Demographic characteristics of the respondents

Categories (Gender)	**Frequency**	**Percentage**
Male	103	55.4
Female	83	44.6
Total	**186**	**100**
Age	**Frequency**	**Percentage**
Below 30 years	20	10.8
30-39 years	65	34.9
40-49years	55	29.6
50- 59 years	36	19.4
Above 60	10	5.4
Total	**186**	**100**
Marital Status	**Frequency**	**Percentage**
Single	52	28

Married	102	54.8
Others	32	17.2
Total	**186**	**100**
Number of years worked	**Frequency**	**Percentage**
5 Years and below	31	16.7
6-10 years	65	34.9
11-15 Years	47	25.3
16-20 Years	30	16.1
21- Years and above	13	7.0
Total	**186**	**100**
Level of education	**Frequency**	**Percentage**
Bachelors	48	25.8
Master's degree	84	45.2
Diploma	38	20.4
Certificate	12	6.5
Others	4	2.2
Total	**186**	**100**
Current designation	**Frequency**	**Percentage**
Senior management staff	49	26.3
Middle level management	106	57.0
Low level management	31	16.7
Total	**186**	**100**

Source Author: 2024

Gender

Findings from the study indicated a skewed distribution of participants by gender, with a higher number of male participants. The results of the analysis in Table 4.1 designates that 103 (55.4%) respondents were male who are the majority in climate change projects in the state department followed by female at 83(44.6%). This met that male were the majority as it is indicated in climate change sector. Out of the 10 respondents for interview questions, 8 (67%) were males and 2 (33%) was female. The implication of the study is that most men are involved in matters pertaining climate change projects.

When monitoring the projects there was a different opinion since not only the male who monitored and evaluated road projects but also the female counter parts worked on the same calibre. However, they had different perspectives, attitudes and experiences compared to female participants, which could impact the results of the projects being undertaken in the region

Age category respondents

The respondents were of different ages as stated in Table 5. The findings of the study showed that the majority of the participants were beyond 30-39 years 65(34.9%). This is the age which many people are strong and experienced in what they perform. This means that majority at this age are able to work with ease and with appropriate measures as they are directed by their supervisors in the sector thus good performance of the activities being implemented on road construction sector. However, those under category of 40-49 years were 55(29.6%) had worked in the state offices for a long time hence had a good experience on climate change experiences. The category of 50 -59 years were 36(19.4%) which was the third category, this means that they could be tired and not very productive like other categories in the implementation of road constructions projects. The fourth section was below 30 years 20(10.8%) who are very young and energetic but without much experience with the tasks being undertaken.

The last and final group was above 60 years 10(5.4%) who were the oldest in the profession. The age category indicates that the execution of road projects requires competent contractors who are both mature enough to manage any type of project being undertaken and possess the knowledge and expertise necessary for building roads.

Marital status

The study collected data on respondents' marital status and discovered that married people made up the majority of the sample at 102(54.8%) followed by single which had 52(28%). This means that the married category took the day since others had only 32(17.2%). This shows that there were many people who were married and had families hence making it a better group to work with in the implementation of the road construction projects since they might be settled and ready to work.

Number of years worked in the current company

The study sought information on number of years one worked in the company and the findings were as follows, those who had the highest stay were between the years of 6-10 who were 65(34.9%). This category was followed by 11-15 years at 47(25.3%). Another group followed closely with 31 years had 31(16.7%) followed closely by 16-20 years at 30(16.1%). The least category was 21 years and above at 13 respondents only (7.0%). The findings implies that majority who had stayed at a longer duration had a clip of what happens in the construction industry hence good yields were experienced.

Education or the respondents

Based on the results in Table 4.2 on the study findings majority of participants are master’s degree holders with 84(45.2%) followed by bachelors with 48(25.8%). This shows that most respondents have knowledge of climate change and construction of roads projects and were able to comprehend

on the questions asked in the current study. The third was diploma holders at 38(20.4%), while certificates holders were 12(6.5%). Others had 4(2.2%) were the last in every category and had a great deal of additional information that was not feasible to incorporate into this research. Thus, the information has very little bearing on the execution of road projects because it is not very suitable for usage, according to this study.

Everyone working on the road projects seemed knowledgeable and experienced in what they were doing. This implies that they were all well-educated and possessing the requisite abilities. The results satisfied the requirements because many of the participants could read and write, showing that everyone participating in the study was literate. However, some conclusions can be problematic because some persons might be overqualified or have never attended school. These people provided information that was essential for road projects and the research area as a whole.

4.4 Findings on Planning for M&E and Implementation of Road Infrastructure Climate Change Projects

Planning for M&E on Implementation of Road Infrastructure Climate Change Projects is the independent variable which is measured by availability of M&E framework, availability of project base line, availability of project work plan and stakeholder responsibility.

4.4. Descriptive Analysis of Study Variables

4.4.1 Planning for M&E on Implementation of Road Infrastructure Climate Change Projects

There were six items responded to as indicated in Table 4.3 on Planning for M&E on Implementation of Road Infrastructure Climate Change Projects.

Table 4.3 Planning for M&E and implementation of road infrastructure climate change projects

Statements (Planning for M & E)	SD % F	D % F	N % F	A % F	SA % F	Mean	Std Deviation
1. There is a project logic model for the road infrastructure climate change projects developed with inputs, outputs, activities, outputs and outcomes	13 (7.0%)	47 (25.3%)	19 (10.2%)	62 (33.3%)	45 (24.2%)	**3.42**	**1.28**
2. M&E frameworks need to be developed in a participatory manner to include all key stakeholders for a project to be successful	17 (9.1%)	42 (22.6%)	13 (7.0%)	64 (34.4%)	50 (26.9%)	**3.47**	**1.34**
3. Baseline surveys are essential for each climate change project to provide a basis against which progress and impact will be measured	19 (10.2%)	47 (25.3%)	21 (11.3%)	67 (36.0%)	32 (12.2%)	**3.25**	**1.28**
4. Project work plans play a crucial role to guides climate change project implementation, including tracking progress and evaluating results	19 (10.2%)	49 (26.3%)	24 (12.9%)	62 (33.3%)	32 (17.2%)	**3.21**	**1.28**
5. Project work plans require regular reviewing to guide project implementation decision making such as resource allocation	35 (18.8%)	65 (34.4%)	14 (7.5%)	50 (26.9%)	22 (11.8%)	**2.78**	**1.34**

6. All key stakeholders are consulted during climate change project implementation monitoring and evaluation.	16 (8.6%)	53 (28.5%)	15 (8.1%)	58 (31.2%)	44 (23.7%)	**3.33**	**1.33**
Overall Composite Mean and Std deviation						**3.24**	**1.32**

Source Author: 2024

Statement one indicates that there is a project logic model for the road infrastructure climate change projects developed with inputs, outputs, activities, outputs and outcomes with mean of 3.42 and standard deviation of 1.28. According to the number of questionnaires given there were 186 respondents, 13(7.0%) strongly disagreed, 47(25.3%) disagreed, 19(10.2%) neutral, 62(33.3%) agreed while 45(24.2%) strongly agreed. These result show that 3.42 is higher than the composite mean of 3.24. The implication of these results to the study is project logic model for the road infrastructure climate change projects developed with inputs, outputs, activities, outputs and outcomes influence the implementation of road projects. The Standard deviation of 1.28 is lower than the composite standard deviation of 1.32 indicating that there was diverging opinions among the respondents.

In the second statement M&E frameworks need to be developed in a participatory manner to include all key stakeholders for a project to be successful mean of 3.47 and standard deviation of 1.34. According to the number of questionnaires there were 186 respondents, 17(9.1%) strongly disagreed, 42(22.6%) disagreed, 13(7.0%) neutral, 64(34.4%) agreed while 50(26.9%) strongly agreed. These result shows that 3.47 is higher than the composite mean of 3.24. The implication of these results to the study is all stakeholders' needs to be involved in projects being implemented. The Standard deviation of 1.35 is higher than the composite standard deviation of 1.32 indicating that there was diverging opinions among the respondents.

Statement three Baseline surveys are essential for each climate change project to provide a basis against which progress and impact will be measured with mean of 3.25 and standard deviation of 1.28. According to the number of questionnaires there were 186 respondents, 19(10.2%) strongly disagreed, 47(25.3%) disagreed, 21(11.3%) neutral, 67(36.0%) agreed while 32(12.2%) strongly agreed. These result show that 3.25 is higher than the composite mean of 3.24. The implication of these results to the study is the Baseline surveys are essential for each climate change project to provide a basis against which progress and impact will be measured. The Standard deviation of 1.28 is lower than the composite standard deviation of 1.32 indicating that there was diverging opinions among the respondents.

Statement four on project work plans play a crucial role to guides climate change project implementation, including tracking progress and evaluating results with mean of 3.21 and standard deviation of 1.28. According to the number of questionnaires there were 186 respondents, 19(10.2%) strongly disagreed, 49(26.3%) disagreed, 24(12.9%) neutral, 62(33.3%) agreed while 32(17.2%) strongly agreed. These result show that 3.21 is higher than the composite mean of 3.24. The implication of these results to the study is project work plans play a crucial role to guides climate change project implementation, including tracking progress and evaluating results. The Standard deviation of 1.28 is lower than the composite standard deviation of 1.32 indicating that there was converging opinions among the respondents.

Statement five on set of objectives and number of deliverables were achieved as per the planned activities with mean of 3.12 and standard deviation of 1.31. According to the number of questionnaires there were 186 respondents, 19(10.2%) strongly disagreed, 59(31.7%) disagreed, 22(11.8%) neutral, 53(28.5%) agreed while 33(17.7%) strongly agreed. These result show that 3.12 is lower than the composite mean of 3.24. The implication of these results to the study is set

of objectives and number of deliverables influence implementation of road projects. The Standard deviation of 1.31 is lower than the composite standard deviation of 1.32 indicating that there was converging opinions among the respondents.

Statement six all key stakeholders are consulted during climate change project implementation monitoring and evaluation with mean of 3.33 and standard deviation of 1.33. According to the number of questionnaires there were 186 respondents, 16(8.6%) strongly disagreed, 53(28.5%) disagreed, 15(8.1%) neutral, 58(31.2%) agreed while 44(23.7%) strongly agreed. These result show that 3.33 is higher than the composite mean of 3.24. The implication of these results to the study is set of objectives and number of deliverables influence implementation of road projects. The Standard deviation of 1.33 is lower than the composite standard deviation of 1.32 indicating that there was converging opinions among the respondents.

4.4.4 Qualitative Data on Planning for M&E and Implementation of Road Infrastructure Climate Change Projects

It was discovered that Planning for M&E and Implementation of Road Infrastructure Climate Change Projects, were related to the answers given to the assertions provided at each variable in the interview guide questions. The qualitative responses are summarized,

> *"Many people are involved in project implementation however there are challenges experienced during implementation."*

4.5 Findings on Budgeting for M&E and Implementation of Road Infrastructure Climate Change Projects

Budgeting for M&E on Implementation of Road Infrastructure Climate Change Projects is the independent variable which is measured by availability of M&E spending plan, number of staff

assigned to monitor climate change projects implementation, availability of direct M&E costs for climate change projects.

4.5.1 Descriptive Data on Budgeting for M&E and Implementation of Road Infrastructure Climate Change Projects

There were four items responded to as indicated in Table 9 on Budgeting for M&E on Implementation of Road Infrastructure Climate Change Projects

Table 4 Budgeting for M&E on implementation of road infrastructure climate change projects

Statements(Budgeting for M&E)	SD % F	D % F	N % F	A % F	SA % F	Mean	Std Deviation
1. Monitoring and Evaluation budget allocation was made for the road infrastructure climate change projects	30 (16.1%)	62 (33.3%)	25 (13.4%)	47 (25.3%)	22 (11.8%)	**2.83**	**1.29**
2. Availability of resources and M&E spending plan is always planned and ready	15 (8.1%)	47 (25.3%)	25 (13.4%)	65 (34.9%)	34 (18.3%)	**3.30**	**1.25**
3. Monitoring and Evaluation budget use is guided by a spending plan	20 (10.8%)	46 (24.7%)	20 (10.8%)	58 (31.2%)	42 (22.6%)	**3.30**	**1.34**
4. Monitoring and evaluation staff members have been appointed to ensure road infrastructure projects are implemented successfully	23 (12.4%)	55 (29.6%)	12 (6.5%)	57 (30.6%)	39 (21.0%)	**3.18**	**1.38**
Overall Composite Mean and Std deviation						**3.15**	**1.29**

Source Author: 2024

As stated in the first statement Monitoring and Evaluation budget allocation was made for the road infrastructure climate change projects with mean of 2.83 and standard deviation of 1.29. According to the number of questionnaires there were 186 respondents, 30(16.1%) strongly disagreed, 62(33.3%) disagreed, 25(13.4%) neutral, 47(25.3%) agreed while 22(11.8%) strongly agreed. These result show that 2.83 is lower than the composite mean of 3.15. The implication of these results to the study is the stakeholders are satisfied with the project implementation of road projects allocation process of the resources. The Standard deviation of 1.29 is at per with the composite standard deviation of 1.29 indicating that there was equal agreement on opinions amongst themselves.

The second statement on availability of resources and M&E spending plan is always planned and with mean of 3.30 and standard deviation of 1.25. According to the number of questionnaires there were 186 respondents, 15(8.1%) strongly disagreed, 47(25.3%) disagreed, 25(13.4%) neutral, 65(34.9%) agreed while 34(18.3%) strongly agreed. These result show that 3.30 is higher than the composite mean of 3.15. The implication of these results to the study is that availability of resources and M&E spending plan is always planned as agreed upon. The Standard deviation of 1.25 is lower than the composite standard deviation of 1.29 indicating that there was diverging opinions amongst the respondents.

The third statement also on Monitoring and Evaluation budget use is guided by a spending plan had mean of 3.30 and standard deviation of 1.34. According to the number of questionnaires there were 186 respondents, 20(10.8%) strongly disagreed, 46(24.7%) disagreed, 20(10.8%) neutral, 58(31.2%) agreed while 42(22.6%) strongly agreed. These result show that 3.30 is higher than the composite mean of 3.15. The implication of these results to the study is that Monitoring and Evaluation budget use is guided by a spending plan thus influencing implementation of roads

construction projects. The Standard deviation of 1.34 is higher than the composite standard deviation of 1.29 indicating that there was diverging opinions amongst the respondents

In the fourth Statement on monitoring and evaluation staff members have been appointed to ensure road infrastructure projects are implemented successfully had mean of 3.18 and standard deviation of 1.38. According to the number of questionnaires there were 186 respondents, 23(12.4%) strongly disagreed, 55(29.6%) disagreed, 12(6.5%) neutral, 57(30.6%) agreed while 39(21.0%) strongly agreed. These result show that 3.18 is higher than the composite mean of 3.15. The implication of these results to the study is that Monitoring and Evaluation staff members have been appointed to ensure road infrastructure projects are implemented successfully thus influencing implementation of roads construction projects. The Standard deviation of 1.38 is higher than the composite standard deviation of 1.29 indicating that there were differing opinions amongst the respondents

4.5.4 Qualitative Data on Budgeting for M&E and Implementation of Road Infrastructure Climate Change Projects

It was discovered that Budgeting for M&E and Implementation of Road Infrastructure Climate Change Projects, were related to the answers given to the assertions provided at each variable in the interview guide questions. The qualitative responses are summarized,

> *"There are many different budgets prepared but they don't match the work to be performed hence failure of the implementation of the projects. Again many officers are never found in the ground collaborating with the stakeholders who are the majority in the community."*

4.6.1 Descriptive Data on Dissemination of M&E Reports and Implementation of Road Infrastructure Climate Change Projects

There were four items responded to as indicated in Table 4.8 on Dissemination of M&E Reports on Implementation of Road Infrastructure Climate Change Projects

Table 5 Dissemination of M&E reports on implementation of road infrastructure climate change projects

Statements (Dissemination of M&E Reports)	SD % F	D % F	N % F	A % F	SA % F	Mean	Std Deviation
1. The state department M&E report dissemination plan/process is in place	25 (13.4%)	53 (28.5%)	18 (9.7%)	55 (29.6%)	35 (18.8%)	**3.12**	**1.36**
2. M&E report dissemination to key stakeholders play a crucial role to inform project implementation	18 (9.7%)	45 (24.2%)	28 (15.1%)	54 (29.0%)	41 (22.0%)	**3.30**	**1.31**
3. There is a quality assurance process to audit and verify M&E collected information before dissemination	25 (13.4%)	50 (26.9%)	16 (8.6%)	57 (30.6%)	38 (20.4%)	**3.18**	**1.38**
4. The department has a communication plan to disseminate M&E reports to all key stakeholders	17 (9.1%)	46 (24.7%)	11 (5.9%)	69 (37.1%)	43 (23.1%)	**3.18**	**1.32**
Overall Composite Mean and Std deviation						**3.25**	**1.35**

Source Author: 2024

In the first statement on the state department M&E report dissemination plan/process is in place had mean of 3.12 and standard deviation of 1.36. According to the number of questionnaires there

were 186 respondents, 25(13.4%) strongly disagreed, 53(28.5%) disagreed, 18(9.7%) neutral, 55(29.6%) agreed while 35(18.8%) strongly agreed. These result show that 3.12 is lower than the composite mean of 3.25. The implication of these results to the study is that state department have written M&E report ready for dissemination process thus influencing implementation of roads construction projects. The Standard deviation of 1.35 is higher than the composite standard deviation of 1.29 indicating that there was diverging opinions amongst the respondents.

The second statement on M&E report dissemination to key stakeholders play a crucial role to inform project implementation had mean of 3.30 and standard deviation of 1.36. According to the number of questionnaires there were 186 respondents, 18(9.7%) strongly disagreed, 45(24.2%) disagreed, 28(15.1%) neutral, 54(29.0%) agreed while 41(22.0%) strongly agreed. These result show that 3.20 is lower than the composite mean of 3.25. The implication of these results to the study is that M&E report are normally dissemination in time thus influencing implementation of roads construction projects easy and corrections made in time. The Standard deviation of 1.31 is higher than the composite standard deviation of 1.29 indicating that there was diverging opinions meaning that they did not agree on the statement since they had divisive opinions.

The third statement on there is a quality assurance process to audit and verify M&E collected information before dissemination had mean of 3.30 and standard deviation of 1.36. According to the number of questionnaires there were 186 respondents, 25(13.4%) strongly disagreed, 50(26.9%) disagreed, 16(8.6%) neutral, 57(30.6%) agreed while 38(20.4%) strongly agreed. These result show that 3.18 is lower than the composite mean of 3.25. The implication of these results to the study is that there is a quality assurance process to audit and verify M&E collected information before dissemination thus influencing implementation of roads construction projects easy and corrections made in time. The Standard deviation of 1.38 is higher than the composite standard deviation of 1.29 indicating that there was diverging opinions meaning that they did not come into agreement with the statement since they had differing opinions.

The fourth statement on the department has a communication plan to disseminate M&E reports to all key stakeholders had mean of 3.18 and standard deviation of 1.32. According to the number of questionnaires there were 186 respondents, 17(9.1%) strongly disagreed, 46(24.7%) disagreed, 11(5.9%) neutral, 69(37.1%) agreed while 43(23.1%) strongly agreed. These result show that 3.18 is lower than the composite mean of 3.25. The implication of these results to the study is that department communications well using plans already developed in order to disseminate M&E reports to all key stakeholders therefore influencing implementation of roads construction projects easy and corrections made in time. The Standard deviation of 1.32 is higher than the composite standard deviation of 1.29 indicating that there was diverging opinions meaning that they did not come into agreement with the statement since they had differing opinions.

4.7 Findings on Implementation of Road Infrastructure Climate Change Projects

Implementation of Road Infrastructure Climate Change Projects is the independent variable which is measured by time allocated, quality of interventions, M&E standards adherence, stakeholder satisfaction and number of deliverables achieved.

4.7.1 Implementation of Road Infrastructure Climate Change Projects

There were five items responded to as indicated in Table 4.11 on Implementation of Road Infrastructure Climate Change Projects

Table 6 Implementation of road infrastructure climate change projects

Statements(Implementation of Road Infrastructure Climate Change Projects)	SD % F	D % F	N % F	A % F	SA % F	Mean	Std Deviation

1. The allocated for the projects of state department M&E is sufficient	16 (8.6%)	61 (32.8%)	32 (17.2%)	49 (26.3%)	28 (15.1%)	**3.06**	**1.24**
2. There are quality interventions on projects which are being implemented	21 (11.3%)	46 (24.7%)	19 (10.2%)	59 (31.7%)	41 (22.0%)	**3.28**	**1.35**
3. M&E standards are adhered to by the key stakeholders who play a crucial role to inform project managers and clientele	17 (9.1%)	49 (26.3%)	12 (6.5%)	63 (33.9%)	45 (24.2%)	**3.38**	**1.34**
4. The stakeholders are satisfied with the project implementation which is ongoing despite the challenges	6 (3.2%)	29 (15.6%)	25 (13.4%)	73 (39.2%)	53 (28.5%)	**3.74**	**1.12**
5. The set of objectives and number of deliverables were achieved as per the planned activities	19 (10.2%)	59 (31.7%)	22 (11.8%)	53 (28.5%)	33 (17.7%)	**3.12**	**1.31**
Overall Composite Mean and Std deviation						**3.31**	**1.26**

The first statement on resources allocated for the projects of state department M&E is sufficient had mean of 3.06 and standard deviation of 1.24. According to the number of questionnaires there were 186 respondents, 16(8.6%) strongly disagreed, 61(32.8%) disagreed, 32(17.2%) neutral, 49(26.3%) agreed while 28(15.1%) strongly agreed. These result show that 3.06 is lower than the composite mean of 3.31. The implication of these results to the study is that resources allocated for the projects of state department M&E is sufficient therefore influencing implementation of roads construction projects easy and corrections made in time. The Standard deviation of 1.24 is

lower than the composite standard deviation of 1.29 indicating that there was converging opinions meaning the respondents had agreed opinions that resources were distributed accordingly.

The second statement on quality interventions on projects which are being implemented had mean of 3.28 and standard deviation of 1.35. According to the number of questionnaires there were 186 respondents, 21(11.3%) strongly disagreed, 46(24.7%) disagreed, 19(10.2%) neutral, 59(31.7%) agreed while 41(15.1%) strongly agreed. These result show that 3.28 is lower than the composite mean of 3.31. The implication of these results to the study is that there was quality intervention on projects being implemntated on roads construction projects easy and corrections made in time. The Standard deviation of 1.35 is higher than the composite standard deviation of 1.29 indicating that there was converging opinions meaning the respondents had agreed opinions in that resources were distributed accordingly.

The third statement on M&E standards are adhered to by the key stakeholders who play a crucial role to inform project managers and clientele had mean of 3.28 and standard deviation of 1.34. According to the number of questionnaires there were 186 respondents, 17(9.1%) strongly disagreed, 49(26.3%) disagreed, 12(6.5%) neutral, 63(33.9%) agreed while 45(24.2%) strongly agreed. These result show that 3.28 is lower than the composite mean of 3.31. The implication of these results to the study is that standards of M&E are adhered to by both managers and clients thus influencing implementation of road construction projects. The Standard deviation of 1.35 is higher than the composite standard deviation of 1.29 indicating that there was converging opinions meaning the respondents had agreed opinions in that resources were distributed accordingly.

The fourth statement about stakeholders are satisfied with the project implementation which is ongoing despite the challenges had mean of 3.74 and standard deviation of 1.12. According to the number of questionnaires there were 186 respondents, 6(3.2%) strongly disagreed, 29(15.6%)

disagreed, 25(13.4%) neutral, 73(39.2%) agreed while 53(28.5%) strongly agreed. These result show that 3.74 is higher than the composite mean of 3.31. The implication of these results to the study is that stakeholders are satisfied with the project implementation which is ongoing despite the challenges thus influencing implementation of road construction projects. The Standard deviation of 1.12 is lower than the composite standard deviation of 1.29 indicating that there was converging opinions meaning the respondents had agreed opinions in that resources were distributed accordingly.

The final statement about set of objectives and number of deliverables were achieved as per the planned activities had mean of 3.12 and standard deviation of 1.31. According to the number of questionnaires there were 186 respondents, 19(10.2%) strongly disagreed, 59(31.7%) disagreed, 22(11.8%) neutral, 53(28.5%) agreed while 33(17.7%) strongly agreed. These result show that 3.12 is lower than the composite mean of 3.31. The implication of these results to the study is that set of objectives and number of deliverables were achieved as per the planned activities thus influencing implementation of road construction projects. The Standard deviation of 1.12 is lower than the composite standard deviation of 1.29 indicating that there was converging opinions meaning the respondents had same feelings about the statement and found out that if objectives are not set well as per the projects.

4.7.2 Qualitative Data on Implementation of Road Infrastructure Climate Change Projects

It was discovered that Implementation of Road Infrastructure Climate Change Projects, were related to the answers given to the assertions provided at each variable in the interview guide questions. The qualitative responses are summarized,

"Implementation of projects in Nairobi County is a menace. This due to so many interferences from the political arena and other factors which are beyond the control of the implementers of road projects"

4.4.2 Inferential Statistics for Planning for M&E and Implementation of Road Infrastructure Climate Change Projects

Correlation between Planning for M&E and Implementation of Road Infrastructure Climate Change Projects was computed by means of Pearson`s correlational analyses and Table 7 which presents the statistical outputs. The total scores of the scale were computed as a summation of the individual scores on each item by the respondents at 95% level of confidence. The correlation analysis results obtained are shown in Table 7.

Table 7 Correlation between planning for M&E and implementation of road infrastructure climate change projects

Variable	Statistics	Implementation of Road Infrastructure Climate Change Projects
Planning for M&E	Pearson Correlation	0.354**
	Sig.(2-tailed)	0.027
	N	186

(n=186); **Correlation is significant at 0.05 level (2-tailed)

The study found a weak positive overall correlation of 0.354 which was statistically significant as (P-Value=0.027 < 0.05); implying that there is a significant relationship between planning for M&E on Implementation of Road Infrastructure Climate Change Projects, leading to the rejection of the null hypothesis and acceptance of the alternative hypothesis hence the research results

conclude that there is significant relationship between planning for M&E on Implementation of Road Infrastructure Climate Change Projects

4.4.3 Model summary of Planning for M&E on Implementation of Road Infrastructure Climate Change Projects

The model sought to determine how planning for M&E as predictor significantly or insignificantly influenced Implementation of Road Infrastructure Climate Change Projects. Simple linear regression was adapted to investigate how planning for M&E influences Implementation of Road Infrastructure Climate Change Projects. The regression model summary results are presented in Table 8.

Table 8 Regression model summary table on planning for M&E and implementation of road infrastructure climate change projects

Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0. 354[a]	0.125	0.121	0.59300

b. Predicator: (Constant), Planning for M&E

ANOVA

Model		Sum of Squares	Df	Mean Squares	F	Sig.
1	Regression	1.742	1	1.742	4.953	0.027 [b]
	Residual	64.703	184	0.352		
	Total	66.445	185			

a. Planning for M&E and Implementation of Road Infrastructure Climate Change Projects

b. Predictors: (Constant), Planning for M&E

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig (p-value)
		B	Std. Error	Beta		
1	(Constant)	2.815	0.230		12.244	0.00
	Planning for M&E	0.154	0.069	0.354	2.225	0.027

a. Independent Variable: Planning for M&E

The Model summary Table 4.4 suggest that there is a positive correlation (R^2=0.125) between Planning for M&E and Implementation of Road Infrastructure Climate Change Projects and those predicted by the regression model. The ANOVA data shows that F=4.953, Planning for M&E was significant in estimating Implementation of Road Infrastructure Climate Change Projects since p=0.027<0.05. Thus, the model was fit in predicting dependent variable. The coefficient data shows that holding other factors constant, Implementation of Road Infrastructure Climate Change Projects would stand at 2.815. A unit rise in the Planning for M&E would lead to 0.154 change in Implementation of Road Infrastructure Climate Change Projects, given that other factors were held constant. The substituted model is:

Model: $Y= 2.815+0.154X_1+\varepsilon$ where,

Y = Implementation of Road Infrastructure Climate Change Projects

X_1 Planning for M&E

ε = Error term.

4.4.5 Discussion on Planning for M&E and Implementation of Road Infrastructure Climate Change Projects

The descriptive and correlational data make it clear that there is a relationship between Planning for M&E and Implementation of Road Infrastructure Climate Change Projects. The results are consistent with those of other similar empirical studies that suggest Planning for M&E affect the success of Implementation of Road Infrastructure Climate Change Projects as stated by (Scott et.al

2022 Ivan (2020) and David (2021). According to Galgallo (2019) on Monitoring and Evaluation Practices on the Implementation of County Governments' Infrastructural Development Projects in Marsabit County, Kenya. The descriptive research survey design study carried on a sample of 165 personnel found out that the projects implementation was not influenced by M&E baseline surveys

4.5.2 Inferential Statistics for Budgeting for M&E and Implementation of Road Infrastructure Climate Change Projects

Correlation between Budgeting for M&E and Implementation of Road Infrastructure Climate Change Projects was computed by means of Pearson`s correlational analyses and Table 4.6 which presents the statistical outputs. The total scores of the scale were computed as a summation of the individual scores on each item by the respondents at 95% level of confidence. The correlation analysis results obtained are shown in Table 10

Table 9 Correlation between budgeting for M&E and implementation of road infrastructure climate change projects

Variable	Statistics	Implementation of Road Infrastructure Climate Change Projects
Budgeting for M&E	Pearson Correlation	0.368**
	Sig.(2-tailed)	0.034
	N	186

(n=186); **Correlation is significant at 0.05 level (2-tailed)

The study found positive overall correlation 0.368 which was statistically significant as (P-Value=0.034 < 0.05); implying that there is a significant relationship between Budgeting for M&E on Implementation of Road Infrastructure Climate Change Projects, leading to the rejection of the null hypothesis and acceptance of the alternative hypothesis hence the research results conclude

that there is significant relationship between Budgeting for M&E on Implementation of Road Infrastructure Climate Change Projects

4.5.3 Model summary of Budgeting for M&E on Implementation of Road Infrastructure Climate Change Projects

The model sought to determine how budgeting for M&E as predictor significantly or insignificantly influenced Implementation of Road Infrastructure Climate Change Projects. Simple linear regression was adapted to investigate how budgeting for M&E influences Implementation of Road Infrastructure Climate Change Projects. The regression model summary results are presented in Table 11.

Table 10 Regression model summary table on budgeting for M&E and implementation of road infrastructure climate change projects

Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0. 368[a]	0.0135	0.122	0.60086

c. Predicator: (Constant), Budgeting for M&E

ANOVA

Model		Sum of Squares	Df	Mean Squares	F	Sig.
1	Regression	1.016	1	0.016	14.044	0.834 [b]
	Residual	66.429	184	0.361		
	Total	66.445	185			

a. Budgeting for M&E and Implementation of Road Infrastructure Climate Change Projects

b. Predictors: (Constant), Budgeting for M&E

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig (p-value)
		B	Std. Error	Beta		
1	(Constant)	3.364	0.228		14.775	0.000
	Budgeting for M&E	-0.0150	0.071		-.210	0.834

b. Independent Variable: Budgeting for M&E

The Model summary Table 11 suggest that there is a positive correlation (R^2=0.0135) between Budgeting for M&E and Implementation of Road Infrastructure Climate Change Projects and those predicted by the regression model. The ANOVA data shows that F=14.044, Budgeting for M&E was significant in estimating Implementation of Road Infrastructure Climate Change Projects since p=0.034<0.05. Thus, the model was fit in predicting dependent variable. The coefficient data shows that holding other factors constant, Implementation of Road Infrastructure Climate Change Projects would stand at 3.364. A unit rise in the Budgeting for M&E would lead to 0.0150 change in Implementation of Road Infrastructure Climate Change Projects, given that other factors were held constant. The substituted model is:

Model: $Y= 3.364+0.0150X_1+\varepsilon$ where,

Y = Implementation of Road Infrastructure Climate Change Projects

X_1 Budgeting for M&E

ε = Error term.

4.5.5 Discussion on Budgeting for M&E and Implementation of Road Infrastructure Climate Change Projects

The descriptive and correlational data make it clear that there is a relationship between Budgeting for M&E and Implementation of Road Infrastructure Climate Change Projects. The results are consistent with those of other similar empirical studies that suggest Budgeting for M&E affect the success of Implementation of Road Infrastructure Climate Change Projects as stated by (Nelima

(2020) and Campbell (2018).). According to Baer (2022) highlights that availability of direct M&E costs should be designed for at the beginning of a project. That is, ensuring there is a quantifiable amount available for M&E activities independent of project activity costs. According to Baer (2022), this can only be possible if M&E is treated as a standard and required element of the project therefore including M&E costs in funding requests and requiring specific program designs to enable M&E to contribute to policies, strategies and project goals and objectives

4.6 Findings on Dissemination of M&E Reports and Implementation of Road Infrastructure Climate Change Projects

Dissemination of M&E Reports on Implementation of Road Infrastructure Climate Change Projects is the independent variable which is measured by availability of M&E reports disseminating plans, presence of M&E information auditing and verification process and availability of M&E communication plan for stakeholders.

Table 11 Correlation between dissemination of M&E reports and implementation of road infrastructure climate change projects

Variable	Statistics	Implementation of Road Infrastructure Climate Change Projects
Dissemination of M&E Reports	Pearson Correlation	0.487**
	Sig.(2-tailed)	0.007
	N	186

(n=186); **Correlation is significant at 0.05 level (2-tailed)

The study found a weak positive overall correlation 0.487 which was statistically significant as (P-Value=0.007 < 0.05); implying that there is a significant relationship between dissemination of

M&E Reports on Implementation of Road Infrastructure Climate Change Projects, leading to the rejection of the null hypothesis and acceptance of the alternative hypothesis hence the research results conclude that there is significant relationship between dissemination of M&E reports on Implementation of Road Infrastructure Climate Change Projects

4.6.2 Model summary of Dissemination of M&E Reports on Implementation of Road Infrastructure Climate Change Projects

The model sought to determine how dissemination of M&E reports as predictor significantly or insignificantly influenced Implementation of Road Infrastructure Climate Change Projects. Simple linear regression was adapted to investigate how dissemination of M&E reports influences Implementation of Road Infrastructure Climate Change Projects. The regression model summary results are presented in Table 4.10.

Table 12 Regression model summary on dissemination of M&E reports and implementation of road infrastructure climate change projects

Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0. 487[a]	0.237	0.216	0.60049

d. Predicator: (Constant), dissemination of M&E reports

ANOVA

Model		**Sum of Squares**	**Df**	**Mean Squares**	**F**	**Sig.**
1	Regression	0.096	1	0.096	0.266	0.607 [b]
	Residual	66.349	184	0.487		
	Total	66.445	185			

a. Dissemination of M&E Reports and Implementation of Road Infrastructure Climate Change Projects

b. Predictors: (Constant), Dissemination of M&E Reports

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig (p-value)
		B	Std. Error	Beta		
1	(Constant)	3.203	0.226		14.194	0.000
	Dissemination of M&E Reports	0.035	0.068		0.038	0.516

c. Independent Variable: Dissemination of M&E Reports

The Model summary Table 14 suggest that there is a positive correlation (R^2=0.487) between dissemination of M&E reports and Implementation of Road Infrastructure Climate Change Projects and those predicted by the regression model. The ANOVA data shows that F=0.266, dissemination of M&E reports was significant in estimating Implementation of Road Infrastructure Climate Change Projects since p=0.007<0.05. Thus, the model was fit in predicting dependent variable. The coefficient data shows that holding other factors constant, Implementation of Road Infrastructure Climate Change Projects would stand at 3.203. A unit rise in the dissemination of M&E reports would lead to 0.068 change in Implementation of Road Infrastructure Climate Change Projects, given that other factors were held constant. The substituted model is:

Model: $Y= 3.203+0.068X_1+\varepsilon$ where,

Y = Implementation of Road Infrastructure Climate Change Projects

X_1 dissemination of M&E reports

ε = Error term.

4.6.3 Qualitative Data on Dissemination of M&E Reports and Implementation of Road Infrastructure Climate Change Projects

It was discovered that dissemination of M&E reports and Implementation of Road Infrastructure Climate Change Projects, were related to the answers given to the assertions provided at each variable in the interview guide questions. The qualitative responses are summarized,

> *"Dissemination of results is very key however these results are never communicated to the key stakeholders in time or as per the agreement when formulating the projects objectives."*

4.6.4 Discussion on Dissemination of M&E Reports and Implementation of Road Infrastructure Climate Change Projects

The descriptive and correlational data make it clear that there is a relationship between dissemination of M&E reports and Implementation of Road Infrastructure Climate Change Projects. The results are consistent with those of other similar empirical studies that suggest dissemination of M&E reports affect the success of Implementation of Road Infrastructure Climate Change Projects as stated by (Kabonga (2019). As depicted by Kimutai (2019) which examined Nairobi City County public private partnership (PPP) projects and the influence of M&E on their performance**.** The study found that performance of the projects was negatively affected because M&E reports were not disseminated or deliberated upon to inform decision making thus compromising the quality of feedback of the findings.

4.7.3 Discussion on Implementation of Road Infrastructure Climate Change Projects

The descriptive data make it clear that there is a gap on Implementation of Road Infrastructure Climate Change Projects. The results are consistent with those of other similar empirical studies that suggest Implementation of Road Infrastructure Climate Change Projects as stated by Murphy

et al, (2019). For emission reduction, implementation of climate change projects is measured by calculating and analyzing carbon footprint from road transport (Yaacob et al, 2020). The current study found that there are so many factors that contribute to climate change thus affecting road construction projects.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

The results of the data analysis are summarized and given in the current chapter. There are also recommendations and potential areas for further research, as well as inferences drawn from the findings in this chapter.

5.2 Summary of Findings

The findings are hereby summarized based on the research objectives.

5.2.1 To assess the influence of planning for M&E practices on implementation of road infrastructure climate change projects in Kenya

The descriptive analysis revealed that the overall composite mean for the six items was 3.24 and standard deviation of 1.32 which implied that most of the respondents agreed that Planning for monitoring and evaluation practices influence implementation of road infrastructure climate change projects in Kenya. The correlation coefficient was 0.354 which implied that Planning for monitoring and evaluation practices ability had a weak positive relationship with implementation of road infrastructure climate change projects in Kenya ($p=0.027 <0.05$). This led to the rejection of the null hypothesis because there was strong evidence to conclude that project planning has a significant influence implementation of road infrastructure climate change projects in Kenya.

5.2.2 To establish the influence of M&E budgeting practices on implementation of road infrastructure climate change projects in Kenya

The descriptive analysis revealed that the overall composite mean for the four items was 3.15 and standard deviation of 1.29 which implied that most of the respondents agreed that budgeting practices influenced implementation of road infrastructure climate change projects in Kenya. The

correlation coefficient was 0.368 which implied that budgeting practices had a weak positive relationship with implementation of road infrastructure climate change projects in Kenya ($p=0.034 <0.05$). This led to the rejection of the null hypothesis because there was strong evidence to conclude that budgeting practices has a significant influence implementation of road infrastructure climate change projects in Kenya

5.2.3 To determine how dissemination of M&E reports on implementation of road infrastructure climate change projects in Kenya

The descriptive analysis revealed that the overall composite mean for the four items was 3.25 and standard deviation of 1.35 which implied that most of the respondents agreed dissemination of M&E reports influenced implementation of road infrastructure climate change projects in Kenya. The correlation coefficient was 0.487 which implied that data collection had a weak positive relationship with implementation of road infrastructure climate change projects in Kenya ($p=0.007 <0.05$). This led to the rejection of the null hypothesis because there was strong evidence to conclude that dissemination of M&E reports has a significant influence implementation of road infrastructure climate change projects in Kenya**.**

5.3 Conclusions from the Findings

In the first objective, the study establishes how Planning for M&E influence implementation of road infrastructure climate change projects in Kenya. The findings generated from both descriptive and inferential analysis leads to the conclusion that planning for M&E influence implementation of road infrastructure climate change projects in Kenya

The second objective, to assess how budgeting practices influence implementation of road infrastructure climate change projects in Kenya. The findings generated from both descriptive and

inferential analysis leads to the conclusion that contractor budgeting practices influence implementation of road infrastructure climate change projects in Kenya.

The third objective, to assess how data collection influence dissemination of M&E reports influence implementation of road infrastructure climate change projects in Kenya. The findings generated from both descriptive and inferential analysis leads to the conclusion that dissemination of M&E reports influence implementation of road infrastructure climate change projects in Kenya.

5.4 Recommendations from the Findings

The following recommendations are based from the findings and conclusions of the study.

5.4.1 Recommendation for Practice

Road contractors need to improve on the practices of planning and management of resources through alignment of organizations and agents with project needs for good delivery services on climate change infrastructure.

5.4.2 Recommendation for Policy

National government's needs to formulate policies and laws that govern use of road construction services to the community and be able to sustain the already existing services performed contractors and engineers.

5.4.3 Recommendation for Methodology

Future methodologies need to take this into account in order to learn more about how the variables interact holistically. Future methodologies must also triangulate various approaches to planning, budget preparations, and result dissemination for M&E.

5.5 Suggestions for Further Study

The current study recommends more studies to be carried out on the areas which were not included in the current study like, routine motoring program, logical framework and data management which are in line with the steps of monitoring and evaluation practices.

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ANNEX I: RESEARCH QUESTIONNAIRE

As per the African Nazarene University's approval, this questionnaire intends to gather information for academic research **Monitoring and Evaluation Practices and Implementation of Climate Change Projects in Kenya: A Case of State Department for Road Infrastructure Projects in Nairobi County Kenya.**

Kindly respond by selecting the responses or providing a comment in the relevant areas. All information provided will be treated with confidentiality and will be used purely for the purpose of this study.

PART I: Personal and Demographic Data

SECTION ONE

Please complete the following section which asks for information concerning you and your work. Kindly answer all the questions.

1. Gender *(Kindly tick)*: Male ☐ Female ☐
2. Kindly tick your age bracket Age: Below 30 ☐ 30 – 39 ☐ 40 - 49 ☐ 50 - 59 Above 60 ☐
3. Marital status**:** Single ☐ Married ☐ Other *(kindly specify your status)*:
4. Number of years worked in the Company**:** 5 years and below ☐ 6 – 10 11– 15 ☐ 16-20 ☐ 21- Above
5. Please select the highest level of educational qualification you hold from below

   Bachelor's degree ☐

   Master's degree ☐

   Diploma ☐

   Certificate

   Others ☐

7. Your current designation (Please tick as appropriate).

   Senior Management Staff ☐

   ☐

Middle Level Management

Low Level Management ☐

SECTION B: PLANNING FOR M&E AND IMPLEMENTATION OF ROAD INFRASTRUCTURE CLIMATE CHANGE PROJECTS

For each statement below, kindly indicate the extent to which you agree or disagree by selecting a category that corresponds your desire using a scale of 1 to 5 where: 5=strongly agree **(SA)**, 4=Agree **(A),** 3 Neutral, 2=Disagree **(D)** and 1=strongly disagree **(SD)**

Statement	**SD**	**(D)**	**N**	**Agree**	**SA**
1. There is a project logic model for the road infrastructure climate change projects developed with inputs, outputs, activities, outputs and outcomes					
2. M&E frameworks need to be developed in a participatory manner to include all key stakeholders for a project to be successful					
3. Baseline surveys are essential for each climate change project to provide a basis against which progress and impact will be measured	☐	☐	☐	☐	☐
4. Project work plans play a crucial role to guides climate change project implementation, including tracking progress and evaluating results	☐	☐	☐	☐	☐
5. Project work plans require regular reviewing to guide project implementation decision making such as resource allocation					
6. All key stakeholders are consulted during climate change project implementation monitoring and evaluation	☐	☐	☐	☐	☐

Briefly explain any of the above statements to support your answers ----------

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SECTION C: Budgeting for M&E on Implementation of Road Infrastructure Climate Change Projects

Statement	SD	D	N	A	SA
1. Monitoring and Evaluation budget allocation was made for the road infrastructure climate change projects	☐	☐	☐	☐	☐
2. Availability of resources and M&E spending plan is always planned and ready					
3. Monitoring and Evaluation budget use is guided by a spending plan	☐	☐	☐	☐	☐
4. Monitoring and evaluation staff members have been appointed to ensure road infrastructure projects are implemented successfully	☐	☐	☐	☐	☐

For statement **3. B.** above, indicate how many staff have been assigned to monitor and evaluate road infrastructure climate change projects

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SECTION D: Dissemination of M&E Reports on Implementation of Road Infrastructure Climate Change Projects

Statement	SD	D	N	A	SA)
1. The state department M&E report dissemination plan/process is in place	☐	☐	☐	☐	☐
2. M&E report dissemination to key stakeholders play a crucial role to inform project implementation					
3. There is a quality assurance process to audit and verify M&E collected information before dissemination	☐	☐	☐	☐	☐

4. The department has a communication plan to disseminate M&E reports to all key stakeholders	☐	☐	☐	☐	☐

Briefly explain any of the above statements to support your answers

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SECTION E: IMPLEMENTATION OF ROAD INFRASTRUCTURE CLIMATE CHANGE PROJECTS

Statement	**SD**	**D**	**N**	**A**	**SA)**
1. The allocated for the projects of state department M&E is sufficient	☐	☐	☐	☐	☐
2. There are quality interventions on projects which are being implemented					
3. M&E standards are adhered to by the key stakeholders who play a crucial role to inform project managers and clientele					
4. The stakeholders are satisfied with the project implementation which is ongoing despite the challenges	☐	☐	☐	☐	☐
5. The set of objectives and number of deliverables were achieved as per the planned activities	☐	☐	☐	☐	☐

ANNEX II: RESEARCH APPROVALS

3rd, September, 2023

E-mail: researchwriting.mba.anu@gmail.com

Tel. 0202711213

*Our Ref:*110062189

The Director.

National Commission for Science,

Technology and Innovation (NACOSTI),

P. O. Box 30623, 00100

Nairobi. Kenya.

Dear Sir/Madam:

RE: RESEARCH AUTHORIZATION FOR: CAROL MUTISO

Ms. Carol is a postgraduate student at Africa Nazarene University in the Master of Monitoring and Evaluation (MME) program. In order to complete his program, Ms. Carol is conducting research entitled: " **Monitoring and Evaluation Practices and Implementation of Climate Change Projects in Kenya: A Case of State Department for Road Infrastructure Projects in Nairobi County Kenya."**

Any assistance offered to her will be highly appreciated.

Yours Faithfully,



DR. Wanjiru Nderitu

Monitoring and Evaluation, School of Business,

Africa Nazarene University.

MINISTRY OF ROADS AND TRANSPORT
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NAIROBI

Ref.

DATE:12.01.2024

TO WHOM IT MAY CONCERN

SUBJECT: DATA COLLECTION BY CAROL MUTISO

The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) has partnered with the Government through the state department for transport on various transport climate change related projects as part of the state department's contribution to climate change mitigation and adaptation in Kenya. Through this partnership, we accord data collection authorization to **Carol Mutiso** who is doing a research as part of her postgraduate program **at Africa Nazarene University in the Master of Business ~~Administration~~** Monitoring and Evaluation (MME) **(~~MBA~~)** for a period ending **July 31st, 2024.**

It is expected that the ministry will benefit from the research findings.

On completing your research, kindly submit a copy of your thesis to our office, to inform uptake of key recommendations relevant to climate change projects within the state department.

For

Paul King'ori
Director, Road and Rail
State Department for Transport
For: PRINCIPAL SECRETARY

Encl.