INFLUENCE OF PROJECT MONITORING PRACTICES ON THE IMPLEMENTATION OF ROAD PROJECTS IN NAKURU COUNTY, KENYA

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A Thesis Submitted to the Institute of Postgraduate Studies of Kabarak University in Partial Fulfilment of the Requirements for the Award of Master of Science in Project Management Degree

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The thesis entitled **"Influence of Project Monitoring Practices on the Implementation of Road Projects in Nakuru County, Kenya,"** written by **Julius K. Simotwo,** is presented to the Institute of Postgraduate Studies of Kabarak University. We have reviewed the research project and recommend it to be accepted in partial fulfillment of the requirement for the award of Master of Science in Project Management.

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ABSTRACT

Road projects are critical for socio-economic development, connecting communities and facilitating trade. In Kenya, the state of road infrastructure presented significant challenges, with 37.01% of roads in poor condition. This study examined the influence of project monitoring practices on the implementation of road projects in Nakuru County, Kenya. Specifically, it determined the influence of performance monitoring, evaluated the influence of quality monitoring, assessed the influence of stakeholder monitoring, and established the influence of report monitoring on road project implementation. The study was anchored in four theories: the Resource-Based View Theory, the Quality Management Theory, the Stakeholder Theory, and the Communication Theory of Organizational Effectiveness. A correlational research design was employed, targeting 447 stakeholders involved in road project implementation, including senior county officials, ward infrastructure coordinators, road engineers, members of the county assembly, and the public. Using proportionate stratified random sampling, 211 respondents were selected. Data were collected using structured questionnaires and analyzed using descriptive statistics (means and standard deviations) and inferential statistics (simple linear regression) in SPSS version 26.0. Descriptive results indicated moderate levels of adherence to performance ($M = 3.02$, $SD = 1.377$), quality ($M = 2.88$, $SD = 1.459$), and stakeholder ($M = 2.79$, $SD = 1.440$) monitoring practices, while report monitoring showed slightly higher consistency ($M = 2.62$, $SD = 1.418$). Correlation and regression analyses confirmed that all four practices significantly influenced road project implementation. Performance Monitoring Practices had a moderate positive effect ($\beta = 0.489$, $r = 0.527$, $p < 0.001$), Quality Monitoring Practices also showed a moderate impact ($\beta = 0.512$, $r = 0.538$, $p < 0.001$), Stakeholder Monitoring Practices demonstrated a strong effect ($\beta = 0.614$, $r = 0.600$, $p < 0.001$), and Report Monitoring Practices exhibited the strongest influence ($\beta = 0.892$, $r = 0.753$, $p < 0.001$). Consequently, all null hypotheses were rejected. The study concludes that structured project monitoring significantly enhances road project implementation in Nakuru County, with reporting practices being the most influential. Policy and practice recommendations include adopting standardized KPIs, implementing regular quality assurance protocols, establishing structured stakeholder engagement frameworks, and using standardized reporting templates supported by digital tools. The findings provide actionable insights for county governments, project managers, and road agencies aiming to improve infrastructure delivery and project sustainability.

Keywords: *Performance Monitoring, Quality monitoring, Stakeholder Monitoring, Project Report Monitoring, Monitoring Practices, Road Projects, Project Implementation, Nakuru County*

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LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis of Variance
APA	American Psychological Association
CDF	Constituencies Development Fund
GDP	Gross Domestic Product
IRLM	The Implementation Research Logic Model
JICA	Japan International Cooperation Agency
KeNHA	Kenya National Highways Authority
KMO	Kaiser-Meyer-Olkin
M & E	Monitoring and Evaluation
RBV	Resource-Based View
SPSS	Statistical Package for Social Sciences
UN-Habitat	The United Nations Human Settlements Programme

CONCEPTUAL AND OPERATIONAL DEFINITION OF TERMS

Implementation of Road Projects: Implementation of road projects refers to the execution phase, during which planned road construction activities are carried out to achieve predetermined objectives (Delise, 2023). In this study, it is operationalized through adherence to timelines, maintenance of costs within budget, and ensuring project longevity in Nakuru County.

Influence: Influence denotes the degree to which one factor or activity produces an effect or change in another variable (Obuya & Maina, 2022). In this study, it reflects the extent to which project monitoring practices affect the success or failure of road project implementation within Nakuru County.

Monitoring Practices: Monitoring practices involve systematic and continuous assessment of project activities to ensure alignment with objectives and performance standards (Sserwanga *et al*., 2023). In this study, they encompass performance monitoring, quality monitoring, stakeholder monitoring, and report monitoring as key independent variables

Performance Monitoring Practice: Performance monitoring refers to the ongoing process of measuring project outputs against planned targets to ensure efficiency and accountability (Plane, 2023). This study measures it using schedule adherence, budget compliance, and adherence to procedures in road projects.

Project: A project is a temporary, goal-oriented effort designed to create a unique product, service, or result within defined constraints (PMI, 2021). In this study, the term specifically denotes road construction and maintenance activities undertaken in Nakuru County, funded by the government and development partners.

Quality Monitoring Practice: Quality monitoring ensures that project outputs meet the required standards and specifications throughout implementation (Issifu *et al*., 2023). This study operationalizes it through adherence to standards, process control, and material quality in road construction

Report Monitoring Practice: Report monitoring is the systematic process of collecting, analyzing, and communicating progress information during project execution (Treasury of Kenya, 2021). In this study, timeliness, frequency, and clarity of project reports produced for Nakuru County road projects are defined.

Road Projects: Road projects involve planning, design, construction, and maintenance to enhance transportation and connectivity (Makori & Mwaura, 2022). This study focuses on county and national road infrastructure projects implemented in Nakuru County.

Stakeholder Monitoring Practice: Stakeholder monitoring involves identifying, engaging, and tracking stakeholders to ensure their expectations and concerns are addressed throughout the project lifecycle (Suvvari & Saxena, 2023). This study evaluates it using frequency of engagement, level of involvement, and responsiveness to stakeholder concerns

Project Monitoring: Project monitoring is the continuous assessment of project implementation to provide managers and stakeholders with early indications of progress and potential challenges (Nyambura & Otieno, 2023). In this study, it includes the four key practices performance, quality, stakeholder, and report monitoring that collectively influence project outcomes.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Road infrastructure is one of the pillars of socio-economic development, as it underpins transportation systems and global economic connectivity. According to Sluijs (2023), a well-developed road network brings communities together through shared basic services. Martoccio (2022) notes that road infrastructure improves emergency response times and population safety. These are some of the advantages that underscore the critical role of road infrastructure in promoting sustainable growth and economic success.

The socio-economic influence of road infrastructure is not limited to facilitating transport; it extends far to provide broader development services. According to Collinson *et al*. (2019), road projects are very crucial in environmental sustainability when well-planned and implemented. As noted by Mas-Lopez (2023), contemporary road infrastructure integrates green technologies and green design principles, which can help improve carbon emissions and environmental performance. Rehman *et al*. (2023) note that road development infrastructure drives urbanization, as it helps create new business districts and residential zones. Additionally, Melo *et al*. (2022) focus on the fact that investment in road infrastructure has a multiplier effect on the economy, promoting growth across many industries and stabilizing employment. This overall effect explains the transformative nature of road infrastructure projects through development and economic growth.

Monitoring and evaluation practices in the United States have greatly contributed to the implementation of road projects by incorporating systematic project oversight. LaJeunesse *et al*. (2018) note that performance monitoring is an essential element of road

infrastructure projects, and the Federal Highway Administration has stringent frameworks for determining project effectiveness. The outcomes of the strategies include improved road infrastructure quality, lower maintenance costs, and increased user safety (Mas-Lopez 2023). According to Song *et al*. (2021), the combination of stakeholder engagement practices has led to more favorable community responses and opposition to the infrastructure projects. The combined effect of these practices has changed the way road projects are implemented in the United States and has set a precedent for other countries.

The monitoring and evaluation practices have impacted road projects in Australia through extensive quality monitoring systems. Rehman *et al*. (2023) state that the Australian Road Research Board has developed quality control protocols for road construction. According to Thusi (2023), the quality monitoring practices have greatly enhanced the safety and long-term durability of road infrastructure projects. Melo *et al*. (2022) highlight stakeholder engagement practices and how they have been incorporated into the Australian road projects, enhancing community support and acceptance. Moreover, Collinson *et al*. (2019) point out that intensive reporting mechanisms have increased transparency and accountability in infrastructure projects.

In Canada, monitoring and evaluation practices have played a significant role in improving the implementation of road projects through systematic project management. According to Nugroho (2022), systematic reporting practices have improved decision-making and resource allocation in large infrastructure projects. All these measures have led to the Canadian government successfully providing efficient and sustainable road infrastructure.

Monitoring and evaluation practices in Nigeria have shown success in infrastructure development. Nyanduku (2023) reported that performance-monitoring programmes

implemented by the Federal Ministry of Works and Housing have led to improvements in project delivery and turnaround times. According to Kaluai and Muathe (2020), the need to implement standardized testing protocols and inspection procedures has reinforced the quality monitoring practices. Ogundari and Otuyemi (2019) emphasize changes in stakeholder engagement practices to accommodate community concerns and improve project acceptance. Gebreyohannes (2024) mentions that improved reporting systems in infrastructure development have led to increased project oversight and accountability. All these practices have contributed to the better implementation of road projects in the Nigerian context.

In South Africa, monitoring and evaluation practices have proved instrumental in the implementation of road projects. The country's road agency, the South African National Roads Agency (SANRAL), has put in place elaborate performance monitoring systems that have greatly enhanced the efficiency and outcomes of infrastructure projects (Thusi 2023). Collinson *et al*. (2019) highlight the impact of quality monitoring practices, especially material testing and construction oversight, on the durability of road infrastructure. According to Rehman *et al*. (2023), stakeholder engagement practices have been modified to promote societal inclusion and involvement in road projects. Moreover, Melo *et al*. (2022) indicated that robust reporting systems have enhanced transparency and accountability in road development infrastructure. All these practices have enabled South Africa to earn a reputation for providing high-quality road infrastructure projects that meet technical standards and the needs of its users.

In Ghana, the Ministry of Roads and Highways introduced extensive performance-monitoring systems that track road progress and enhance project results (Nugroho, 2022). In addition, stakeholder engagement programmes have enhanced community acceptance of road development projects (Martoccio, 2022). Gebreyohannes (2024)

observes that decision-making and resource allocation in infrastructure projects have become easier due to improved reporting systems. In general, monitoring and evaluation practices have greatly enhanced the efficiency and effectiveness of road project infrastructure in Ghana.

Monitoring and evaluation practices in Uganda have improved infrastructure development through the application of structured performance-monitoring approaches. Kaluai and Muathe (2020) note that the Uganda National Roads Authority has put in place elaborate performance monitoring systems that have enhanced project delivery schedules and cost management. Ogundari and Otuyemi (2019) emphasize how quality monitoring practices have contributed to higher quality standards. According to LaJeunesse *et al*. (2018), stakeholder engagement practices have attracted community support and acceptance. Sluijs (2023) has observed that reporting has enhanced project oversight and accountability. All these practices have led to improved performance in road infrastructure development in Uganda's ever-expanding transportation sector.

Monitoring and evaluation practices have played a significant role in Tanzania's road infrastructure development. The practices have facilitated the implementation of road projects through structured methodologies. Más-López (2023) states that standardized testing and inspection protocols have reinforced the quality of monitoring practices. Song *et al*. (2021) stress the importance of stakeholder involvement for project acceptance. In addition, Nyanduku (2023) points out that a comprehensive reporting mechanism has assisted in managing the project and resource distribution. All these practices have improved road infrastructure development in Tanzania's growing transport industry.

In Kenya, road infrastructure is critical to the country's socio-economic development, especially in fast-developing areas such as Nakuru County. Ngugi (2017) states that road

transport accounts for about 80 percent of the country's total freight traffic, underscoring the importance of its successful implementation.

1.1.1 Project Monitoring Practices

The study's independent variables included performance monitoring, quality monitoring, stakeholder monitoring, and report monitoring practices. The practices are critical for examining the challenges to implementing the road projects. Kaluai and Muathe (2020) reveal that performance monitoring enables systematic project tracking and early problem identification. Nguyen (2024) emphasizes the importance of stakeholder involvement in developing ownership of projects and gaining community support, whereas Gebreyohannes (2024) focuses on efficient reporting mechanisms that promote transparency and accountability. Holistically, these monitoring and evaluation practices provide a basis for enhancing project outcomes to achieve sustainable infrastructure development.

Performance monitoring involves systematically assessing projects against their set objectives. Nyanduku (2023) defines performance monitoring as a process that entails ongoing evaluation of project milestones, resources, and schedule to guarantee effective project delivery. Kaluai and Muathe (2020) refined the definition, noting that key performance indicators (KPIs) are essential for assessing project progress and detecting potential problems. Ogundari and Otuyemi (2019) define performance monitoring as an inclusive system that uses both quantitative (e.g., completion rates) and qualitative measures (e.g., work quality and safety compliance). This is a complex system of performance monitoring that allows project managers to maintain control over project implementation and apply timely intervention where necessary.

Performance monitoring in road projects involves using various tools and methodologies to assess project progress. Collinson *et al.* (2019) suggest that some measurement

parameters include the schedule performance index (SPI), the cost performance index (CPI), and earned value metrics, which can provide a quantitative understanding of the project's progress. LaJeunesse *et al*. (2018) emphasize the importance of digital monitoring tools and project management software to support real-time performance tracking and analysis. In addition, Rehman *et al*. (2023) emphasize that it is important to have baseline measurements and performance benchmarks on which the progress of a project can be compared. All these measurement methods provide tools for analyzing project performance and suggestions for further improvement.

The influence of performance monitoring on project implementation occurs through different pathways. According to Melo *et al*. (2022), performance monitoring enables the early identification of problems and their proactive addressing, so that minor issues do not develop into major ones later. Más-Lopez (2023) has shown that well-developed performance monitoring systems help allocate and use resources efficiently, resulting in more efficient project implementation. Sluijs (2023), reports that performance monitoring improves project control and accountability through tracking. Thusi (2023) observes that performance monitoring is beneficial for ensuring that stakeholders remain confident, as it provides unbiased information on project progress. All these practices provide efficient project implementation and better results.

Quality monitoring involves ensuring compliance with the set quality standards and specifications. Song *et al*. (2021) define quality monitoring as the inspection, checking, and control of construction materials, workmanship, and technical specifications at all project phases. This definition is extended by Collinson *et al*. (2019), who introduced the aspects of environmental compliance and sustainability into the quality monitoring model. Thusi (2023) points out that quality monitoring is a complex process that incorporates the technical inspection aspects, safety assessment standards, and risk

management in construction. These holistic quality assurance methodologies ensure that road projects meet technical specifications and support wider sustainability goals and public safety.

A variety of tools, techniques, and methodologies are applied to measure quality in the implementation of road projects. Rehman *et al*. (2023) state that quality control needs to incorporate standardized testing procedures and quality assurance to ensure consistent quality measurement and evaluation. Moreover, Melo et al. (2022) emphasize the importance of quality measures and performance indicators for monitoring and evaluating the efficiency of quality monitoring activities. All these measurement strategies present a powerful set of quality evaluation results.

The concept of quality monitoring is critical to the implementation of road projects through several mechanisms. According to Nugroho (2022), quality monitoring practices are effective in improving the durability and lifespan of road infrastructure, leading to reduced maintenance demand. Martoccio (2022) highlights the importance of quality monitoring as a means of maintaining stakeholders' confidence through clear documentation and ensuring that the quality aspects of construction projects can be verified. Gebreyohannes (2024) notes that quality monitoring systems, in their entirety, help manage risks and address issues in project implementation. All these influences positively influence outcomes and improve sustainability.

Stakeholder monitoring in road projects involves the important process of identifying, engaging, and managing relationships with the various stakeholders throughout project implementation. According to Kaluai and Muathe (2020), stakeholder engagement helps establish and sustain efficient relationships with project beneficiaries, regulatory bodies, and implementing agencies. Sluijs (2023) defines stakeholder engagement to include participatory decision-making and inclusive project governance. Moreover, LaJeunesse

et al. (2018) also indicate that stakeholder engagement entails both the sharing of information and participation in the project planning and execution. Such an inclusive strategy ensures that road projects take into consideration the needs of all concerned parties.

Stakeholder monitoring in road projects is measured using various dimensions and indicators that assess the quality and success of the stakeholder relationship. Más-López (2023) states that good measurement systems include stakeholder satisfaction surveys, community feedback systems, and records of stakeholder interactions throughout the project lifecycle. According to Martoccio (2022), it is important to monitor stakeholder engagement in critical project decisions and to evaluate the efficiency of communication networks. Moreover, Thusi (2023) emphasizes the importance of tracking the mood and quality of relationships with stakeholders using structured assessment instruments and frequent reviews. These assessment tools provide useful information on the effectiveness of stakeholder engagement strategies and their impact on project implementation.

Stakeholder monitoring plays a major role in implementing road projects in numerous ways that make projects successful and sustainable. Collinson *et al*. (2019) hold that when stakeholders are engaged effectively, the design and implementation of projects are improved because different viewpoints and experiences are applied to project planning. As illustrated by Rehman, Shafiq, Ullah, and Ahmed (2023), effective stakeholder engagement practices can help minimize delays and conflicts in projects by proactively resolving concerns and preventing the escalation of issues. Nugroho (2022) notes that extensive stakeholder involvement eases the risk management process and problem-solving during implementation. All these factors ensure better project outcomes and increased recognition and acceptance by communities.

Report monitoring involves systematic processes for recording, examining, and conveying project data to different stakeholders. According to Gebreyohannes (2024), efficient reporting is defined by the routine gathering and sharing of project performance data, updates on its progress, and accountability information to support decision-making. According to Nguyen (2024), reporting is an organized process for documenting project activities, achievements, and challenges, leading to transparency in project implementation. Nyanduku (2023) broadens this definition to include data-driven reporting systems that support the use of evidence-based project management. Kaluai and Muathe (2020) stress the need for comprehensive reporting on technical and non-technical aspects of project implementation. It is a complex reporting strategy because all stakeholders will receive pertinent, timely information on project performance and progress.

There are critical indicators and assessment tools used to measure reporting effectiveness. Ogundari and Otuyemi (2019) state that the main parameters include the completeness, accuracy, timeliness, and accessibility of reports to interested parties. Sluijs (2023) also notes that digital reporting tools and platforms can be used to streamline data collection and distribution. Moreover, LaJeunesse *et al*. (2018) emphasize the importance of clear reporting structures and feedback channels to ensure the proper flow of information. All these measurement strategies present models for measuring and improving reporting metrics during the implementation of road projects.

Report monitoring practices influence the transparency and effectiveness of road project implementation in different ways. Melo *et al*. (2022) show that efficient reporting practices can improve decision-making and resource allocation by providing relevant, precise project information. Más-Lopez (2023) points out that effective reporting structures are important in creating trust and credibility in the projects with the public by

allowing open communication of the project results. Thusi (2023) explains that systematic reporting enhances knowledge management and learning of the project process. All these factors play a role in better project implementation and accountability.

1.1.2 Road Project Implementation

The dependent variable in this study, road project implementation, is a multidimensional variable that has been defined differently in the literature. Kaluai and Muathe (2020) define project implementation as a systematic process of carrying out all activities outlined in the plan, including resource allocation, management of the timeline, and enforcement of quality control. Nugroho's (2022) perspective on implementation focuses on achieving set project goals and deliverables. Moreover, Gebreyohannes (2024) indicates that monitoring and control systems are extremely important for successful project implementation. Nguyen (2024) also expounds on the implementation framework by introducing the concepts of sustainability and long-term viability, as it is necessary to consider the economic, social, and environmental factors in the project lifecycle in a balanced way.

The road project implementation measurement and evaluation process is a multidimensional process that reflects the complexity of infrastructure development. The issue of quantifiable measures, e.g., completion rates, budget adherence, and quality standards, is highlighted by Thusi (2023) as crucial in evaluating successful implementation. Sluijs (2023) finds that a combination of technical performance and stakeholder satisfaction metrics can be used to measure implementation effectiveness. According to LaJeunesse *et al*. (2018), a holistic framework that encompasses both tangible deliverables (e.g., construction quality and compliance with the schedule) and intangible ones (e.g., community impact and environmental sustainability) should be

proposed. Also, Más-Lopez (2023) recommends using long-term sustainability and resilience as measures of implementation success.

The implementation of road projects is associated with challenges that may significantly affect the project's outcome and success. Collinson *et al*. (2019) offer one of the main problems as a lack of appropriate stakeholder engagement and communication, which results in conflicts between the project aims and the needs of the community. According to Nugroho (2022), the cost of technical issues related to quality control and compliance with construction standards is also a significant problem, underscoring the need for comprehensive monitoring systems. Also, as Martocchio (2022) notes, the project implementation is complicated by environmental compliance and sustainability requirements. These problems are exacerbated by the need to manage multiple competing priorities while keeping the project efficient and effective.

Systemic problems in the construction industry add to the complexity of implementing road projects. According to Rehman *et al*. (2023), challenges arise from the effective coordination of multiple stakeholders and the management of conflicting interests in the project lifecycle. In addition, external factors that affect project implementation include weather conditions, market changes, and regulatory changes (Melo *et al*. 2022). These complex issues create a necessity for robust frameworks to improve the effectiveness of project implementation.

In Nakuru County, the County Government of Nakuru (2024) reports that the Roret-Quarry-RVIST Road in Mosop Ward was almost impassable for close to 30 years, seriously impacting residents' accessibility and the transportation of people and goods. Nyanduku (2023), notes that these delays were occasioned by poor funding and ineffective project management strategies. According to the County Government of Nakuru (2024), some challenges recorded in projects such as Mulwang Road in Soin

Ward include funding constraints, failure to adhere to construction schedules, and ineffective stakeholder engagement. Moreover, Thusi (2023) stresses that problems linked to coordination and quality control measures are the recipe for unwanted construction outcomes. All these challenges highlight the significance of robust monitoring and evaluation practices for road infrastructure projects in contexts such as Nakuru County.

Many studies have explored different approaches to road project implementation in Kenya. The results have pointed out significant research gaps. For instance, Melo *et al*. (2022) examined the role of stakeholder involvement in an urban road transport infrastructure project and emphasized the need for more formal engagement models. The County Government of Nakuru (2024) records that infrastructural developments, such as the Anti-Stock-Theft Road in Mau-Narok Ward, require extensive groundwork and coordinated project management. Nugroho (2022) assessed reporting practices in infrastructure projects and found inconsistencies in adherence to recording and communication standards. These studies, however, have failed to fully consider the combined impact of monitoring and evaluation practices on road project implementation contexts such as Nakuru County.

Kenya's nature is characterized by the importance of road infrastructure to the country's socio-economic development, as it enables the transport of goods and services, spurs trade, and improves connectivity in the region. Kaluai and Muathe (2020) observe that efficient road networks can play a significant role in economic growth by reducing transport costs and increasing market accessibility. Nevertheless, despite the large amount of government spending on roads, (2023) states that 37.01 percent of the road network is in a depleted state, requiring serious repair. Such degradation has serious

consequences for the network's efficiency and reliability, affecting economic activities and people's safety.

1.1.3 Road Projects in the County Government of Nakuru

The County Government of Nakuru is the main body responsible for planning, financing, and executing road infrastructure projects in Nakuru County, which is one of Kenya's major economic centers with a flourishing agricultural and tourism industry. The County Government is an entity under the devolved government system created by the Kenyan Constitution of 2010 to run a portfolio comprising more than 60 road projects, including rural access roads and urban upgrades to improve connectivity and foster economic development (County Government of Nakuru, 2024). The County Government's partnership with other road agencies, such as the Kenya National Highways Authority (KeNHA), makes it important as the central organization to examine monitoring and evaluation practices in road project implementation.

The County Government faces significant funding constraints in implementing road projects. According to a report by the County of Nakuru (2024), 40 percent of road projects experience delays of more than 18 months due to insufficient budgetary allocation, resulting in an annual loss of $18 million in terms of disrupted trade and movement. The increase in construction material costs, which has risen by 20 percent since 2021, also puts pressure on project budgets, constraining the extent of development of essential infrastructure (Nyanduku, 2023). Such financial difficulties are aggravated by the sporadic release of government funds at the national level, as 30 percent of projects are underfunded by a quarter, preventing them from being completed in time (Thusi, 2023).

The quality control problems have a significant impact on the quality and durability of road infrastructure projects in Nakuru. According to the 2023 infrastructure assessment

of the County Government, a quarter of the already constructed roads needed repair within 2 years due to poor construction practices, which increased maintenance costs by 25 percent (County Government of Nakuru, 2024). Technical capacity is also limited, and only 55 percent of projects hire qualified engineers, which is one of the reasons for poor-quality lapses, as Gebreyohannes (2024) notes.

Stakeholder coordination is one of the main obstacles, and a lack of sufficient engagement often results in project disruptions. A 2024 survey of the county estimated that 32% of road projects faced community resistance due to a lack of proper consultation, leading to project delays averaging 15 months (County Government of Nakuru, 2024). The absence of frequent stakeholder forums contributess to conflict over land use and project priorities, since only 40% of the projects considered community input, as observed by Sluijs (2023). Such coordination gaps, as well as the lack of standardized monitoring systems in 45 percent of projects, underscore the need to introduce integrated monitoring and evaluation practices to enhance implementation outcomes in Nakuru County (Nguyen, 2024).

The implementation challenges in Nakuru County's road projects are particularly evident in specific cases. The County Government of Nakuru (2024) reports that the Roret-Quarry-RVIST Road remained impassable for nearly three decades, significantly hindering community access and economic activities. Similar challenges have been documented in the Mulwang Road project and the Anti-stock-theft Road development, where issues of project delays, funding constraints, and stakeholder coordination have impacted implementation effectiveness. Thusi (2023) attributes such implementation challenges to inadequate monitoring and evaluation practices, while Rehman *et al*. (2023) emphasize the need for more robust project oversight mechanisms.

The study aims to address these research gaps by investigating the comprehensive influence of monitoring and evaluation practices on road project implementation in Nakuru County, Kenya.

1.2 Statement of the Problem

Road infrastructure plays a critical role in fostering economic growth, enhancing mobility, and supporting social development in Nakuru County, Kenya. Despite significant investments over the last five years, several road projects have experienced implementation challenges, including delays, cost overruns, and premature deterioration. For instance, roads such as Stadium, Flamingo, and Mumias have faced delays, negatively affecting transport efficiency and socio-economic activities (County Government of Nakuru, 2024). Moreover, a 2024 county report reveals that 40% of road projects are delayed by at least 18 months due to inadequate budgetary allocations, and that 28% of completed roads require repairs within 2 years due to substandard construction practices. Office of the Auditor General reports (2024) have highlighted delays in the execution of infrastructure projects and expressed concerns about the lack of strategies for the way forward.

Previous studies in Kenya have approached road infrastructure development from various perspectives, revealing significant research gaps. Performance monitoring research by Kaluai and Muathe (2020) and Nyanduku (2023) converge on the importance of systematic project tracking but diverge on implementation methodologies. Studies on quality monitoring by Melo *et al*. (2022) highlight the need for standardized monitoring practices, though they differ in their recommended approaches. Stakeholder engagement challenges, as indicated by the County Government of Nakuru reports (2024), require effective strategies for involvement, while Más-López (2023) focuses on institutional stakeholder dynamics. Recent work on reporting practices by

Gebreyohannes (2024) and Rehman *et al*. (2023) demonstrates evolving documentation requirements, though their proposed frameworks differ.

These studies reveal critical gaps in understanding how performance monitoring influences project timelines and cost management, how quality monitoring impacts construction standards, how stakeholder engagement affects project sustainability, and how reporting practices influence accountability in Nakuru County's road projects. The current study aims to address these gaps by examining the influence of project monitoring practices on the implementation of road projects in Nakuru County, specifically focusing on performance, quality, stakeholder, and reporting monitoring practices, to provide evidence-based recommendations for improving road infrastructure development outcomes.

1.3 Objectives of the Study

1.3.1 General Objective of the Study

The general objective of this study was to examine the influence of project monitoring practices on the implementation of road projects in Nakuru County, Kenya.

1.3.2 Specific Objectives of the Study

i. To determine the influence of performance monitoring practice on the implementation of road projects in Nakuru County, Kenya.

ii. To evaluate the influence of quality monitoring practice on the implementation of road projects in Nakuru County, Kenya.

iii. To assess the influence of stakeholder monitoring practice on the implementation of road projects in Nakuru County, Kenya.

iv. To establish the influence of report monitoring practice on the implementation of road projects in Nakuru County, Kenya.

1.4 Research Hypotheses

$H0_1$: There is no statistically significant influence of performance monitoring practice on the implementation of road projects in Nakuru County, Kenya.

$H0_2$: There is no statistically significant influence of quality monitoring practice on the implementation of road projects in Nakuru County, Kenya.

$H0_3$: There is no statistically significant influence of stakeholder monitoring practice on the implementation of road projects in Nakuru County, Kenya.

$H0_4$: There is no statistically significant influence of report monitoring practice on the implementation of road projects in Nakuru County, Kenya.

1.5 Justification of the Study

This study is fundamentally important given the current challenges in Kenya's road infrastructure and the critical role that effective monitoring practices play in the successful implementation of road projects. The situation in Nakuru County, where a significant proportion of allocated funds remains unused despite the deteriorating state of the road network, underscores the need for this research. The fact that over a third of Kenya’s roads are in a depleted condition not only impedes economic growth by hindering efficient transportation of goods and services but also poses safety risks and reduces the overall quality of life. The discrepancy between the available funding and its actual utilization, as highlighted by the Office of the Auditor General, indicates systemic issues in project management and implementation. This study aims to bridge this gap by examining the influence of various monitoring practices on the implementation of road projects.

By focusing on performance monitoring, quality monitoring, stakeholder monitoring, and reporting monitoring practices, this study seeks to provide scientifically informed

guidance on how these factors affect road project implementations in Nakuru County. Understanding these relationships will be important for developing strategies that ensure effective use of resources, adherence to timelines, and high-quality construction, ultimately contributing to the improvement of Kenya's road infrastructure.

In addition, this study is timely as it addresses a research gap identified in previous literature. While past studies have explored various aspects of project performance, including human resources policies and organizational factors, there is a lack of specific focus on how M&E practices impact the implementation of road projects in Nakuru County. The findings of this study will not only be relevant for Nakuru County but will also provide important lessons for other counties within Kenya facing similar challenges. The study's focus on the local context, combined with its evaluation of broader M&E practices, positions it as a critical contribution to the field of project management and infrastructure development in Kenya. By identifying the key factors that influence the successful implementation of road projects, the study will aid policymakers, practitioners, and stakeholders in enhancing the efficiency and effectiveness of road infrastructure development, thereby supporting Kenya's broader economic and social development goals.

1.6 Scope of the Study

The present study was conducted in Nakuru County, Kenya, and was based on the county's extensive road network, which covering 9,654.10 kilometres. The study analyzed the monitoring and evaluation activities that influenced the implementation of road projects across all 55 wards in Nakuru County, including different road categories such as International Trunk, National Trunk, Primary, Secondary, Minor, Special Purpose, and Unclassified roads. These roads created a crucial infrastructure system that helped drive economic development and community connectivity in the county.

The research sample comprised 211 stakeholders involved in the implementation of road infrastructure. The stakeholders comprise Senior Officials from the Department of Roads, Nakuru County, Ward Infrastructure Coordinators from 55 wards, Road Engineers, members of the Program Implementation Team, and the County assembly. The study collected data from all these stakeholders using a proportionate stratified random sampling method to ensure complete coverage and adequate representation across various levels of authority and expertise.

The study examined five variables on their influence on the implementation of road projects within Nakuru County. The independent variables included performance monitoring practice, quality monitoring practice, stakeholder monitoring practice, and report monitoring practice; the dependent variable was the implementation of road projects. These variables were selected based on research gaps in the literature and contextualized to the local setup in Nakuru County.

The holistic approach ensured that relevant stakeholders were involved at all the appropriate levels and that all the critical information on road project construction was obtained from the various categories.

1.7 Significance of the Study

This study will contribute significant practical, policy, theoretical, and academic value to various stakeholders involved in road infrastructure development. From a practical perspective, the findings will directly benefit project managers, engineers, and construction professionals in Nakuru County by providing evidence-based strategies to enhance project implementation through effective monitoring and evaluation. This is particularly relevant for critical infrastructure projects like the Roret-Quarry-RVIST Road, which remained impassable for nearly three decades, and the Mulwang Road in

Soin Ward, where implementation challenges have persisted. The study's recommendations will help address current inefficiencies in resource utilization, noting that despite funding constraints, large amounts of allocated funds remain unused in road projects.

For policymakers and government agencies, this research will provide crucial insights to strengthen regulatory frameworks and governance structures for road infrastructure development. The findings will help address the systemic issues in project monitoring and evaluation, particularly in managing the county's 9,654.10 km road network across various classifications. This will be especially valuable to the Department of Infrastructure in developing more effective policies for resource allocation, project oversight, and quality control. The study's recommendations will help improve the implementation of road projects and enhance the coordination between various road authorities.

Theoretically, this study will advance the understanding of monitoring and evaluation practices in the context of public infrastructure development in emerging economies. By examining the application of Resource-Based View Theory, Quality Management Theory, Stakeholder Theory, and Communication Theory within Nakuru County's road sector, the research will contribute to the theoretical framework for analyzing infrastructure project implementation in similar contexts. This theoretical contribution will be particularly valuable for understanding how different monitoring and evaluation practices interact with local institutional capacities and resource constraints.

For academia and future researchers, this study will provide a methodological framework for examining infrastructure project implementation in developing regions. The research design and findings will serve as a reference point for similar studies in other countries or infrastructure sectors. The study's comprehensive examination of monitoring and

evaluation practices in road projects will fill existing knowledge gaps, particularly regarding the relationship between project oversight mechanisms and implementation outcomes in the Kenyan context.

Furthermore, the findings will inform capacity building and professional development programs for infrastructure project managers and technical staff. By identifying specific areas where monitoring and evaluation practices influence project success, the study will help educational institutions and training programs develop more targeted and effective curricula. This will help build a more competent workforce capable of managing complex infrastructure projects effectively.

Lastly, the study's findings will benefit local communities by promoting more efficient and effective road infrastructure development. Improved project implementation will lead to better road networks, enhanced connectivity, and increased economic opportunities for residents. This is particularly significant given the role of road infrastructure in supporting social and economic development across Nakuru County's urban and rural areas.

1.8 Limitations of the Study

Several limitations were encountered during the study on road project implementation in Nakuru County. First, the use of structured questionnaires with closed-ended questions limited the depth of responses. To address this, brief open comment sections were included for optional elaboration. Second, the Likert scale used to measure attitudes assumed a uniform interpretation, which varied among respondents. To reduce this, simple explanations were provided for each scale item during questionnaire administration.

Third, the sensitivity of the topic led some respondents to withhold information or give socially desirable answers. This was mitigated by ensuring anonymity and emphasizing that the data were for academic purposes only. Lastly, the broad scope of respondents posed logistical challenges in ensuring clarity on confidentiality and purpose. This was managed by issuing consent forms and clear instructions at the start of data collection.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter discusses relevant theories to the study's objectives. Additionally, the chapter provides a review of previous empirical studies relevant to this study's objectives, identifying gaps that require attention. Theoretical analysis and a conceptual framework are also presented in this chapter, along with the gaps that emerge from the empirical review.

2.2 Theoretical Framework

The theoretical framework is expected to demonstrate an understanding of theories and concepts that are relevant to the topic of the research and that will relate to the broader fields of knowledge in the study you are taking. The theoretical framework connects the researcher to existing knowledge (Orodho, 2003). The Resource-Based View Theory, Stakeholder Theory, Quality Management Theory, and Communication Theory of Organizational Effectiveness will inform this study.

2.2.1 Resource-Based View Theory

Resource-Based View (RBV) was advanced by Wernerfelt (1984) and Barney (1991). The theory shows that the key sources of performance and strategy success are a firm's unique resources and capabilities, particularly those that are valuable, rare, inimitable, and non-substitutable. This theory focuses more on internal capabilities, such as intellectual property, organizational culture, and specialized capabilities, than on external positioning in the marketplace, and holds that when internal capabilities are effectively utilized, they can lead to a sustainable competitive advantage in the marketplace (Taher, 2012). The theory assumes that, to sustain a competitive advantage, firms must possess and use unique, valuable resources that competitors can easily imitate. The application of

RBV across industries has been widespread and has significantly improved firm performance (Peteraf, 1993).

The initial effort is undertaken by Barney (1991), who defines resources as tangible and intangible assets that enable firms to design and implement strategies that make them more effective and efficient. The relevance of resources in acquiring a competitive advantage was based on Barney's paper. Moreover, Peteraf (1993) extended the RBV framework by emphasizing the significance of dynamic capabilities, which relate to a firm's capacity to adapt and renew its resource base over time. This school of thought identified the dynamism of competitive advantage and the need for firms to continue transforming their resources to stay competitive (Barney and Arikan, 2005).

The scope of RBV usage in empirical research has been vast in the quest to determine the association between a company's resource endowment and its performance. Researchers have examined industries and environments in which companies are observed to possess distinctive and resourceful advantages and outcompete others (Wernerfelt, 1984; Mahoney and Pandian, 1992). Using the shipping industry as an example, Wernerfelt (1984) conducted a study and found that the more favourable a company's resource position, the more profitable it was. The findings of these studies have confirmed the primary implication of the RBV theory: that resources are a significant source of competitive advantage.

The advantage of the RBV theory lies in its emphasis on the internal aspects of the firm that can be controlled and managed by the organization (Grant, 1991). The focus enables managers to make strategic decisions using their resource portfolio, yielding a more effective allocation of resources. In addition, RBV provides a holistic view of the firm's competitive advantage in terms of tangible and intangible resources, such as technology and brand name, respectively (Michalisin, Kline, and Smith, 2000). It is an overall

strategy that enables one to identify sources of competitive advantage covertly. However, the RBV theory has a few weaknesses. Some of the criticisms include the lack of clear provisions for identifying and measuring resources and capabilities. A resource that is seen as valuable and unique may be subjective, and, as a consequence, it may not be easy to apply the theory consistently across different firms and industries (Barney, 1991). Also, RBV is not as prescriptive regarding the dynamics of resource development and acquisition, which undermines its connotations as an active instrument in the possession of firms that seek to assume control over resource development and renewal (Peteraf, 1993).

This theory is applicable in this research because it directs the performance monitoring variable. The organizational resources and capabilities in this regard are fundamental, as the Resource-Based View (RBV) Theory observes. The performance monitoring herein, in the context of the study, refers to the resources, capabilities, and structures available in government bodies and agencies responsible for the implementation of road projects. The other aspect of RBV theory is the realization that a company's competitive advantage stems from its uniqueness and valuable resources. Careful analysis of the operations of government bodies involved in the implementation of road projects shows a complex interaction of resources that determine the achievement of objectives.

According to RBV theory, the possession of unique and valuable resources, and, in the context of this study, performance monitoring, can significantly contribute to whether Nakuru County can successfully plan and execute road projects and properly manage them. These unique resources may take the form of skilled human resources, efficient processes, availability of funds, and the ability to coordinate the various stakeholders. By assessing the effectiveness of performance monitoring in the County, the study will determine whether the presence or absence of these resources and capabilities is directly

related to the successful implementation of road projects. In this way, the assessment will focus on how resources and capabilities affect the outcomes of road project implementation in Nakuru County, Kenya.

2.2.2 Quality Management Theory

Quality Management Theory was initiated by Deming and Juran (1922). The two theorists introduced the concepts of continuous improvement and total quality management, in which systematic procedures and statistical control are required for achieving quality (Anderson, Rungtusanatham, and Schroeder, 1994). They explored the human aspect of quality, bringing in the Juran Trilogy of quality planning, quality control, and quality improvement. This theory suggests that an organization should always strive to improve the quality of its products or services through systematic procedures and a strong commitment to customer satisfaction (Zu, Fredendall, and Douglas, 2008).

Quality Management Theory is an essential part of modern management practice and plays a significant role in the analysis of how quality monitoring will influence road projects, such as those in Nakuru County. This theory encompasses many principles and practices to ensure that a product or service meets specific quality standards. The principles include customer focus, leadership, and people engagement, process approach, improvement, evidence-based decision-making, and relationship management (Ofosu, 2021). In reference to road projects, the Quality Management Theory ensures that projects are delivered to the required standards and specifications critical to the safety, durability, and functionality of the roads.

The county government should strive to deliver quality road projects that satisfy its customers. This is critical since it ensures the fulfilment of stakeholders' interests, namely the users and residents who utilize the road network.

According to Grant, Shani, and Krishnan (1994), the project will be able to set its objectives based on community expectations by first considering the customer's opinion. This consumeristic structure would ensure that the road system addresses the county's economic and social needs, such as transport media and trade, and facilitates people in obtaining the services they require (Rungtusanatham, Forza, Filippini, and Anderson, 1998). Leadership and the role of leaders in providing an environment that enables quality are another pillar of the Quality Management Theory. Proper leadership in road projects in Nakuru County entails having a clear objective, delegating resources, and adequately orienting the whole team towards quality objectives. The culture of quality should also be promoted by leaders, since quality is the responsibility of all team members; a leadership approach will ensure the project meets the highest standards from the planning stages to implementation (McAdam, Miller, and McSorley, 2019).

People's involvement is another important aspect, and Quality Management Theory emphasizes the importance of involving all people in the organization in quality initiatives (Ravichandran and Rai, 2000). In the case of road works, this means that all the people involved, the engineers and the construction workers, must deliver quality. The key aspects of quality are efficient execution of projects through rigorous training and enabling employees to identify and correct quality problems. These involvements enhance the quality of road projects and also create a sense of ownership and pride among the workforce (Thiagarajan and Zairi, 1997). The other element of quality is the process approach, which involves integrating related processes within an organization to achieve objectives effectively and efficiently. In the context of road projects in Nakuru

County, this involves systematic planning, implementation, monitoring, and review of project stages. By managing these processes, the project managers will be in a position to ensure the quality, affordability, and on-time delivery of the project (Rungtusanatham, Forza, Filippin, and Anderson, 1998). This kind of strategy is useful for identifying potential risks and taking corrective measures within a reasonable period.

Willar, Trigunarsyah, Dewi, and Makalew (2023) also argue that one element of the Quality Management Theory is continuous improvement. It involves a continuous process of product, service, or process improvement. In the context of implementing road projects in Nakuru County, this means regularly reviewing and enhancing the processes and equipment used for road infrastructure construction. The existing construction techniques and materials would be sufficient to improve the quality of the roads, resulting in a more sustainable, durable infrastructure (Mosadeghrad, 2012). Evidence-based relationship management and decision-making are part of the Quality Management Theory. All evidence-based decisions result in the best practices being adopted in road projects. This encompasses the collection and evaluation of information on the project's performance, the use of resources, and stakeholder feedback on the resources. Further, one can regulate relations with suppliers, contractors, and the community, ensuring a collaborative approach to the project and enhancing project outcomes.

2.2.3 Stakeholder Theory

Freeman's Theory of Stakeholders was advanced in 1984. According to the Stakeholder Theory, organizations ought to consider the interests and concerns of all individuals or groups (stakeholders) who are influenced by, or can influence, the organization's decisions and actions. This view contradicts the conventional shareholder-centered view of business, which primarily involves maximizing profit for shareholders (Friedman and Miles 2002). Rather, it is the Stakeholder Theory that holds that organizations must be

responsible to a wider range of stakeholders, including employees, customers, suppliers, communities, and even the environment (Phillips, Freeman, and Wicks, 2003). The Theory has become widely accepted and applicable across different industries and sectors. According to this theory, financial results are not the only priorities for organizations; they should instead prioritize ethical and responsible actions that take into account the welfare of all parties (Pesqueux & Damak-Ayadi, 2005). This has been a broader view of corporate responsibility, which has resonated with scholars and practitioners who need to develop sustainable business practices that are socially responsible (Freeman, 1984). It has also affected corporate governance and CSR (Corporate Social Responsibility) programs, resulting in increased focus on transparency, ethical conduct, and the incorporation of stakeholder issues into decision-making procedures.

According to the theory, organizations can help address the interests of their stakeholders to increase its long-term viability and competitiveness (Donaldson and Preston, 1995). Indicatively, companies that invest in employee welfare and involvement tend to achieve better output and lower turnover, which may translate into better finances. Moreover, companies can build their reputation by taking an active part in local community life, demonstrating their responsibility towards the environment, and minimizing regulatory risks (Mitchell, Agle, and Wood, 1997). The Stakeholder Theory has therefore helped organizations to manage complex ethical and social issues and create value for all stakeholders.

This theory is relevant to this study, as it illuminates stakeholder monitoring and assists the researchers in understanding the dynamics of stakeholder involvement in road project implementation, which is crucial to achieving positive results. The Stakeholder Theory advocates considering the interests and concerns of all parties that are influenced by or

affected by a project, such as the government, local communities, contractors, and other interested parties (Wojewnik-Filipkowska, Dziadkiewicz, Dryl, Dryl, and Bęben, 2021). In the context of road project implementation in Nakuru County, it is important to consider the needs and expectations of all stakeholders to plan and execute the project. For example, the local community may be more concerned with road safety and only a little inconvenience to their lives, whereas the contractors may be more concerned with project efficiency and profitability. Through the Stakeholder Theory, the study will be able to determine the extent to which various monitoring and evaluation practices meet the various interests of stakeholders and whether they can produce better project outcomes.

Moreover, Stakeholder Theory prompts organizations to communicate with the stakeholders responsibly and openly. The monitoring and evaluation practices that ought to be applied effectively in road projects in Nakuru County would entail routine communication and feedback with stakeholders. This involves open consultations, communication regarding the progress of the project, and systems to accommodate stakeholders' concerns (Bailur, 2006). The study will evaluate the effectiveness of these practices by examining how they are implemented and their impact on stakeholders regarding the legislation of road projects, with the overall interests of the community and other concerned authorities.

Besides, the Stakeholder Theory focuses on the long-term sustainability of organizations and projects by acknowledging the importance of establishing positive relationships with stakeholders (Winn, 2001). When applied to a road project, this theory will assist the researcher in understanding how monitoring and evaluation practices can foster positive stakeholder relationships and whether these relationships can lead to future project success and community support. The Stakeholder Theory is a perspective on capitalism

that focuses on the interdependent relationships between a company and its customers, suppliers, employees, investors, communities, and other stakeholders. The theory concerns values and morals in the management of an organization. The theory is useful to this research as it seeks to provide an understanding of stakeholders and the organization regarding road construction activities, in particular, how their participation affects the execution of road projects in Nakuru County.

2.2.4 Communication Theory of Organizational Effectiveness

Daniel Katz and Robert L. Kahn, in their groundbreaking book The Social Psychology of Organizations, published in 1978, suggested the Communication Theory of Organizational Effectiveness. The theory was developed at a time when organizations were experiencing tremendous growth and increasing complexity in business operations, and this dilemma was critical because business operations depended heavily on communication patterns to determine organizational success. This theory was developed by Katz and Kahn (1978) to address the shortcomings of classical theories of management, which were deficient in explaining the impact of communication on an organization's performance. Their work was based on previous systems theory methods, especially those of Ludwig von Bertalanffy, but with a reflection of what social psychology and organization behaviour research done at the University of Michigan Research Centre would suggest to them. The theory sought to close the gap between traditional organization theories, which were mainly concerned with the formal organization, and the new concept of organizations as dynamic, interconnected entities.

The theory has many major elements, among which are information exchange and feedback loops, which are the core elements of the theory. The concept of communication networks is the first important element, defined as patterns of interaction that allow the flow of information between and within subsystems of an organization.

These networks, formal and informal, form various channels for data transmission and decision-making. The second important element is message fidelity, defined as the precision and completeness of information as it flows through organizational channels. Katz and Kahn noted that the more the message is transmitted, the more likely it is to be distorted, which can impact organizational effectiveness. The third element is the mechanisms of feedback, which help organizations track and realign their communication processes to adapt to changes in their environment and internal demands.

This is a complicated network of upward, downward, and lateral flow of communication between these components.

The theory assumes that the balance of these flows in the organization is effective, with each having different yet complementary functions. Upward communication allows receiving feedback and reporting problems; downward flow issues instructions and corporate aims; and lateral flow allows coordination of the activities of various units in the organization. According to the theory, the quality of these interactions directly affects an organization's effectiveness through better decision-making, increased coordination, and improved resource allocation.

The efforts of different scholars greatly developed the theory. Weick (1979) built on the theory by adding the notion of organizational sensemaking and the importance of communication patterns in enabling organizations to make sense of the environment and respond appropriately. Rogers and Agarwala-Rogers (1976) made their contribution by designing measures of communication effectiveness and determining obstacles to effective communication in an organization. In recent years, Miller (2015) has incorporated digital communication channels into the theoretical framework and recognized how modern technology has influenced communication patterns within organizations.

Opponents of the theory, including Putnam and Cheney (1985), claimed that it was overly simplistic in its analysis of organizational communication, overemphasizing formal communication and underrating the significance of informal network structural features. There was doubt about the applicability of the theory across cultural settings, as Scott (1987) noted that communication patterns differ greatly across societies. Nonetheless, proponents such as Conrad and Poole (1998) demonstrated that the theory is adaptable across various organizational contexts and may help address contemporary organizational issues.

The theory proves particularly useful when the research aims to inquire into reporting on the performance of road projects. The focus of the theory is on data collection, planning, and the distribution of project information to interested parties. The theoretical framework may help to describe the positive effect that effective reporting systems might have on the implementation of road projects.

2.3 Empirical Literature Review

This section reviews past research relevant to the study variables and identifies research gaps.

2.3.1 Performance Monitoring Practice and Road Project Implementation

The study by Li, Booth, Esterly, Baring-Gould, Clowes, Weston, and Jacquiau-Chamski (2020) focused on performance monitoring of African microgrids to identify best practices and operational data. The research entailed thorough analysis and was anchored in the expertise of different stakeholders involved in the operation of micro-grids in other parts of the world. The objective of the study was to make micro-grid systems in Africa more effective and efficient through available operational data and best practices. The study provided insights into the crucial determinants of micro-grid performance through a combination of qualitative and quantitative research methods, using surveys and data

analysis tools. The findings indicated the need for effective monitoring mechanisms and data-driven decision-making processes to streamline micro-grid system performance. Furthermore, the paper has highlighted the importance of stakeholder collaboration to resolve the issue and to seize opportunities in the field of renewable energy infrastructure.

In a literature review and case study analysis, Errida and Lotfi (2021) examined the forces that influence change management within an organization. The research was grounded in antecedent theories and evidence in the field to identify key influences on the successful implementation of organizational change initiatives. The research had the potential to introduce a new understanding of the complexity of change management processes by consolidating results from sources such as academic articles and case studies. The study determined that leadership, communication, stakeholder involvement, and organizational culture play a significant role in the process of effective change initiatives implementation by analyzing several organizational settings and change management interventions. The findings showed that a holistic approach to change management is important for aligning organizational goals, resources, and capabilities with the dynamics of the external environment.

Ciric Lalic, Lalic, Delic, Gracanin, and Stefanovic (2022) examined how project management practices affected project success during the shift to agile methodologies. The comparative analysis approach also enabled the paper to test the efficiency of different project management paradigms in achieving successful project outcomes. The paper discussed the pros and cons of traditional and nimble project management frameworks, drawing on theoretical knowledge and practical evidence. The findings highlighted the flexibility, adaptability, and responsiveness of agile methods to changing project requirements and market conditions. Additionally, the paper has also mentioned

the importance of organizational culture, leadership support, and stakeholder collaboration in the adoption and implementation of agile project management practices.

The article by Okolie and Edo (2023) addressed the issues and challenges in the implementation of infrastructure projects in Nigeria, offering insights into what makes projects fail. This research was an intensive study of the socio-economic, political, and institutional dynamics that characterize infrastructural development in Nigeria, and the findings have been employed to identify the inherent challenges to successful project implementation in Nigeria. The paper helped define the importance of properly developed governance mechanisms, the role of stakeholders, and project management practices in implementation, while also identifying the obstacles to implementation by analyzing case studies and empirical research. The findings emphasized the need for the holistic development of infrastructure, encompassing both technical skills and socio-political concerns, to achieve sustainable project outcomes.

As part of their comparative analysis, Olawumi and Chan (2022) systematized the project evaluation models used to implement smart, sustainable practices in construction projects in Nigeria and Hong Kong. The combination of the two settings meant that the study would have been used to identify best practices and new methods to enhance the sustainability performance of construction projects. The paper, through the synthesis of qualitative and quantitative research methods, including surveys, interviews, and data analysis tools, developed elaborate evaluation frameworks that are unique to the socio-economic and environmental contexts of Nigeria and Hong Kong. The findings showed that cooperation among stakeholders, the use of emerging technologies, and regulatory provisions are relevant to the development of smart, sustainable practices in the construction industry. In addition, the paper has also emphasized the role of capacity-

building and knowledge-transfer processes in supporting the adoption of sustainable building techniques in different regions.

In their study, Musyimi and Ondara (2022) investigated the practice of collaborative monitoring and evaluation and its impact on the performance of projects funded by Uasin Gishu County, Kenya. The research was likely to ensure that the initiatives implemented by the public sector were more effective and accountable through the analysis of the dynamics of collaborative governance, along with stakeholder involvement in project monitoring and evaluation. Through qualitative and quantitative research, including interviews, surveys, and document analysis, the study measured the strengths and weaknesses of the existing monitoring and evaluation processes. The information was helpful in demonstrating the usefulness of participatory approaches, data transparency, and accountability tools in improving the implementation of county-funded projects. To a greater extent, the research found that capacity building and institutional restructuring were required to facilitate collaborative governance systems and enhance the overall efficiency of development interventions in the region.

2.3.2 Quality Monitoring Practice and Road Project Implementation

Solomon, Willis, Pavluck, Alemayehu, Bakhtiari, Bovill, and Foster (2018) conducted an assessment of quality monitoring and quality control in the world trachoma mapping project. The research utilized expert opinion and was refined through a series of teleconferences involving the GTMP Methodologies and Prioritization Working Groups to establish criteria for mapping and non-mapping. The research employed computer simulation to establish that mapping required a population-based prevalence survey rather than a faster, less epidemiologically sound method. The training system, electronic data collection application, and field methodologies were also later improved and optimized as a result of this experience. The results of the study revealed that prevalence

surveys could be quality controlled and quality assured to the extent of maximizing comparability of prevalence estimates across countries and allowing high-speed, high-fidelity data processing and storage, whilst safeguarding the interests of health ministries. Nyakala, Vermeulen, Pretorius, and Munyai (2024) attempted to establish the relationship between the use of the quality monitoring practice and the efficiency of road construction in South African local municipalities.

The rationale for the research was that the road construction industry in South Africa had been characterized by high inefficiency, inadequate strategy, and poor infrastructure quality. The Small and Medium Enterprise (SME) and local government statistics showed that there is an inefficiency of 30.1 percent to 39.4 percent in project and strategic planning, and that rural road construction was poor. The research adopted a quantitative research approach, using a survey method in which questionnaires were administered to 160 project/construction managers, architects, quantity surveyors, clients/managers, and administrators of a local government department in South Africa, who were randomly selected. The descriptive statistics included frequencies and percentages, the mean and standard deviation, and the measure of the strength of the correlation; the confirmation of the factor analysis was Pearson correlation. In the road construction projects, the research found that there was no statistical significance in the percentages of SME-led projects adopting quality monitoring processes within the local municipalities, and this was characterized as a positive, moderate relationship at the indicated levels. This means that the variables for SME-led road construction projects were highly correlated.

The study by Salvi and Kerkar (2020) focused on quality monitoring and control to assess the effectiveness of construction and management projects. The research revealed that technological progress in their manufacture, improving their quality, reliability, and

factory finish, are the primary issues in the development of construction projects and structures. The development and implementation of effective, continuous quality control at every production phase, and the testing of products and structures with the latest equipment and machines, will help resolve these problems. In the current competitive construction industry, where a contractor must survive, he must be capable of fulfilling the owner/user's quality requirements and his own needs, as well as meeting the conformance requirements. The processes involved must be cost-effective to be in a position to meet the above requirement.

The research paper concluded that the implementation process of a Quality monitoring and Quality Control System reveals that quality does not occur randomly; it must be controlled at each part of the product. A quality system is a process by which a company structures and coordinates its resources to attain, maintain, and enhance quality at a low cost. Quality Systems have similarity with financial control systems, information technology systems, and personnel management systems.

Gumo, Makokha, and Namusonge (2018) aimed to determine how total quality management practices influence the performance of construction projects in Trans Nzoia County. The research design used was a descriptive survey research design. The data collection was done by census. The pilot study was conducted in Kakamega County, which included 20 questionnaires. The questionnaires were then tested on content validity and reliability. The questionnaires were then administered to the project professionals in Trans Nzoia County based on the sample frame (110). The research was responded to by 100 out of the 110 targeted respondents. Analysis of the data entailed data cleaning and the extraction of recurring themes from respondents' descriptions of their experiences. The gathered data were coded, checked for completeness, and analyzed. The counts of the answers' frequencies were obtained to generate information

about the respondents and depict the overall trend of the findings across the different variables being studied. According to the multiple linear regression model, total quality management practices accounted for 25.2 percent of the variation in construction project performance in Trans Nzoia County. Based on the results, it was concluded that leadership has a positive effect on the performance of construction programmes within the Trans Nzoia County. The study recommended that construction leadership be advised on how the project should be incorporated into construction policies.

2.3.3 Stakeholder Monitoring and Road Project Implementation

As part of their discussion, the authors examine the impact of stakeholder involvement on the performance of the development projects in Guinea, Magassouba, Tambi, Alkhlaifat, and Abdullah (2019). concludes that stakeholder engagement in a development project can take different forms. Levels and forms during the implementation process. This may align with the project predefinition and project initiation requirements, organizational strategic objectives, negotiated, consulted, and partnership-based approaches, and the project's ultimate goal. Stakeholder engagement is both a method and a goal. The research analyzed the literature on stakeholder involvement to discuss its impact on project identification, planning, implementation, and the monitoring of the performance of development projects in organizations in Guinea. The research further established that stakeholder intervention in development projects, through monitoring and reporting, helps define impediments and obstacles to the undertakings. The paper found that stakeholder engagement in project identification, planning, implementation, and monitoring increases the likelihood of successful project implementation and is the right method for meeting the organization's objectives.

In their research, Kibathi and Nyang’au (2023) evaluated the correlation between stakeholder engagement and the performance of health projects in Nyeri County, Kenya,

and its public hospitals. The study used a descriptive research design. The target population was the community hospitals in Nyeri County. The unit of analysis was the public hospital health projects in Nyeri County, and the unit of observation was the hospital management team, project implementers, and government representative agencies, since they implement the health projects in Nyeri County. The research was in the form of a census; therefore, no sampling was conducted. Semi-structured questionnaires were used to gather data. The collected data were then edited, dealt with blank responses, coded (putting the data into categories), and keyed into a social science software program, version 24, for analysis. Inferential statistics and descriptive statistics were used in the study. Results indicated that the stakeholder analysis and the performance of health projects in Kenya, and the stakeholder conflict management and the performance of health projects in Kenya, had moderately significant and strongly significant relationships, respectively. The research proposes that project managers will have to name and chart all stakeholders to maintain a record, and that they ought to strive to understand the divergence of views among the project team and stakeholders and make them transparent.

Chepngetich (2022) discussed how stakeholder involvement affected the implementation of the off-grid micro-hydropower project in Iriamaina Micro Hydropower in Bomet County, Kenya. In the study, a qualitative and quantitative research design with a descriptive research design was used. The research subject was 391 stakeholders in 4 Compassion-assisted projects, with a sample size of 191 respondents, based on the Fisher et al. formula with an 80% response rate. The results of the analysis showed that stakeholder participation in project implementation ranked highly in project implementation, with a correlation coefficient of 0.802, followed by stakeholder participation in project planning, with a correlation coefficient of 0.798. Stakeholder

involvement in project implementation had a relatively strong influence on project implementation, as indicated by a correlation coefficient of 0.616. Nonetheless, the weak correlation between stakeholder involvement in monitoring and evaluation and project implementation was 0.350. According to the findings, the study advised that the current policies on compassion sponsorship programs should be reviewed to enhance stakeholder involvement in the realisation of compassion projects and ensure they become more effective.

A research that evaluated the significance of community involvement in the process of planning and making decisions in management of the population revealed that when stakeholders are included in the project planning and have the opportunity to shape the design of projects and programs to achieve the implementation of their right better, they will be more interested in the execution and monitoring activities (Rijal, 2023). The research also showed that the more stakeholders are aware of a project, the more they develop a sense of ownership and participate in the implementation process. Equally, JICA (2019) maintains that at the fourth stage, activity execution, the stakeholders primarily engage in programs. Project execution further ensures that stakeholders are actively engaged in carrying out project activities.

This helps in the effective and efficient execution of planned project activities and also ensures that measurements with respect to project plans, specifications, and the original feasibility concept are gathered, analyzed, and responded to throughout the project lifecycle. The Project Management Institute (2023) explains that project execution is highly dependent on plans developed during the planning phase. Unless an established process for executing project activities is in place, every project would apply its own best practices, experience, and methods, leaving some control, tracking, and corrective action activities undone.

Wengrzyn and Wojewnik-Filipkowska (2022) define stakeholders as individuals with diverse interests in a particular topic or company who have a direct or indirect influence on the functioning of that organization. Stakeholder involvement in appropriate M&E activities broadens the aim of facilitating participatory development. Omeka and Chege (2021) conducted a study on the stakeholder role in CDF-funded projects in Kenya, and they discovered that one of the challenges in M&E relates to how M&E can be implemented across the population of stakeholders in terms of the implementation of M&E practices. This thus calls for further stakeholder involvement to elaborate on and understand the process. The research thus seeks to fill gaps in determining the effects of stakeholder engagement in the implementation of road projects in Nakuru County, Kenya.

In a separate study, Kioko and Yusuf (2023) aimed to determine the correlation between stakeholder management and the performance of borehole water projects in Makueni County, Kenya. Goal-setting theory was used to guide the study. The survey focused on 135 water projects in the county government of Makueni, and a census was conducted, with 144 respondents, including representatives of 9 sub-counties of Makueni and members of the project teams in the study. Inferential and descriptive statistics were done. The research established that stakeholder management was significantly correlated with the performance of borehole water projects in Makueni County, where performance was defined in terms of project implementation. In accordance with the study results, almost 50% of the performance difference in the borehole water projects in Makueni County could be explained by stakeholder management. The strong positive correlations established between team management and the performance of borehole water projects, compared with stakeholder management planning, were weakly correlated with the performance of borehole water projects. The regression analysis confirmed a positive,

significant relationship and impact of team management on the performance of borehole projects. In addition, stakeholder management planning positively and insignificantly affected the performance of borehole projects. The paper advised that stakeholder management should be considered for the borehole water project in Makueni County.

2.3.4 Report Monitoring and Road Project Implementation

Smith, Li, and Rafferty (2020) evaluated the implementation of research logic models, such as planning, execution, reporting, and synthesizing, for project planning methodology. The study was motivated by the fact that numerous models, frameworks, and theories exist for specific components of implementation research, including determinants, strategies, and outcomes. However, the implementation research projects do not have a clear rationale or justification for how these aspects are and how they are tested with respect to one another. Despite the necessity of this for enhancing the conceptual links between the core issues involved in undertakings, there are very few tools or methods developed to support it. The development of the IRLM structure and guiding principles is preceded by a series of preparatory activities involving different investigators and their representatives across contexts, research design, and implementation strategies under review. Results of the survey indicated that IRLM was very helpful in many purposes, such as improving the rigor and reproducibility of the project; serving as a roadmap of how the project will be implemented; reporting and specifying how the project will be implemented, as well as understanding the relationship between determinants, strategies, and mechanisms and outcomes of the project.

According to a study by El Khatib, Alhosani, Alhosani, Al Matrooshi, and Salami (2022), project reporting is considered a necessary tool in any project. They stated that project reporting is instrumental in a company's start-ups, continued growth, expansion,

and even in its survival. Business reports allow companies to record their progress over the years. Reports can also assist in creating an audit trail of the past. Such documents may be needed when visiting financial institutions or seeking investors. Companies also prepare annual reports on their activities for their stakeholders and government agencies, as required by law. Reports also come in handy when making a major acquisition, planning, and deciding whether to sell the business. El Khatib *et al*. (2022) also found that project reports are useful to project teams and project stakeholders and offer multiple advantages. All involved parties will be able to monitor the project's ongoing development and compare it to the initial plan through these reports. They are able to detect risks in good time and initiate corrective action. Expenses are visible to everybody, and the budget is easier to manage because reports make it more visible. Reporting enhances transparency across all areas of the project, including team performance.

According to a study by Smith (2019), timely and precise project reports significantly increase stakeholders' trust. Moreover, the available empirical evidence indicates that project reporting is evolving with technological advances. Real-time data analytics integration, as depicted in one study by Doe (2021), is changing how project progress is monitored and reported. Such developments enable agile, active project management. Nevertheless, there are still difficulties, especially in the standardization of reporting forms and in combining qualitative data, as noted by Brown (2020). This literature shows that there is an increasing appreciation of the strategic importance of project reporting, and it also highlights the need for further innovation and standardization of reporting practices.

Kerzner (2022) asserts that every programme examined in the context of the report must include progress reporting for undertaking a project. To receive payments within the

project, the lead partner requires project progress reports submitted to the programme bodies. Besides this, the most widespread one is that a single programme's progress report form contains both content-related and financial information and must be accompanied by appropriate attachments. Kerzner (2022) also stated that programmes tend to have an independent final report form, which is also presented at the project end. The rate at which reports are provided is determined by the programme, and it differs across programmes. The reporting requirements in the programmes under analysis differ significantly and are subject to a number of programme rules set at programme start-up. The information present in the report forms of all programmes is quite considerable. There are various forms of report forms that are used in programmes. Each of the analysed programmes presupposes some data concerning the communication activity and project outputs. Some programmes, among others, require more technical information on how the communication strategy is implemented and how communication activities are coordinated.

2.3.5 Implementation of Road Projects

Mutua *et al.* (2020) conducted a study in Kilifi County, Kenya, on project monitoring practices during the implementation of road construction projects. The researchers' conceptualization of monitoring practices was based on four dimensions: communication, monitoring tools, stakeholder participation, and staff competency, whereas the measurement of project implementation was based on timely project completion, cost-effectiveness, quality standards, and project success ratings. They surveyed 109 respondents, selected through stratified sampling from 150 project managers, committee members, and monitoring staff across different road agencies, and presented their findings using a descriptive research design. Their results showed that there was great emphasis on communication (M=3.39, SD=1.092) and project

monitoring tools (M=4.38, SD=0.844). They discovered that monitoring practices were the most common predictors of project implementation (R 2=0.787), with stakeholder management (0.367, p=0.001), public participation (0.219, p=0.001), and project management (0.124, p=0.032) proving to be the most relevant predictors associated with monitoring practices in regression analysis. The researchers explained these findings by the critical importance of stakeholder engagement and coordination, noting that stakeholder involvement provides appropriate monitoring, enabling timely detection and resolution of bottlenecks.

Ametepey *et al*. (2020) have investigated the factors of sustainable implementation of road infrastructure projects in developing nations. Their mixed-method sequential study involved both the Delphi method and questionnaire surveys among road infrastructure professionals. The study identified 12 central constructs that affect implementation outcomes, including social, cultural, economic, and environmental sustainability. Their results indicated that stakeholder management had the highest individual contribution (0.367) to implementation outcomes, followed by public involvement (0.219). The researchers also stressed that, to implement it successfully, it is necessary to balance social, environmental, and economic aspects whilst ensuring high stakeholder engagement.

Leveraging project planning practices, Samo *et al*. (2024) examined their impact on road construction project performance in Kenya. They focused their study on 236 practitioners across different road authorities and used both a descriptive and an explanatory research design. This research concluded that 33.4 percent of the variance in project performance was attributed to project planning practices (R2 = 0.334). This relationship was moderate when project monitoring was included in the model, and it explained 38.8 percent of the variance. The researchers concluded that proactive

planning and efficient monitoring are important for improving the outcomes of road construction projects.

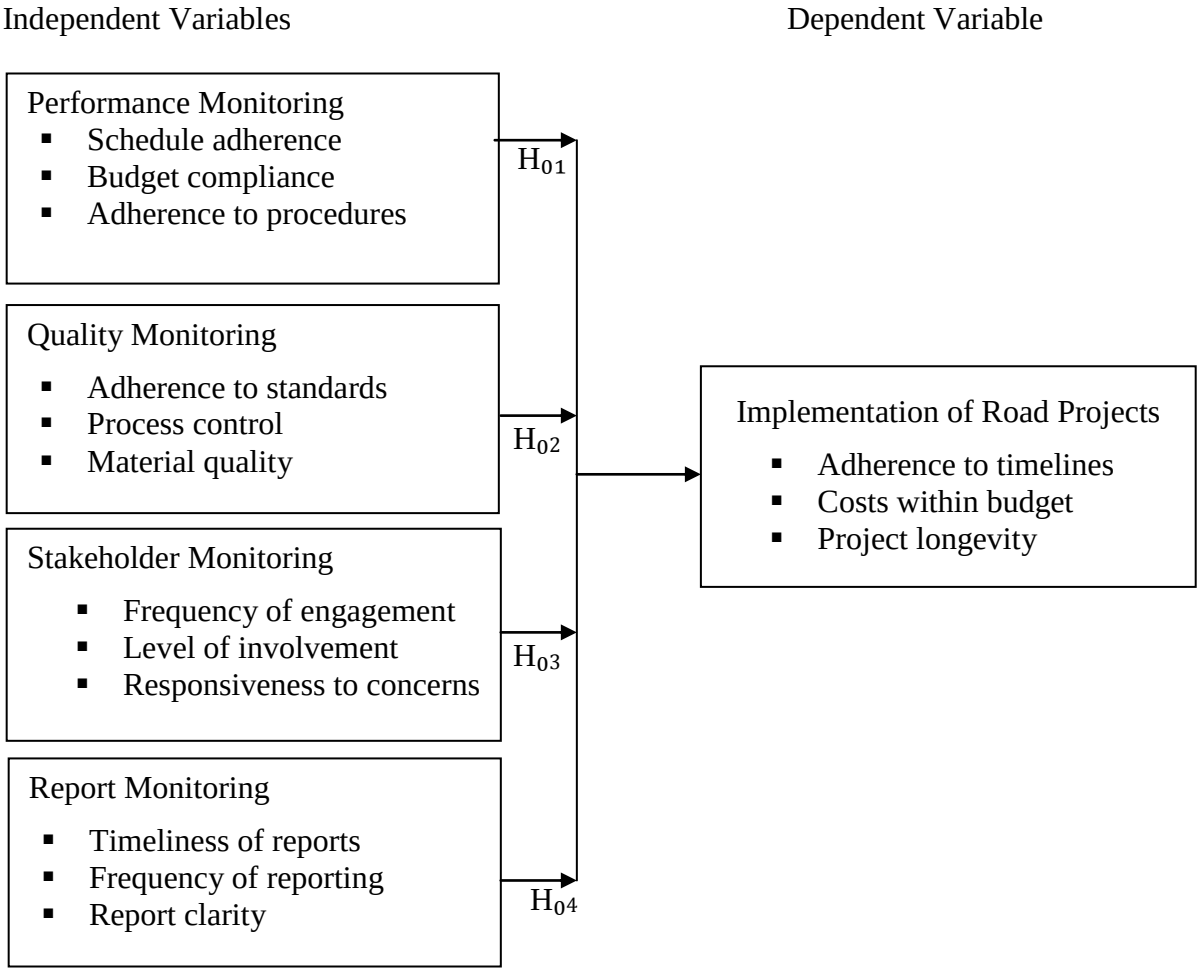
In these studies, there is a similar theme of the need for stakeholder engagement, systematic monitoring, and holistic planning to achieve successful outcomes for the road construction project. These factors are empirically shown to play an important role in the project's success, although their importance may differ across contexts.

2.4 Conceptual Framework

A conceptual framework is an organized style applied to a study to show the possible courses of action or to deliver a preferred way to an idea or thought. The conceptual framework conveys a visual picture of the relationship that results between the variables. Implementation of road projects is the dependent variable, whereas performance monitoring, quality monitoring, stakeholder monitoring, and report monitoring practices are the independent variables. Figure 1 presents the conceptual framework.

Figure 1

Conceptual Framework



Source: Author (2025)

2.5 Summary of Literature and Knowledge Gap

The research gaps emanating from the reviewed literature are summarized in Table 1.

Table 1

Summary of Research Gaps

Author & Year	Focus/ Objective	Key Findings	Research Gaps	How Current Study Addressed Gaps
Musyimi & Ondara (2022)	Collaborative M&E practices on county-funded projects in Uasin Gishu	Participatory approaches and data transparency enhance project performance	Limited to general county projects, not specific to road infrastructure	Examined M&E practices specifically in road projects within Nakuru County
Olawumi & Chan (2022)	Project evaluation models for smart sustainable practices in construction	Stakeholder collaboration and technology adoption crucial for sustainable practices	Focus on general construction projects without specific attention to road infrastructure	Developed evaluation frameworks specific to road project implementation in Kenyan context
Salvi & Kerkar (2020)	Quality assurance in construction management	Quality control necessary at each production stage for project effectiveness	Generic focus on construction without addressing unique challenges of road projects	Examined quality monitoring specific to road construction in Nakuru County
Magassouba *et al*. (2019)	Stakeholder involvement in development projects in Guinea	Stakeholder monitoring enhances project success	Different geographical context and not specific to road infrastructure	Analyzed stakeholder monitoring in Kenyan road projects context
Nyakala *et al*. (2024)	Quality assurance in South African road sector	Moderate correlation between quality assurance and project effectiveness	Different socio-economic context than Kenya	Examined quality monitoring practices in Kenyan context
Kibathi & Nyang'au (2023)	Stakeholder engagement in health projects	Strong correlation between stakeholder management and project performance	Focus on health sector rather than infrastructure	Examined stakeholder monitoring principles to road projects
Smith *et al*. (2020)	Implementation research logic model evaluation	High utility of logic models for project implementation	General project management focus without road sector specifics	Develop specific frameworks for road project implementation
El Khatib *et al*. (2022)	Project reporting practices	Project reports essential for tracking progress and decision-making	General project management context without infrastructure focus	Examined reporting practices specific to road projects

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the research design, the target population, sampling techniques, the data collection instruments, the validity and reliability of the instruments, the pilot study, data analysis techniques, and data presentation. Additionally, it discusses the ethical considerations observed during the study.

3.2 Research Design

The research design used in this study is a descriptive correlational design to explore monitoring practices in the implementation of road projects. Grunmo (2023) states that descriptive correlational studies are especially useful for studying the connections between variables in their natural settings. This method enabled the researcher to describe the phenomena of interest systematically and to analyze the relationships among the major variables. According to Hair Jr., Page, and Brunsveld (2023), descriptive correlational designs are particularly useful when exploring organizational practices in which various variables interact in complicated patterns.

Structured questionnaires were used to collect quantitative data on monitoring practices because they allowed descriptive analysis of current monitoring practices and testing of associations between variables. This methodology enables the systematic quantification of factors in project implementation without losing the study's natural setting (Akotia, Awuzie & Egbu, 2023).

The study design is associated with inherent limitations, which were addressed through robust methodological strategies. According to Mertens (2023), response bias, time stability, and the inability to determine causation are problems to consider when

conducting descriptive correlational studies. To obtain stronger findings, the research employed advanced statistical analysis tools as described by Gordon (2023).

According to the guidelines offered by Edwards and Holland (2023), the study paid attention to variable selection and precise measurement. This methodological style was able to both measure the condition of the monitoring and evaluation practice as well as the association between major variables influencing its application in road projects. The descriptive correlational study allowed in-depth analysis of the patterns and associations in the data and accounted for the limitations of non-experimental research designs.

The design provided a clear picture of current practices and significant correlations among the variables that determine the effectiveness of project monitoring and appraisal.

3.3 Location of the Study

The research was carried out in Nakuru County, Kenya. The County is the 32nd of 47 counties in the country. It is the fourth-largest city in Kenya, having been awarded the status on December 1, 2021, and is listed alongside Nairobi, Mombasa, and Kisumu. Nakuru County is found in the Rift Valley region, 160 km northwest of Nairobi, the capital city of Kenya. It is the third most populous county in Kenya, after Nairobi and Kiambu, with a population of 2,162,202 (2019 census). It is the 19th-largest county in Kenya by area, covering 7,496.5 km^2.

The county has diverse ethnic groups, which add to its culture. The county has an extensive road network, including major highways such as the Nakuru-Nairobi highway, which is a primary route for the transportation of goods and people, thus playing a significant role in the region's economy and connectivity. The County Department of Infrastructure is responsible for roads and transport, public works, and disaster management. Due to its expansiveness and population density, the department of

infrastructure faces enormous challenges in providing effective road infrastructure, given limited resources. The existing road coverage in Nakuru County is 9,654.10 km, categorized into: A (International Trunk), B (National Trunk), C (Primary), D (Secondary), E (Minor), SPR (Special Purpose), and U (Unclassified).

3.4 Population of the Study

According to Stockemer and Bordeleau (2023), a research population comprises all elements, individuals, or objects that possess the specific characteristics required for scientific investigation. For this study, the research population consisted of 447 stakeholders involved in road infrastructure development and management across Nakuru County's 9,654.10 km road network system. This population represented a comprehensive cross-section of individuals directly engaged in road infrastructure projects, including senior county officials, engineers, administrators, elected leaders, and community representatives.

The population was structured to include Department of Roads Senior Officials, comprising the CECM Roads, the Chief Officer, and the Director of Roads; County Road Engineers; Sub County Administrators from all eleven sub-counties; Ward Administrators and Members of County Assemblies representing all fifty-five wards; and Community Representatives. The Community Representatives were individuals involved in road project implementation and monitoring across all sub-counties in Nakuru County. Their inclusion ensured grassroots perspectives were integrated into the study, complementing the technical expertise and governance oversight provided by other groups.

This diverse composition provided comprehensive coverage of strategic leadership, technical oversight, governance accountability, and community participation in road

infrastructure projects. Department of Roads Senior Officials offered policy direction, County Road Engineers contributed technical expertise, Sub-County Administrators coordinated implementation at the local level, Ward Administrators and Members of County Assemblies enhanced governance oversight, while Community Representatives brought in the views of local residents with prior road project experience. National government agencies not operating in the county, contractors, and community representatives not directly engaged in project implementation were excluded from the study.

Table 2

Distribution of the Population of the Study

Category	Frequency	Percentage
Department of Roads Senior Officials	3	0.74
County Road Engineers	4	0.49
Sub County Administrators	11	2.72
Ward Administrators	55	13.57
Members of County Assemblies	55	13.57
Community Representatives	319	68.91
Total	447	100.00

Source: Nakuru County Government (2025)

3.5 Sampling Procedure and Sample Size

Determining an appropriate sample size and sampling procedure was crucial to collecting representative data to address the research objectives. This section details the approach used to determine the sample size and select study participants.

3.5.1 Sample Size

Sample size determination is a critical aspect of research design that directly influences the statistical power and generalizability of research findings. As defined by Israel

(2003), sample size refers to the number of elements selected from a population to constitute a representative subset for study purposes. For this research, Yamane's (1967) formula was selected for sample size determination. The formula is expressed as n = N / (1 + N(e)²), where n represents the sample size to be determined, N denotes the total population size of 447, and e represents the level of precision, set at 0.05 for a 95% confidence level. The choice is informed by the reliability in determining sample sizes for known populations while maintaining statistical precision. The formula's assumptions of normality and a finite population are well aligned with the characteristics of the current study population. Applying the formula to the population of 447 stakeholders:

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{447}{1 + 447(0.05^2)} = \frac{447}{1 + 447(0.0025)}$$

$$n = \frac{447}{1 + 1.1175} = \frac{447}{2.1175} \approx 211$$

Therefore, the study included 211 respondents.

3.5.2 Sampling Procedure

Kothari (2004) defines the sampling procedure as the systematic process of selecting representative elements from a population to ensure the validity of generalizing the findings. This study employs proportionate stratified random sampling to ensure adequate representation across all stakeholder categories while maintaining the relative proportions of the population strata. This method was selected because it enables precise representation of each subgroup within the population while reducing sampling error through stratification.

The implementation of proportionate stratified random sampling in this study involves calculating stratum-specific sample sizes based on each stratum's population proportion. This approach ensures that each stakeholder category is represented in the final sample in proportion to their presence in the overall population, thereby maintaining the structural integrity of the population in the sample. The sampling procedure used official registers and databases to randomly select participants within each stratum, ensuring systematic, unbiased selection.

Table 3

Sample Size Distribution

Category	Population (N)	Sample (n)
Department of Roads Senior Officials	3	1
County Road Engineers	4	2
Sub County Administrators	11	5
Ward Administrators	55	26
Members of County Assemblies	55	26
Community Representatives	319	151
Total	447	211

The sample sizes ranged from 1 respondent among the Department of Roads senior officials to 151 members of the Project Implementation Teams. Based on the sample distribution, there was adequate representation across all stakeholder categories, while maintaining coverage for meaningful analysis. The larger sample size for community representatives reflects their significant role in project implementation and monitoring, while the smaller samples for technical and administrative positions align with their specialized roles in the road infrastructure development process.

3.6 Instrumentation

Data collection instruments are the tools researchers use to collect the necessary data to achieve the intended objectives (Hair Jr., Page & Brunsveld, 2019). This study used primary data gathered through a structured questionnaire containing closed-ended questions designed on a Likert scale with multiple sections. This approach enabled the researcher to explore opinions, behaviors, experiences, and phenomena associated with the study variables. The use of questionnaires facilitated data collection from a large group and simplified data analysis. Quantitative data from the questionnaires were collected and analyzed for all variables.

3.6.1 Pilot Study

To confirm that the data gathered permitted answering the investigative questions, pilot testing was conducted (Saunders *et al*., 2012). This research required a pilot study, as it helps establish the validity and reliability of the research tools and instruments (Bartlett, 2014). According to Newing (2010), pilot testing is a very important exercise that should not be underestimated, as some questions may be misunderstood, misinterpreted, misplaced in the questionnaire, or even fail to produce information of any worth.

In this investigation, the pilot test was conducted on one out of every ten (10) samples, comprising twenty (20) questionnaires. Piloting was conducted in Uasin Gishu County, with randomly selected respondents used to test the tool. Uasin Gishu was selected because of similarities in socio-economic and infrastructural features with Nakuru County, particularly in road infrastructure. The location was good for evaluating the applicability and clarity of the research instruments.

The pilot population reflected the stakeholder groups in the principal study and comprised Department of Roads Senior Officials, County Road Engineers, Sub-County

Administrators, Ward Administrators, Members of County Assembly, and Community Representatives who had been involved in road projects in the County in the past. This ensured that the instrument was subjected to different groups of people, both with technical and community perspectives.

Participants in the pilot test were excluded from the final study sample to eliminate response biases and maintain the authenticity of the final study outcomes. Schindler and Cooper (2006) state that respondents in a pilot test need not be statistically representative when the objective is to determine the validity and reliability of the instruments.

3.6.2 Validity of the Instrument

Validity refers to inferences that are accurate and meaningful and are founded on research findings (Golafsheni, 2003). The researcher had to establish the content validity of the instruments to ascertain the accuracy and reliability of the information to be gathered in the field. The study adopted content validity, in which the principles were discussed with the supervisor and peers to determine whether the construct represents the domain.

Validity also explains the extent to which a tool determines what it claims (Creswell and Creswell, 2017). Construct legitimacy describes merely the extent to which a notion, tip, or action (a construct) is directly transformed into an operational reality. Creswell and Creswell (2017) assume that there are usually two techniques for assessing content validity: asking questions about the tool or assessment and/or obtaining the opinion of an expert in the field, primarily supervisors and colleagues. The researchers' supervisor evaluated the construct and content validity. The supervisor evaluated the questionnaire items' alignment with the theoretical constructs and their relevance to the study objectives. This professional review confirmed that the items indeed measured what they

were intended to measure, thereby maximizing the validity of the research tool (Bolarinwa, 2015).

3.7.3 Reliability of the Instrument

Mugenda and Mugenda (2003) define reliability as the degree to which a research instrument yields consistent results or data across repeated trials. The pilot study enabled the researcher to assess the clarity of the questionnaire items, and those found to be inadequate or vague were modified to improve the quality of the research instrument, thereby increasing its reliability. This study used Cronbach's alpha as a reliability test to assess the questionnaire items. According to Creswell and Creswell (2017), reliability is defined as the extent to which a person administering a questionnaire as a data collection instrument to a respondent twice would obtain similar results on the second interview as on the first. This assisted in determining whether the constructs were clear and whether different respondents could interpret the questions similarly. Decision Rule: To achieve this in the test data, the study considered a Cronbach's alpha coefficient of 0.7 or higher as reliable. Kothari and Gaurav (2014) assert that a value of 0.7 and higher for Cronbach's alpha (α) indicates reliable items in the questionnaire, explaining that their internal consistency is relatively high. The results are presented in Table 4.

Table 4

Reliability Results of Pilot Test

Variable	No. of Items	Cronbach's Alpha (α)	Interpretation
Performance Monitoring	7	0.811	Reliable
Quality Monitoring	7	0.823	Reliable
Stakeholder Monitoring	7	0.802	Reliable
Report Monitoring	7	0.789	Reliable
Implementation of Road Projects	7	0.844	Reliable
Overall Reliability	35	0.820	Highly Reliable

The pilot test results indicated that all constructs exceeded the recommended threshold of 0.7, confirming that the items were consistent in measuring the intended variables. Performance monitoring achieved a Cronbach's Alpha of 0.811, while quality monitoring obtained 0.823, both demonstrating strong reliability. Stakeholder monitoring yielded 0.802, showing dependable internal consistency, whereas report monitoring recorded 0.789, also within the acceptable range. The implementation of road projects produced the highest reliability coefficient of 0.844, reflecting excellent consistency among its items. The overall reliability of the instrument was 0.820, signifying that the entire questionnaire was highly reliable for assessing project monitoring practices and their influence on the implementation of road projects in Nakuru County.

3.7 Data Collection Procedures

Data collection, according to Leavy (2015), is the methodical, systematic collection of information pertinent to the study's sub-problems. For the research to be carried out, authorization was obtained from Kabarak University and also (KUREC) ethical clearance. A letter of authorization from the university and KUREC ethical clearance

were used to secure a license from the National Commission of Science, Technology, and Innovation (NACOSTI). Permission was also obtained from the County Government of Nakuru, the County Government of Uasin Gishu, and other relevant stakeholders. After receiving all necessary permissions, data collection was conducted using a drop-and-pick technique. The study posed no unforeseen risks, as it was a low-risk investigation into the effect of project monitoring practices on road project implementation.

3.8 Data Analysis and Presentation

According to Gordon (2023), data analysis involves the systematic examination of collected data to uncover patterns, relationships, and trends that help answer research questions. This study employed both descriptive and inferential statistics using SPSS version 26.0 to analyze data collected through questionnaires. Heumann, Schomaker, and Shalabh (2023) emphasize that descriptive statistics provide fundamental summaries of data characteristics through measures of central tendency and dispersion.

Following Maina's (2021) guidelines for linear regression in social sciences, the study adopted simple linear regression models to test each objective independently. This approach enabled the researcher to determine the individual influence of each project monitoring practice on road project implementation.

The four simple linear regression models were specified as follows:

Equation 1: $Y = \beta_0 + \beta_1 X_1 + \varepsilon$

Equation 2: $Y = \beta_0 + \beta_2 X_2 + \varepsilon$

Equation 3: $Y = \beta_0 + \beta_3 X_3 + \varepsilon$

Equation 4: $Y = \beta_0 + \beta_4 X_4 + \varepsilon$

Where:

- Y = Implementation of Road Projects (Dependent Variable)
- X_1 = Performance Monitoring Practice
- X_2 = Quality Monitoring Practice
- X_3 = Stakeholder Monitoring Practice
- X_4 = Report Monitoring Practice
- β_0 = Constant Term (Y-intercept)
- β_1, β_2, β_3, β_4 = Regression Coefficients
- ε = Error Term

Hinton *et al*. (2023) suggest assessing model fit using the coefficient of determination (R^2) to explain variance, the F-statistic to test overall model significance ($p < 0.05$), and t-values to evaluate the significance of individual coefficients. Additionally, a Pearson's correlation analysis assessed relationships between variables, with interpretation thresholds of $0.1 \leq r < 0.3$ for weak correlation, $0.3 \leq r < 0.5$ for moderate correlation, and $r \geq 0.5$ for strong correlation. Each of the four models was analyzed and interpreted independently to determine the specific influence of each monitoring practice on road project implementation in Nakuru County. The findings were interpreted based on both statistical significance and their practical implications for road infrastructure management and performance.

3.9 Diagnostic Tests

Diagnostic tests are critical to validating the assumptions underlying regression analysis, ensuring the results are trustworthy and reliable. This study applied several diagnostic tests, each selected based on well-established statistical guidelines.

3.9.1 Normality Test

Normality of data distribution is a key assumption for many parametric tests, including regression. According to Yockey (2023), normality tests such as the Kolmogorov-Smirnov and Shapiro-Wilk provide statistical measures to assess whether data deviate significantly from normality. These tests produce p-values; values less than 0.05 indicate non-normality, suggesting a need for data transformation or nonparametric alternatives. This study employed both Kolmogorov-Smirnov and Shapiro-Wilk tests to assess the normality of the variables.

3.9.2 Autocorrelation Test

Residual independence is a core assumption in regression analysis. The Durbin-Watson statistic, as described by Nichols and Edlund (2023), tests for autocorrelation among residuals. The test statistic ranges from 0 to 4, with a value close to 2 indicating no autocorrelation. Values near 0 or 4 suggest positive or negative autocorrelation, respectively. The study applied the Durbin-Watson test to detect any autocorrelation in the regression residuals.

3.9.4 Linearity Test

Linearity between dependent and independent variables ensures that the regression model correctly specifies the relationship. Nichols and Edlund (2023) suggest testing linearity by adding polynomial terms (e.g., squared or cubed) to the regression model and evaluating changes in R^2. Non-significant improvements in R^2 indicate that the linear model adequately fits the data. This study tested for linearity by incorporating polynomial terms and assessing changes in R^2 to confirm the appropriateness of a linear regression model.

3.10 Ethical Considerations

Ethical considerations involve the moral standards the researcher should uphold at all stages of the research process. Since the study involved people, the researcher has the responsibility of protecting participants, building trust with them, and safeguarding them against misconduct to promote the integrity of the research. Bordens and Abbott (2008) caution that a researcher must obtain official permission from the affiliated institutions before conducting research for regulatory purposes. Before data collection commenced, the researcher obtained all necessary documents, including an introduction letter from the graduate school at Kabarak University and a research permit from the National Commission for Science, Technology, and Innovation (NACOSTI). Additionally, the researcher assured respondents that strict confidentiality would be maintained in handling their responses.

Confidentiality was ensured by anonymizing participant data and securing it in password-protected databases. Participants' anonymity was maintained by omitting personal identifiers and using participant numbers instead. Informed consent was obtained through a detailed consent form (Appendix III) that explained the study's purpose, procedures, and the voluntary nature of participation. Ethical approval was secured from relevant bodies by submitting a comprehensive research project that addressed potential risks and mitigation strategies. Additionally, the research team's qualifications in ethical practices were highlighted to emphasize their commitment to participant welfare. The study adhered to the no-harm principle, ensuring that no physical, psychological, social, or environmental harm occurred to participants or the environment. Findings were disseminated ethically, ensuring accurate reporting and accessibility while protecting participant identity.

Data was safeguarded through privacy and confidentiality measures that ensured careful, controlled handling procedures during data collection, storage, access, and dissemination, in compliance with data protection regulations. No identifying information was accessed by anyone except the researcher and authorized research team members during the research period. Hard data were kept under lock and key, while soft data were protected using encryption codes and passwords throughout the research process. Upon conclusion of the research, no identifying information was included in any reports or publications. The data obtained were retained safely for 1 year and thereafter destroyed. Upon completion of the study, the researcher disseminated the results through publication in reputable journals, ensuring free access to the body of knowledge.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSIONS

4.1 Introduction

This chapter presents the analysis, interpretation, and presentation of the data collected from respondents in the study on the Influence of Project Monitoring Practices on the Implementation of Road Projects in Nakuru County, Kenya. Data were collected through structured questionnaires and analyzed using tables and descriptive statistics.

4.2 Response Rate

Table 5 illustrates the response rate for the study, showing the number of expected, received, and non-received responses.

Table 5

Response Rate

Response Rate	Frequency	Valid Percent
Valid Expected Responses	211	100.0%
Received Responses	176	83.4%
Responses Not Received	35	16.6%

Of the 211 expected responses, 176 were received, yielding a valid response rate of 83.4%. This indicates a high level of participation from the targeted sample. Conversely, 35 responses were not received, accounting for 16.6% of the expected total. The 83.4% response rate, with 176 of 211 expected responses received, indicates strong engagement. This aligns with Baruch and Brooks (2022), who noted that a response rate of 80% or higher is considered robust, significantly reducing non-response bias and ensuring reliable data for organizational studies, thus supporting the study's high participation level.

4.3 Demographic Information

4.3.1 Level of Education

Respondents were asked to indicate their level of education. Table 6 summarizes the educational qualifications of the respondents.

Table 6

Level of Education

Highest Level of Education	Frequency	Valid Percent
Primary	0	0
Secondary	6	3.4
Certificate	118	67.0
Diploma	28	15.9
Degree	13	7.4
Post Graduate	11	6.3
Total	176	100.0

The respondents' educational backgrounds are detailed in Table 5. The majority of respondents held a Certificate, held by 118 individuals (67.0% of the sample), followed by 28 (15.9%) with a Diploma, 13 (7.4%) with a Degree, 11 (6.3%) with a Postgraduate qualification, and 6 (3.4%) with Secondary education. This distribution, with a strong emphasis on vocational and technical education, aligns well with the study variables on project monitoring and implementation.

4.3.2 Years of Work Experience

Respondents were asked to indicate their years of work experience in the road construction sector. Table 7 illustrates the distribution of respondents' experience levels.

Table 7

Years of Work Experience

Years of Work Experience	Frequency	Valid Percent
Less than 5 years	98	55.7
5–10 years	4	2.3
11–15 years	65	36.9
More than 15 years	8	4.5
Other	1	0.6
Total	176	100.0

The majority of respondents (98 or 55.7%) had less than 5 years of experience, followed by those with 11–15 years (65 or 36.9%), those with more than 15 years (8 or 4.5%), and those with 5–10 years (4 or 2.3%). One respondent (0.6%) fell into an unspecified category. This distribution shows a workforce with a significant proportion of relatively new entrants, combined with a substantial group of mid-level experienced professionals, which could provide a blend of fresh perspectives and practical expertise for road project implementation.

4.3.3 Number of Projects Handled

Respondents were asked to indicate the number of projects they have handled. Table 8 presents the distribution of respondents by the number of projects handled.

Table 8

Number of Projects Handled

Number of Projects Handled	Frequency	Valid Percent
Less than 10	69	39.2
10–50	67	38.1
51–100	27	15.3
More than 100	13	7.4
Total	176	100.0

Table 8 outlines the study participants' exposure to the project. The majority of respondents (69) had handled fewer than 10 projects, representing 39.2% of the sample. This was closely followed by those who had handled 10–50 projects, representing 67 (38.1%). Those who had handled 51–100 projects accounted for 15.3% (27 respondents), whereas those who had handled more than 100 projects formed the smallest group, with 13 respondents (7.4%). The distribution indicates a sample with varied project experience, with a significant proportion having moderate to low project exposure, potentially reflecting a workforce with diverse levels of involvement in road projects.

4.4 Descriptive Statistics

This section presents descriptive statistics for the key variables under study. Each subsection provides an analysis of respondents' perceptions of specific aspects of project monitoring practices and their effects on the implementation of road projects in Nakuru County, Kenya.

4.4.1 Performance Monitoring Practice

The researcher sought to assess respondents' views on the organization's performance monitoring practices and their relationship to road project implementation. The findings are summarized in Table 9.

Table 9

Performance Monitoring Practice

Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation
The project team regularly tracks and monitors project milestones against the planned schedule.	23.3	23.3	9.7	24.4	19.3	3.28	1.415
There is consistent use of specific Key Performance Indicators (KPIs) to measure project progress.	21.0	21.6	7.4	20.5	29.5	3.49	1.428
The budget monitoring system effectively tracks all project expenses in real-time	25.6	21.0	6.3	21.0	26.1	3.35	1.438
The firm regularly conducts performance reviews to assess project progress against set targets.	42.6	30.1	3.4	9.7	14.2	2.64	1.377
The team maintains detailed records of all schedule variations and their causes.	31.4	43.4	6.3	8.0	10.9	2.54	1.246
There are clear procedures for monitoring resource utilization throughout the project.	29.5	29.5	5.7	21.0	14.2	2.97	1.387
Performance data is regularly used to make project adjustment decisions.	31.3	31.3	8.5	15.3	13.6	2.85	1.345
Average						3.02	1.377

Key: SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

The findings indicate a generally moderate perception of performance monitoring practices. From the results, 43.7% of respondents (Mean = 3.28, Std. Dev. = 1.415) agreed that the project team regularly tracks and monitors project milestones, while 46.6% disagreed and 9.7% were neutral. Similarly, 50.0% (Mean = 3.49, Std. Dev. = 1.428) agreed that specific Key Performance Indicators (KPIs) are consistently used,

with 42.6% disagreeing and 7.4% neutral. Budget monitoring was supported by 47.1% (Mean = 3.35, Std. Dev. = 1.438), with 46.6% disagreeing and 6.3% neutral. Only 23.9% (Mean = 2.64, Std. Dev. = 1.377) agreed that performance reviews are regularly conducted, with 72.7% disagreeing and 3.4% neutral. Detailed records of schedule variations were acknowledged by 18.9% (Mean = 2.54, Std. Dev. = 1.246), with 74.8% disagreeing and 6.3% neutral. Clear procedures for resource utilization monitoring were supported by 35.2% (Mean = 2.97, Std. Dev. = 1.387), with 59.0% disagreeing and 5.7% neutral. Finally, 28.9% (Mean = 2.85, Std. Dev. = 1.345) agreed that performance data informs project adjustments, with 62.6% disagreeing and 8.5% neutral.

With an overall mean of 3.02 and a standard deviation of 1.377, the results suggest weak and inconsistently applied performance monitoring practices. This contrasts with Nyakala *et al*. (2024), who reported a moderately positive correlation between performance monitoring and project success in South African municipalities. High disagreement, particularly on performance reviews (72.7%) and schedule variation records (74.8%), highlights significant gaps and necessitates enhanced oversight and standardized monitoring frameworks.

4.4.2 Quality Monitoring Practice

This subsection examines the extent of quality monitoring practices within the organization and their perceived effect on road project implementation. The results are detailed in Table 10.

Table 10

Quality Monitoring Practice

Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation
The firm conducts regular quality tests on construction materials before use	33.0	35.8	6.8	13.1	11.4	2.74	1.400
The quality monitoring team performs daily site inspections	38.1	31.8	2.8	19.3	8.0	2.67	1.488
The firm maintains detailed quality control documentation throughout the project	25.0	18.8	1.7	31.3	23.3	3.49	1.563
The firm strictly follows established quality standards for road construction	27.3	34.1	7.4	13.6	17.6	2.86	1.454
Implementation team regularly calibrates and maintains construction equipment	24.4	34.1	5.7	17.0	18.8	2.97	1.527
There is a clear system for addressing quality-related issues	38.1	30.7	6.3	12.5	12.5	2.71	1.364
Quality monitoring reports influence project decisions	30.1	44.3	2.3	12.5	10.8	2.70	1.416
Average						2.88	1.459

Key: SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

The study findings revealed that 24.5% (Mean = 2.74, Std. Dev. = 1.400) agreed that regular quality tests are conducted on materials, with 68.8% disagreeing and 6.8% neutral. Daily site inspections were supported by 27.3% (Mean = 2.67, Std. Dev. = 1.488), with 69.9% disagreeing and 2.8% neutral. However, 54.6% (Mean = 3.49, Std. Dev. = 1.563) agreed that detailed quality control documentation is maintained, with 43.8% disagreeing and 1.7% neutral. Adherence to quality standards was acknowledged by 31.2% (Mean = 2.86, Std. Dev. = 1.454), with 61.4% disagreeing and 7.4% neutral.

Equipment calibration was agreed upon by 35.8% (Mean = 2.97, Std. Dev. = 1.527), with 58.5% disagreeing and 5.7% neutral. A clear system for addressing quality issues was recognized by 25.0% (Mean = 2.71, Std. Dev. = 1.364), with 68.8% disagreeing and 6.3% neutral. Finally, 23.3% (Mean = 2.70, Std. Dev. = 1.416) agreed that quality reports influence decisions, with 74.4% disagreeing and 2.3% neutral.

The average of 2.88, with a standard deviation of 1.459, indicates a generally negative perception of quality control practices. These results contrast with those of Nyakala et al. (2024), who identified a moderate, positive correlation between quality monitoring and road construction effectiveness in South African municipalities. High disagreement on regular quality tests (68.8%) and on the influence of quality reports (74.4%) highlights critical deficiencies, necessitating improved quality assurance mechanisms.

4.4.3 Stakeholder Monitoring Practice

The study explored the role of stakeholder monitoring in fostering successful road project implementation. Table 11 presents the summarized responses.

Table 11

Stakeholder Monitoring Practice

Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation
The firm holds regular meetings with all key stakeholders	33.5	36.4	6.3	13.1	10.8	2.71	1.397
Local community feedback is actively sought and incorporated into project decisions	23.9	26.7	6.3	25.6	17.6	3.09	1.585
The firm maintains clear communication channels with all stakeholders	33.0	37.5	3.4	14.8	11.4	2.74	1.448
Stakeholder concerns are promptly addressed and documented	40.9	27.3	6.8	13.1	11.9	2.68	1.350
There is a regular update for stakeholders on project progress	45.5	29.5	1.7	12.5	10.8	2.54	1.335
Stakeholder engagement plans are regularly reviewed and updated	36.4	31.3	7.4	13.1	11.9	2.73	1.377
The firm maintains a stakeholder register that is regularly updated	22.7	33.0	6.3	22.2	15.9	3.05	1.589
Average						2.79	1.440

Key: SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

The study findings indicated that 23.9% (Mean = 2.71, Std. Dev. = 1.397) agreed that regular stakeholder meetings are held, with 69.9% disagreeing and 6.3% neutral. Community feedback incorporation was agreed upon by 43.2% (Mean = 3.09, Std. Dev. = 1.585), with 50.6% disagreeing and 6.3% neutral. Clear communication channels were recognized by 26.2% (Mean = 2.74, Std. Dev. = 1.448), with 70.5% disagreeing and 3.4% neutral. Prompt addressing of stakeholder concerns was supported by 25.0% (Mean = 2.68, Std. Dev. = 1.350), with 68.2% disagreeing and 6.8% neutral. Regular updates to

stakeholders were agreed upon by 23.3% (Mean = 2.54, Std. Dev. = 1.335), with 75.0% disagreeing and 1.7% neutral. Engagement plan reviews were acknowledged by 25.0% (Mean = 2.73, Std. Dev. = 1.377), with 67.7% disagreeing and 7.4% neutral. Maintaining a stakeholder register was agreed upon by 38.1% (Mean = 3.05, Std. Dev. = 1.589), with 55.7% disagreeing and 6.3% neutral.

The average mean of 2.79 and the standard deviation of 1.440 suggest a lukewarm perception of stakeholder engagement. These findings differed from those of Magassouba *et al*. (2019), who reported that stakeholder involvement in monitoring enhances project success in Guinea by identifying challenges early. These results indicate a need for improved communication channels and regular stakeholder engagement.

4.4.4 Report Monitoring Practice

This section evaluates the organization's practices for monitoring reports and their impact on road project implementation. The findings are outlined in Table 12.

Table 12

Report Monitoring Practice

Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation
Project reports are submitted according to a fixed schedule	23.9	39.8	9.1	9.1	18.2	2.58	1.392
Reports include comprehensive financial and technical details	31.3	34.7	5.1	12.5	16.5	2.48	1.423
There is proper maintenance of standardized reporting templates for consistency	36.9	29.5	3.4	10.2	19.9	2.47	1.364
Reports are shared with all relevant stakeholders promptly	32.6	20.6	4.6	19.4	22.9	2.79	1.467
The reporting system effectively captures project challenges and solutions	27.3	19.3	7.4	23.9	22.2	2.94	1.494
There are well-maintained digital copies of all project reports	28.4	29.0	9.7	13.6	19.3	2.66	1.427
Report findings are used to improve project implementation	43.2	20.5	5.1	14.2	17.0	2.41	1.360
Average						2.62	1.418

Key: SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

The study findings revealed that 27.3% (Mean = 2.58, Std. Dev. = 1.392) agreed that reports are submitted on schedule, with 63.7% disagreeing and 9.1% neutral. Comprehensive report details were acknowledged by 29.0% (Mean = 2.48, Std. Dev. = 1.423), with 66.0% disagreeing and 5.1% neutral. Standardized templates were supported by 30.1% (Mean = 2.47, Std. Dev. = 1.364), with 66.4% disagreeing and 3.4% neutral. Prompt sharing of reports was agreed upon by 42.3% (Mean = 2.79, Std. Dev. = 1.467), with 53.2% disagreeing and 4.6% neutral. Capturing challenges and solutions was

recognized by 46.1% (Mean = 2.94, Std. Dev. = 1.494), with 46.6% disagreeing and 7.4% neutral. Digital report maintenance was agreed upon by 32.9% (Mean = 2.66, Std. Dev. = 1.427), with 57.4% disagreeing and 9.7% neutral. Support for using report findings for improvement was 31.2% (Mean = 2.41, Std. Dev. = 1.360), with 63.7% disagreeing and 5.1% neutral.

The average mean of 2.62 and the standard deviation of 1.418 reflect an unfavorable view of reporting practices. These findings align with Brown (2020), who identified challenges in standardizing reporting formats in construction projects, as evidenced by the high disagreement with standardized templates (66.4%) and comprehensive reporting (66.0%) in this study. However, they disagree with El Khatib *et al*. (2022), who emphasized project reports as critical for tracking progress and enabling corrective actions. These results suggest a need for standardized reporting formats and improved transparency.

4.4.5 Implementation of Road Projects

This section evaluates the organization's practices for implementing road projects. The findings are outlined in Table 13.

Table 13

Implementation of Road Projects

Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation
Projects are completed within the approved timeline	25.0	37.5	1.1	17.0	19.3	2.68	1.456
Final project costs remain within the initial budget	28.6	32.0	6.3	15.4	17.7	2.62	1.432
Completed roads meet quality specifications	33.5	28.4	9.1	14.2	14.8	2.48	1.392
User satisfaction with completed roads is high	27.3	23.9	8.5	13.1	27.3	2.89	1.512
Environmental impact mitigation measures are effectively implemented	42.0	20.5	5.1	14.2	18.2	2.46	1.465
Project objectives are consistently achieved	41.5	22.7	3.4	14.2	18.2	2.45	1.463
Completed roads require minimal maintenance within the first year	39.4	16.6	5.7	18.3	20.0	2.63	1.532
Average						2.60	1.465

Key: SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

The findings reveal that 36.3% (Mean = 2.68, Std. Dev. = 1.456) agreed that projects are completed within the approved timeline, with 62.5% disagreeing and 1.1% neutral. Staying within budget was supported by 33.1% (Mean = 2.62, Std. Dev. = 1.432), with 60.6% disagreeing and 6.3% neutral. Meeting quality specifications was acknowledged by 29.0% (Mean = 2.48, Std. Dev. = 1.392), with 61.9% disagreeing and 9.1% neutral. User satisfaction was agreed upon by 40.4% (Mean = 2.89, Std. Dev. = 1.512), with 51.2% disagreeing and 8.5% neutral. Environmental impact mitigation was supported by

32.4% (Mean = 2.46, Std. Dev. = 1.465), with 62.5% disagreeing and 5.1% neutral. Achievement of project objectives was recognized by 32.4% (Mean = 2.45, Std. Dev. = 1.463), with 64.2% disagreeing and 3.4% neutral. Minimal maintenance needs were agreed upon by 38.3% (Mean = 2.63, Std. Dev. = 1.532), with 56.0% disagreeing and 5.7% neutral.

The average mean of 2.60 and the standard deviation of 1.465 indicate a negative perception of road project implementation practices. These findings align with Okolie and Edo (2023), who identified socio-economic and institutional barriers, including poor project management, as contributors to infrastructure project failures in Nigeria, and they align with the high disagreement on achieving project objectives (64.2%) and meeting quality specifications (61.9%) in this study. However, they disagree with Mutua *et al*. (2020), who found that effective monitoring practices (R^2=0.787) significantly predicted timely completion and cost-effectiveness in road projects in Kilifi County, Kenya. These results highlight the need for improved project planning, quality assurance, and environmental mitigation strategies.

4.5 Diagnostic Tests

In this section, we present the diagnostic tests conducted to assess the assumptions underlying our regression analysis. Each table is accompanied by a brief introduction to facilitate understanding of the results.

4.5.1 Normality Test

To determine if the data follow a normal distribution, both the Kolmogorov-Smirnov and Shapiro-Wilk tests were applied to the variables under study. The results are summarized in Table 14.

Table 14

Normality Test

Tests of Normality	Kolmogorov-Smirnov		Shapiro-Wilk	
Variable	Statistic	Sig.	Statistic	Sig.
Performance Monitoring Practice	0.068	0.200	0.982	0.074
Quality Monitoring Practice	0.071	0.150	0.979	0.082
Stakeholder Monitoring Practice	0.065	0.200	0.984	0.092
Report Monitoring Practice	0.069	0.180	0.981	0.068
Implementation of Road Projects	0.073	0.140	0.977	0.075

A p-value < 0.05 indicates non-normality, suggesting the need for transformations or non-parametric methods (Yockey, 2023).

Table 14 presents the results of the normality test using both the Kolmogorov-Smirnov and the Shapiro-Wilk statistics. The Shapiro-Wilk p-values for all variables, including Performance Monitoring (0.074), Quality Monitoring (0.082), Stakeholder Monitoring (0.092), Report Monitoring (0.068), and Implementation of Road Projects (0.075), are all greater than 0.05. This indicates that the data for each variable is normally distributed and therefore suitable for parametric statistical analysis.

4.5.2 Autocorrelation Test

The Durbin-Watson statistic was used to detect autocorrelation in the regression model residuals. The result is shown in Table 15.

Table 15

Durbin-Watson Test Results

Model	Durbin-Watson Statistic
Implementation of Road Projects	1.947

A Durbin-Watson statistic close to 2 indicates no significant autocorrelation. The Durbin-Watson test was used to check for autocorrelation in the residuals of the regression model for the Implementation of Road Projects. The test yielded a Durbin-Watson statistic of 1.947, as detailed in Table 16. This value is very close to 2, indicating no significant autocorrelation in the residuals. Thus, the residuals appear independent, suggesting that the model's assumption of error independence is met and supporting the validity of the regression results.

4.5.4 Linearity Test

To assess the linearity assumption, polynomial terms were added to the regression model, and the R^2 changed. The results are summarized in Table 16: Using Polynomial Terms in Regression.

Table 16

Linearity Test Results

Model	R^2	Adjusted R^2	F Change	Sig. F Change
Original (Linear)	0.621	0.612	-	-
With Squared Terms	0.634	0.618	2.874	0.091
With Cubed Terms	0.641	0.620	1.932	0.167

Non-significant F Change ($p > 0.05$) suggests linearity. The linearity of the relationship between the predictors and the dependent variable, Implementation of Road Projects,

was tested by adding polynomial terms to the regression model. The original linear model had an R^2 of 0.621, which increased slightly to 0.634 when squared terms were added, showing a modest but not statistically significant improvement (F Change = 2.874, Sig. F Change = 0.091). Adding cubed terms further increased R^2 to 0.641, but the change was not significant (F Change = 1.932, Sig. F Change = 0.167). These results suggest that the linear model adequately captures the relationship between the predictors and the dependent variable, with no significant enhancement from polynomial terms, confirming the linearity assumption.

4.6 Correlation Analysis

This section presents four independent bivariate correlation analyses, each examining the relationship between one project monitoring practice and the Implementation of Road Projects. Pearson's correlation coefficient was used to assess the strength and direction of the linear associations. All correlations were significant at the 0.01 level (2-tailed), providing justification for subsequent simple linear regression testing.

4.6.1 Performance Monitoring Practice and Implementation of Road Projects

The correlation analysis assesses the linear relationship between Performance Monitoring Practice and Implementation of Road Projects. The results are presented in Table 17.

Table 17

Performance Monitoring Practice and Implementation of Road Projects

	Implementation of Road Projects	Performance Monitoring Practice
Implementation of Road Projects	1.000	.527
Performance Monitoring Practice	.527	1.000
Sig. (2-tailed)	.000	
N	176	176

Note: Correlation is significant at the 0.01 level (2-tailed).

The correlation coefficient in Table 18 ($r = .527$, $p < .001$) indicates a moderate positive relationship between Performance Monitoring Practice and Implementation of Road Projects. This suggests that higher levels of performance monitoring are associated with improved project outcomes. The finding is consistent with Nyakala *et al*. (2024), who reported a similar moderate correlation in South African road construction projects. However, the moderate strength, coupled with descriptive evidence of inconsistent KPI application and infrequent performance reviews (only 23.9% agreement on regular reviews), highlights that current practices in Nakuru County are not fully optimized, thereby limiting their potential contribution to project success.

4.6.2 Quality Monitoring Practice and Implementation of Road Projects

The correlation analysis evaluates the linear association between Quality Monitoring Practice and Implementation of Road Projects. The results are shown in Table 18.

Table 18

Quality Monitoring Practice and Implementation of Road Projects

	Implementation of Road Projects	Quality Monitoring Practice
Implementation of Road Projects	1.000	.538
Quality Monitoring Practice	.538	1.000
Sig. (2-tailed)	.000	
N	176	176

Note: Correlation is significant at the 0.01 level (2-tailed).

The correlation coefficient in Table 19 ($r = .538$, $p < .001$) reveals a moderate positive relationship between Quality Monitoring Practice and Implementation of Road Projects. This implies that stronger quality assurance practices correspond to better project implementation. The result aligns with Nyakala *et al*. (2024), who identified a comparable moderate correlation in municipal road projects. Despite statistical significance, the moderate coefficient and descriptive findings, such as high disagreement with regular material testing (68.8%) and the influence of quality reports on decisions (74.4%), indicate that quality monitoring in Nakuru County lacks consistency, necessitating enhanced processes to realize its full supportive role.

4.6.3 Stakeholder Monitoring Practice and Implementation of Road Projects

The correlation analysis examines the linear relationship between Stakeholder Monitoring Practice and the Implementation of Road Projects. The results are displayed in Table 19.

Table 19

Stakeholder Monitoring Practice and Implementation of Road Projects

	Implementation of Road Projects	Stakeholder Monitoring Practice
Implementation of Road Projects	1.000	.600
Stakeholder Monitoring Practice	.600	1.000
Sig. (2-tailed)	.000	
N	176	176

Note: Correlation is significant at the 0.01 level (2-tailed).

The correlation coefficient in Table 20 ($r = .600$, $p < .001$) demonstrates a strong positive relationship between Stakeholder Monitoring Practice and Implementation of Road Projects, positioning stakeholder engagement as a key driver of project success. This supports Ametepey *et al*. (2020), who identified stakeholder management as the most critical factor in infrastructure projects across developing countries. The robust association in Nakuru County underscores the importance of stakeholder involvement, yet descriptive data indicating substantial disagreement over regular meetings (69.9%) and progress updates (75.0%) suggest that existing mechanisms are inadequate to capitalize on this relationship fully.

4.6.4 Report Monitoring Practice and Implementation of Road Projects

The correlation analysis investigates the linear association between Report Monitoring Practice and Implementation of Road Projects. The results are presented in Table 20.

Table 20

Report Monitoring Practice and Implementation of Road Projects

	Implementation of Road Projects	Report Monitoring Practice
Implementation of Road Projects	1.000	.753
Report Monitoring Practice	.753	1.000
Sig. (2-tailed)	.000	
N	176	176

Note: Correlation is significant at the 0.01 level (2-tailed).

The correlation coefficient in Table 21 ($r = .753$, $p < .001$) reflects the strongest positive relationship observed, underscoring Report Monitoring Practice as the most influential factor in road project implementation. This finding resonates with Kerzner (2022) and Smith, Li, and Rafferty (2020), who highlight the importance of structured reporting for project control and improved outcomes. The high coefficient in Nakuru County affirms the pivotal role of timely and comprehensive reporting, although descriptive challenges with standardized templates (66.4% disagreement) and report detail (66.0% disagreement) point to opportunities for systemic enhancement.

4.7 Simple Linear Regression Analysis

This section presents the results of four independent simple linear regression analyses, each assessing the influence of one project monitoring practice on the Implementation of Road Projects. The general model is expressed as: $Y = \beta_0 + \beta_i X_i + \varepsilon$, where Y is the dependent variable, X_i is the respective monitoring practice, β_0 is the constant, β_i is the regression coefficient, and ε is the error term. Each analysis includes a model summary, ANOVA, and a coefficients table, followed by an interpretation.

4.7.1 Performance Monitoring Practice on Implementation of Road Projects

Table 21

Model Summary – Performance Monitoring Practice

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.527[a]	.278	.274	1.259

[a] Predictors: (Constant), Performance Monitoring Practice

The model summary in Table 22 shows that Performance Monitoring Practice explains 27.8% of the variance in Implementation of Road Projects ($R^2 = .278$), with an adjusted R^2 of .274 to account for model parsimony. The standard error of 1.259 indicates moderate prediction accuracy.

Table 22

ANOVA – Performance Monitoring Practice

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	107.132	1	107.132	67.561	.000[b]
Residual	276.133	174	1.587		
Total	383.265	175			

[b] Predictors: (Constant), Performance Monitoring Practice

Dependent Variable: Implementation of Road Projects

The ANOVA table in Table 23 confirms the model's statistical significance ($F = 67.561$, $p < .001$), meaning Performance Monitoring Practice significantly predicts Implementation of Road Projects.

Table 23

Regression Coefficients – Performance Monitoring Practice

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	1.846	.298		6.192	.000
Performance Monitoring Practice	.489	.059	.527	8.221	.000

Dependent Variable: Implementation of Road Projects

The coefficients in Table 24 reveal a significant positive effect ($\beta = .489$, $t = 8.221$, $p = 0.001$), indicating that a one-unit increase in Performance Monitoring Practice enhances road project implementation by 0.489 units. This supports the hypothesis that performance monitoring positively influences project outcomes. The moderate R^2 aligns with descriptive findings of inconsistent KPI application and infrequent reviews, suggesting that while the relationship is statistically robust, practical gaps limit its full potential in Nakuru County.

4.7.2 Quality Monitoring Practice on Implementation of Road Projects

Table 24

Model Summary – Quality Monitoring Practice

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.538[a]	.289	.285	1.245

[a] Predictors: (Constant), Quality Monitoring Practice

The model summary in Table 25 indicates that Quality Monitoring Practice accounts for 28.9% of the variance in Implementation of Road Projects ($R^2 = .289$), with an adjusted R^2 of .285 and a standard error of 1.245.

Table 25

ANOVA - Quality Monitoring Practice

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	110.891	1	110.891	71.512	.000[b]
Residual	269.374	174	1.548		
Total	380.265	175			

[b] Predictors: (Constant), Quality Monitoring Practice

Dependent Variable: Implementation of Road Projects

The ANOVA table in Table 25 demonstrates model significance ($F = 71.512$, $p < .001$), confirming that Quality Monitoring Practice is a meaningful predictor.

Table 26

Regression Coefficients - Quality Monitoring Practice

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	1.723	.301		5.725	.000
Quality Monitoring Practice	.512	.061	.538	8.456	.000

Dependent Variable: Implementation of Road Projects

The coefficients in Table 26 indicate a significant positive relationship ($\beta = .512$, $t = 8.456$, $p = 0.000$), suggesting that a one-unit increase in Quality Monitoring Practice boosts implementation by 0.512 units. This supports the hypothesis, yet the modest explanatory power and descriptive evidence of irregular testing and documentation underscore the need for more systematic quality processes to strengthen this impact.

4.7.3 Stakeholder Monitoring Practice on Implementation of Road Projects

Table 27

Model Summary – Stakeholder Monitoring Practice

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.600[a]	.360	.356	1.167

[a] Predictors: (Constant), Stakeholder Monitoring Practice

The model summary in Table 27 reveals that Stakeholder Monitoring Practice explains 36.0% of the variance in Implementation of Road Projects ($R^2 = .360$), with an adjusted R^2 of .356 and a standard error of 1.167.

Table 28

ANOVA – Stakeholder Monitoring Practice

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	133.742	1	133.742	98.142	.000[b]
Residual	236.523	174	1.360		
Total	370.265	175			

[b] Predictors: (Constant), Stakeholder Monitoring Practice

Dependent Variable: Implementation of Road Projects

The ANOVA results in Table 28 show that Stakeholder Monitoring Practice significantly predicts Implementation of Road Projects ($F = 98.142$, $p < .001$), indicating that effective stakeholder engagement has a strong and reliable impact on project success.

Table 29

Regression Coefficients – Stakeholder Monitoring Practice

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	1.389	.289		4.805	.000
Stakeholder Monitoring Practice	.614	.062	.600	9.907	.000

Dependent Variable: Implementation of Road Projects

The coefficients in Table 29 indicate a robust positive effect (β = .614, t = 9.907, p = 0.000), with a one-unit increase in Stakeholder Monitoring Practice improving implementation by 0.614 units. This supports the hypothesis and aligns with Ametepey et al. (2020), though descriptive weaknesses in meetings and updates highlight the urgency of strengthening engagement mechanisms.

4.7.4 Report Monitoring Practice on Implementation of Road Projects

Table 30

Model Summary – Report Monitoring Practice

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.753[a]	.567	.564	.974

[a] Predictors: (Constant), Report Monitoring Practice

The model summary in Table 30 demonstrates that Report Monitoring Practice accounts for 56.7% of the variance in Implementation of Road Projects (R^2 = .567), the highest among the models, with an adjusted R^2 of .564 and a low standard error of .974.

Table 31

ANOVA – Report Monitoring Practice

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	216.113	1	216.113	227.832	.000[b]
Residual	165.152	174	.949		
Total	381.265	175			

[b] Predictors: (Constant), Report Monitoring Practice

The ANOVA results indicate that Report Monitoring Practice is a highly significant predictor of Implementation of Road Projects ($F = 227.832$, $p < .001$). The large F-value and $p < .001$ demonstrate that the model explains a substantial portion of the variance, highlighting the critical role of structured reporting in enhancing project implementation outcomes.

Table 32

Coefficients – Report Monitoring Practice

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	.874	.246		3.551	.000
Report Monitoring Practice	.892	.059	.753	15.094	.000

Dependent Variable: Implementation of Road Projects

The coefficients in Table 32 reveal a powerful positive influence ($\beta = .892$, $t = 15.094$, $p = 0.000$), with a one-unit increase in Report Monitoring Practice yielding a 0.892-unit increase in implementation, nearly a one-to-one effect. This strongly supports the hypothesis and aligns with Kerzner (2022), positioning reporting as the dominant driver. Descriptive issues with templates and comprehensiveness suggest that further standardization could maximize benefits.

4.8 Hypotheses Testing Analysis

The results of the regression analyses provide evidence to assess the research hypotheses regarding the influence of project monitoring practices on the implementation of road projects in Nakuru County, Kenya. All four null hypotheses are rejected, confirming that performance, quality, stakeholder, and report monitoring practices each have significant positive effects on the implementation of road projects, with report monitoring exerting the greatest impact.

$H0_1$ posited that performance monitoring practice has no significant influence on road project implementation. The regression results indicate a positive and statistically significant effect ($\beta = 0.489$, $p = 0.000$), suggesting that higher levels of performance monitoring enhance project implementation. This leads to the rejection of $H0_1$, confirming that performance monitoring positively influences road project outcomes.

$H0_2$ proposed that quality monitoring practice does not significantly affect project implementation. The analysis shows a significant positive relationship ($\beta = 0.512$, $p = 0.000$), indicating that improved quality monitoring is associated with better implementation of road projects. Therefore, $H0_2$ is rejected, and it is concluded that quality monitoring plays a meaningful role in project success.

$H0_3$ suggested that stakeholder monitoring practice has no significant impact on project implementation. The regression findings reveal a strong positive effect ($\beta = 0.614$, $p = 0.000$), demonstrating that greater stakeholder engagement significantly enhances project implementation. Consequently, $H0_3$ is rejected, highlighting stakeholder monitoring as a critical factor for effective project execution.

$H0_4$ asserted that report monitoring practice does not significantly influence project implementation. The analysis shows the strongest positive effect among all practices ($\beta =$

0.892, p = 0.000), indicating that improvements in reporting lead to substantial gains in project implementation. $H0_4$ is therefore strongly rejected, emphasizing report monitoring as the most influential driver of successful road project implementation in Nakuru County.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the research findings, presents research conclusions based on those findings, and offers recommendations for future measures based on the research objectives, focusing on the effects of project monitoring practices on the realization of road projects in Nakuru County, Kenya.

5.2 Summary of the Findings

The research explored the effects of the monitoring practices of the projects, such as the Performance Monitoring Practice, Quality Monitoring Practice, Stakeholder Monitoring Practice, and Report Monitoring Practice, on the implementation of road projects in Nakuru County, Kenya. According to descriptive statistics, correlation, and regression analysis of a sample of 176 respondents, the results indicated that the degree of influence on the outcome of road projects varied to a different extent. The findings were compared with the current literature, and notable similarities, differences, and context-specific information for Nakuru County were identified.

5.2.1 Performance Monitoring Practice on Road Project Implementation

The study found that Performance Monitoring Practices had a moderate influence on road project implementation in Nakuru County, with a mean of 3.02 and a standard deviation of 1.377, as indicated by descriptive statistics. This indicated that respondents perceived practices such as tracking milestones and using Key Performance Indicators (KPIs) as somewhat beneficial but inconsistently applied, suggesting a tempered effect on timely completion and cost-effectiveness. The standard deviation highlighted variability in perceptions, likely due to inconsistent KPI usage and budget tracking. Correlation analysis showed a moderate positive Pearson correlation coefficient (r =

0.527, p = 0.000), confirming a meaningful relationship. Regression analysis showed a significant positive unstandardized coefficient of 0.489 (p = 0.000), supported by ANOVA results (F = 67.561, p = 0.000), indicating that PMP positively contributes to project implementation.

These findings align with Li *et al*. (2020), who reported that robust performance monitoring in African micro-grids significantly increased efficiency through data-driven decisions, contributing to operational success. Similarly, Ciric Lalic *et al*. (2022) found that agile project management approaches, including performance monitoring, improved project success by ensuring adaptability, supporting this study's evidence of PMP's potential role. However, unlike Mutua *et al*. (2020), who reported that monitoring practices explained 78.7% of variance in road project implementation in Kilifi County, Kenya ($R^2 = 0.787$), this study's moderate R^2 of 0.278 and mean suggest context-specific challenges, such as limited training or inconsistent KPI application, which temper the impact in Nakuru County. These findings highlighted Performance Monitoring Practices as a critical factor in road project implementation, underscoring the need for enhanced monitoring frameworks to address variability and promote consistent adoption.

5.2.2 Quality Monitoring Practice on Road Project Implementation

Quality Monitoring Practices exhibited a moderate effect on road project implementation, with a mean of 2.88 and a standard deviation of 1.459, as indicated by descriptive statistics. This suggested that respondents viewed practices such as regular quality tests and documentation as relatively ineffective, reflecting weak quality assurance processes. The standard deviation indicated moderate variability in perceptions, likely due to inconsistent testing and documentation practices. Correlation analysis showed a moderate positive Pearson correlation coefficient (r = 0.538; p = 0.000), confirming a meaningful relationship. Regression analysis showed a significant

positive unstandardized coefficient of 0.512 (p = 0.000), supported by ANOVA (F = 71.512, p = 0.000), confirming that QMP substantially contributes to project implementation.

These results are consistent with Nyakala *et al*. (2024), who found a positive moderate correlation between quality monitoring and road construction effectiveness in South African municipalities, supporting this study's evidence of QMP's potential role. Similarly, Salvi and Kerkar (2020) noted that continuous quality control enhances construction project effectiveness, aligning with the need for robust quality assurance in Nakuru. However, unlike Solomon *et al*. (2018), who reported that refined quality-monitoring methodologies improved data comparability in the global trachoma mapping project, this study's moderate R^2 of 0.289 and negative perceptions (68.8% disagreement with quality tests) suggest context-specific challenges, such as inadequate resources or training. These findings underscored Quality Monitoring Practices' potential to support road project implementation while highlighting the need for targeted interventions to overcome adoption challenges.

5.2.3 Stakeholder Monitoring Practice on Road Project Implementation

Stakeholder Monitoring Practices demonstrated a moderate impact on road project implementation, with a mean of 2.79 and a standard deviation of 1.440, as indicated by descriptive statistics. This reflected a modest perception among respondents that practices such as regular stakeholder meetings and feedback incorporation were not particularly effective, suggesting limited engagement. The standard deviation indicated moderate variability, reflecting diverse experiences tied to stakeholder involvement. Correlation analysis showed a strong positive Pearson correlation coefficient (r = 0.600, p = 0.000), confirming a substantial relationship. Regression analysis revealed a significant positive unstandardized coefficient of 0.614 (p = 0.000), supported by

ANOVA (F = 98.142, p = 0.000), indicating that SMP directly influences implementation.

These findings align with Ametepey *et al*. (2020), who reported that stakeholder management significantly contributed to road project success in developing countries (β = 0.367), supporting this study's evidence of SMP's role in fostering collaboration. Similarly, Chepngetich (2022) found that stakeholder participation in project initiation strongly influenced implementation in Kenyan micro-hydropower projects (r = 0.802), aligning with the correlation observed in Nakuru. However, unlike Magassouba *et al*. (2019), who noted that stakeholder involvement in Guinea enhanced project success by identifying challenges early, this study's R^2 of 0.360 and negative perceptions (69.9% disagreement on regular meetings) suggest context-specific challenges, such as poor communication channels. These findings helped position Stakeholder Monitoring Practices as a vital practice for road project implementation, offering substantial benefits for collaboration, though practical challenges, such as limited engagement mechanisms, temper their impact in Nakuru County.

5.2.4 Report Monitoring Practice on Road Project Implementation

Report Monitoring Practices demonstrated a strong influence on road project implementation, with a mean of 2.62 and a standard deviation of 1.418, as indicated by descriptive statistics. This reflected a modest perception among respondents that practices such as report submission and documentation were somewhat effective, though constrained by inconsistent schedules and a lack of standardized templates. The lower standard deviation suggested a more consistent view across respondents compared to other practices, indicating a broadly shared but restrained assessment. Correlation analysis showed a very strong positive Pearson correlation coefficient (r = 0.753, p = 0.000), confirming a robust relationship. Regression analysis revealed a significant

unstandardized coefficient of 0.892 (p = 0.000), supported by ANOVA (F = 227.832, p = 0.000), highlighting the close tie between Report Monitoring Practices and project implementation outcomes.

These findings align with Smith, Li, and Rafferty (2020), who reported that structured reporting, such as the Implementation Research Logic Model, improved project rigor and outcomes by linking determinants and strategies, supporting this study's evidence of RMP's role in transparency. Similarly, El Khatib *et al*. (2022) noted that project reports enhance visibility and risk management, consistent with Nakuru's use of reports to track progress. However, unlike Brown (2020), who highlighted challenges in standardizing reporting formats, this study's strong regression coefficient and R^2 of 0.567 emphasize RMP's critical impact, though issues with templates (66.4% disagreement) suggest context-specific barriers, such as limited resources or training. These findings helped position Report Monitoring Practices as a vital practice for road project implementation, offering substantial benefits in transparency and decision-making, though practical challenges such as standardization may limit their impact in Nakuru County.

5.3 Conclusions

The findings demonstrate that performance monitoring practices positively influence road project implementation in Nakuru County, with milestone tracking and KPI use enhancing timely completion and cost-effectiveness. This aligns with the Resource-Based View (RBV) Theory, which emphasizes that unique and valuable resources, such as effective monitoring capabilities, are critical for achieving competitive advantage (Barney, 1991). The significant positive role of PMP underscores the need for enhanced monitoring frameworks to leverage internal resources effectively. The reliance on project managers to disseminate performance monitoring techniques underscores their pivotal role in transforming practices at the project level.

The findings established that quality monitoring practice significantly influences road project implementation in Nakuru County, with quality assurance processes supporting project quality. This supports Quality Management Theory, which views systematic quality control as integral to achieving project excellence (Deming & Juran, 1922). The significant effect of QMP underscores the value of testing and documentation, underscoring the need for robust quality management systems. Respondents perceive the project's aim as advancing sustainable infrastructure, reflecting a community commitment to long-term road quality.

The findings confirmed that stakeholder monitoring practices have a strong positive impact on road project implementation, with engagement mechanisms fostering collaboration. This aligns with Stakeholder Theory, which emphasizes the importance of addressing stakeholder interests to enhance project outcomes through multi-directional communication (Freeman, 1984). The significant effect of SMP suggests that improved engagement practices are essential, necessitating strategies to foster community involvement. The introduction of stakeholder engagement frameworks has supported project implementation by improving coordination.

The findings established that report monitoring practice significantly enhances road project implementation in Nakuru County, with structured reporting improving transparency and decision-making. This supports the Communication Theory of Organizational Effectiveness, which highlights communication networks and message fidelity as critical for organizational success (Katz & Kahn, 1978). The significant role of RMP underscores its importance in achieving project objectives, with project teams relying on reports to align actions with implementation goals. The study concludes that RMP is essential for optimizing road project interventions, contributing to the sustainability of Nakuru County's infrastructure systems.

5.4 Recommendations

5.4.1 Policy Recommendations

The findings demonstrate that performance monitoring practices positively impact road project implementation in Nakuru County, aligning with the Resource-Based View Theory, which emphasizes leveraging unique resources, such as monitoring capabilities (Barney, 1991). It is recommended that project managers adopt standardized KPIs and robust budget-tracking systems to improve project outcomes. However, current monitoring policies lack targeted support for training and resource allocation in Nakuru, indicating inefficiencies. The County Government of Nakuru, road agencies, and project management institutions should provide robust training programs, technical support, and access to advanced monitoring tools. Collaboration among stakeholders is crucial to raise awareness and facilitate adoption, ensuring that policies are tailored to local needs to overcome barriers such as limited training and to promote the widespread use of effective performance monitoring practices.

The study confirms that quality monitoring practices have a significant impact on road project implementation, supporting Quality Management Theory's focus on systematic quality assurance (Deming & Juran, 1922). Project teams should be encouraged to implement regular quality testing and documentation, particularly in resource-constrained areas like Nakuru. Current quality assurance policies lack sufficient enforcement, revealing a policy gap. The Ministry of Transport and Infrastructure, in partnership with quality assurance bodies, should develop mandatory quality control protocols and provide advanced testing equipment. Project officers should conduct regular site inspections and training to address implementation barriers, enhancing project quality and durability.

Stakeholder Monitoring Practices have a strong positive impact, consistent with Stakeholder Theory's emphasis on engagement for project success (Freeman, 1984). It is recommended that project teams implement structured stakeholder engagement frameworks, including regular meetings and feedback mechanisms, to boost collaboration. Current stakeholder policies in Nakuru lack robust communication channels, indicating weaknesses. The Nakuru County government and road agencies should promote stakeholder involvement through awareness campaigns and training programs. Addressing communication barriers through targeted initiatives will enhance the impact of stakeholder engagement, ensuring community contributions to project success.

Report Monitoring Practices significantly enhance road project implementation, supporting the Communication Theory of Organizational Effectiveness's focus on communication networks (Katz & Kahn, 1978). It is recommended that project teams implement standardized reporting templates and integrate real-time data analytics to boost transparency. Current reporting policies in Nakuru lack specific measures for standardization, highlighting inefficiencies. The Nakuru County government, alongside project management institutions, should promote structured reporting through training and digital tools. Local project officers should facilitate community-level implementation, addressing standardization challenges to ensure long-term success in improving project implementation.

5.4.2 Recommendations for Further Research

Future research could expand the study to include a broader range of infrastructure projects and examine how regional differences influence the adoption of effective monitoring practices. Exploring the long-term effectiveness of project monitoring methods under resource constraints would also yield valuable insights. Additionally,

investigating the role of stakeholder engagement and addressing communication barriers could further enhance understanding of the factors influencing successful road project implementation. These areas of focus would offer a more comprehensive view of the sustainability and scalability of monitoring practices in Nakuru County and similar contexts.

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APPENDICES

Appendix I: Letter of Introduction

Dear Sir/Madam,

Re: **Request To Collect Data For Academic Research Project**

My name is Julius Simotwo, a Master's Student at Kabarak University, currently working on my research project titled ***''Influence of Project Monitoring Practices on the Implementation of Road Projects in Nakuru County, Kenya''*** Your participation in this study by responding to the attached questionnaire will be appreciated. All your responses will be treated with utmost confidentiality, and the data collected will only be used for academic purposes.

Thank you in advance.

Yours faithfully,

Julius K. Simotwo

Appendix II: Questionnaire

The researcher is seeking to use this questionnaire to collect data on the Influence of Project Monitoring Practices on the Implementation of Road Projects in Nakuru County, Kenya. The questionnaire is divided into short sections that should take only a few moments of your time to complete. Please respond appropriately in the blanks provided. This is an academic exercise, and all information collected from respondents will be treated with strict confidentiality.

SECTION A: BASIC INFORMATION

1. What is your highest level of Education?
    a. Primary [ ]
    b. Secondary [ ]
    c. Certificate [ ]
    d. Diploma [ ]
    e. Degree [ ]
    f. Post Graduate [ ]
2. Work experience
    a. Less than 5 years [ ]
    b. 5 to 10 years [ ]
    c. 11 to 15 years [ ]
    d. More than 15 years [ ]
3. Number of Projects handled.
    a. Less than 10 [ ]
    b. 10 to 50 [ ]
    c. 51 to 100 [ ]
    d. More than 100 [ ]

SECTION B: Performance Monitoring

Kindly indicate your level of agreement/disagreement with the following statements regarding performance monitoring and its influence on the implementation of road projects in Nakuru County, Kenya. Use a scale of 1-5

where: 1=Strongly Disagree, 2=Disagree, 3=Undecided, 4=Agree, 5=Strongly Agree.

Statement	**1**	**2**	**3**	**4**	**5**
The project team regularly tracks and monitors project milestones against the planned schedule					
There is consistent use of specific Key Performance Indicators (KPIs) to measure project progress					
The budget monitoring system effectively tracks all project expenses in real-time					
There firm regularly conduct performance reviews to assess project progress against set targets					
The team maintains detailed records of all schedule variations and their causes					
There are clear procedures for monitoring resource utilization throughout the project					
Performance data is regularly used to make project adjustment decisions					

Section C: Quality Monitoring

Kindly indicate your level of agreement/disagreement with the following statements regarding quality assurance and their influence on the implementation of road projects in Nakuru County, Kenya. Use a scale of 1-5,

where: 1=Strongly Disagree, 2=Disagree, 3=Undecided, 4=Agree, 5=Strongly Agree.

Statement	**1**	**2**	**3**	**4**	**5**
The firm conducts regular quality tests on construction materials before use					
The quality monitoring team performs daily site inspections					
The firm maintains detailed quality control documentation throughout the project					
The firm strictly follows established quality standards for road construction					
Implementation team regularly calibrates and maintains construction equipment.					
There is a clear system for addressing quality-related issues					
Quality monitoring reports influence project decisions					

Section D: Stakeholder Monitoring

Kindly indicate your level of agreement/disagreement with the following statements regarding stakeholder engagement and its influence on the implementation of road projects in Nakuru County, Kenya. Use a scale of 1-5, where: **1=Strongly Disagree, 2=Disagree, 3=Undecided, 4=Agree, 5=Strongly Agree**.

Statement	**1**	**2**	**3**	**4**	**5**
The firm holds regular meetings with all key stakeholders					
Local community feedback is actively sought and incorporated into project decisions					
The firm maintains clear communication channels with all stakeholders					
Stakeholder concerns are promptly addressed and documented					
There is a regular update for stakeholders on project progress					
Stakeholder engagement plans are regularly reviewed and updated					
The firm maintains a stakeholder register that is regularly updated					

Section E: Report Monitoring

Kindly indicate your level of agreement/disagreement with the following statements regarding reporting and its influence on the implementation of road projects in Nakuru County, Kenya. Use a scale of 1-5, where: **1=Strongly Disagree, 2=Disagree, 3=Undecided, 4=Agree, 5=Strongly Agree**.

Statement	**1**	**2**	**3**	**4**	**5**
Project reports are submitted according to a fixed schedule					
Reports include comprehensive financial and technical details					
There is proper maintenance of standardized reporting templates for consistency					
Reports are shared with all relevant stakeholders promptly					
The reporting system effectively captures project challenges and solutions					
There are well-maintained digital copies of all project reports					
Report findings are used to improve project implementation					

Section F: Implementation of Road Projects

Kindly indicate your level of agreement/disagreement with the following statements regarding the implementation of road projects in Nakuru County, Kenya. Use a scale of 1-5, where: **1=Strongly Disagree, 2=Disagree, 3=Undecided, 4=Agree, 5=Strongly Agree**.

Statement	**1**	**2**	**3**	**4**	**5**
Projects are completed within the approved timeline					
Final project costs remain within the initial budget					
Completed roads meet quality specifications					
User satisfaction with completed roads is high					
Environmental impact mitigation measures are effectively implemented					
Project objectives are consistently achieved					
Completed roads require minimal maintenance within the first year					

---END---

Appendix III: Consent Form

KABARAK UNIVERSITY RESEARCH ETHICS COMMITTEE

ADULT INFORMED CONSENT FORM (TEMPLATE)

(The form is written in the English language but can be translated to Kiswahili or any otherappropriate language)

STUDY TITLE:

INFLUENCE OF PROJECT MONITORING PRACTICES ON THE IMPLEMENTATION OF ROAD PROJECTS IN NAKURU COUNTY, KENYA

PI Julius Simotwo Affiliated Institution Kabarak University Co-investigator(s) Dr. Nehemiah Kiplagat and Dr. Ezra Rono Affiliated Institution(s) Kabarak University

INTRODUCTION

You are invited to participate in this research study being undertaken by the above-listed investigators. This form will help you gather information about the study so that you can voluntarily decide whether you want to participate or not. You are encouraged to ask any questions regarding the research process, as well as any benefits or risks that you may accrue by participating. After you have been adequately informed about the study, you will be requested to either agree ordecline to participate. Upon agreeing to participate in the study, you will be further requested to affirm that by appending your signature/thumbprint on this form. Accepting or declining to participate in this study does not in any way waive the following rights, which you're entitled to:

a) Voluntary participation in the study;

b) Withdrawing from the study at any time without the obligation of having to give anexplanation, and;

c) Access to services which you're entitled to

A copy of this form will be provided to you for your own records.

Should I continue YES/NO __

This study has been reviewed and approved by Kabarak University Research Ethics Committee(KUREC)

What is the Purpose of the Study?

The main reason(s) for conducting this study is to answer the following questions:

1. *What is the influence of performance monitoring on the implementation of road projects in Nakuru County, Kenya*
2. *What is the influence of quality monitoring on the implementation of road projects in Nakuru County, Kenya?*
3. *What is the influence of stakeholder monitoring on the implementation of road projects in Nakuru County, Kenya?*
4. *What is the influence of reporting and monitoring on the implementation of road projects in Nakuru County, Kenya?*

(To answer these research questions, you are requested to voluntarily answer the question(s) and/or accept some procedures performed on you)

Who can Take Part in the Study?

The persons who will take part in the study are senior officials from the Department of Roads, Road Engineers, Ward Administrators, Members of the County Assembly, and community representatives involved in road implementation projects. The national government agencies not working in the county, community representatives who are not involved in project implementation, contractors, and other government officials working with the county government, and who are not listed as part of the targeted population, are excluded from the study. The study will comprise a sample size of 200 respondents.

In Case You Agree to Participate in the Study, What Will Happen?

This is what is going to happen once you have agreed to participate in the study:

There is sufficient time dedicated to this research to cater to your uninterrupted participation. The data collection process will take three months. However, your participation will only take a few minutes. Where necessary, a follow-up time may be scheduled to address emergent issues.

Second, a qualified and well-trained interviewer will ask you questions in a private place

where you will feel comfortable. In case there is any question you feel uncomfortable responding to, you will not be coerced into responding. The questions will be on the following areas:

1. *Basic information*
2. *Performance monitoring*
3. *Quality monitoring*
4. *Stakeholder monitoring*
5. *Reporting monitoring*
6. *Implementation of road projects*

Third, after the interview, the following procedures will be done {detailed information on anyprocedures to be undertaken by the investigator(s)}
The key data collected will be summarized immediately. Information given may be verified by relevant authorities. The data collected through this study will be processed, comprehensively analyzed, and interpreted before the dissemination of the study findings.

Last, you are requested to provide your contact details (phone number or any other reliable form of contact). This will help reach you in case new information regarding the study emerges. Another reason(s) for requesting your contact details is;
To provide a transcript of the interview and ask for comments

The contact details you will provide shall remain confidential to the lead researcher (PI).

What Potential Risks are Associated with Participation in this Study?

Any research involving human subjects has the potential of imposing several risks/harms ordiscomfort, including psychological, physical, emotional, environmental, cultural, etc.

There are no risks associated with this study.

Privacy & Confidentiality

Privacy is the right of an individual to have some control over how his or her personal information/data is collected, used, and/or disclosed. Confidentiality is the duty to ensure information (data) is kept secret only to the extent possible/reasonable.

Your privacy and confidentiality will be protected by employing carefully controlled procedures for data collection, storage, and access that comply with data privacy. No identifying information will be accessed by any person during the research period, save for the authorized research team only. Upon conclusion of the research process, no

identifying information will be included in any reports or publications. The data obtained will be retained safely for one year and thereafter destroyed.

In case you aren't comfortable answering any of the questions during the interview because of feeling embarrassed or uncomfortable, it will be within your rights to decline. Otherwise, every measure has been taken to ensure that the interview is conducted in a private area with minimal to no interference so that you feel comfortable.

In case of clinical procedures: You may experience some discomfort/pain after {*N/A*}. This may even cause some {*N/A*}

If at all you suffer any injury, illness, or complication(s) by participating in this study, kindly contact us immediately using the contact details provided at the bottom of this form. You will be attended to by the study clinician, and if there is a need for further assessment or treatment, you willbe referred accordingly.

What Benefits are you going to accrue by participating in the Study

Implementing the study findings will lead to more efficient use of resources, timely project completion, and improved quality of road networks, directly benefiting the public and the economy.

From a policy perspective, the study will influence policymakers to revise and strengthen guidelines, funding allocation strategies, and oversight mechanisms.

What will it Cost You to participate in the Study?

You will not incur any costs by participating in this study. The best time for data collection will be allocated to minimize any impact or inconvenience that may affect your work.

Will Any Expenditure that You Incur by participating in the Study be refunded? Or will you be paid for participating in the Study?

There are no costs you will incur in participating in the study. Therefore, you will not be reimbursed any funds.

In Case I have any Further Questions/Concerns in the Future, whom Should I contact?

If you need further clarification or have questions regarding your continued participation in the study feel free to contact the PI {*Julius Simotwo, mobile number-+254728206879, and or E-mail: jsimotwo@kabarak.ac.ke*}. In case of concerns regarding your rights and/or obligations as a research participant, do not hesitate to contact the secretary, KUREC on {*kurec@kabarak.ac.ke*}

What Alternative Options Are Available to Me?

The decision on whether to participate or not is voluntary. You will be free to withdraw from the study at any point during the study without providing any explanation.

How Will the Findings of this Study be Communicated or Shared?

The study findings will be shared officially after the final thesis publication. Copies will be available in academic journals and the Kabarak University Library. Findings will also be shared through presentations at academic conferences.

Statement of Consent

I have comprehensively read the consent form, and the information has been comprehensively readto me by the researcher. I have understood what the study is about and all the questions and concerns that I had have been responded to in a clear and concise. The study benefits and foreseeable risks have been explained to me. I understand that my decision to participate inthis study is voluntary, and I have the right to withdraw at any point during the study.

I freely consent to participate in this study.

Signing this form does not in any way imply that I have given up the rights am entitled to as a participant.

I agree to participate in this research YES_____NO_____

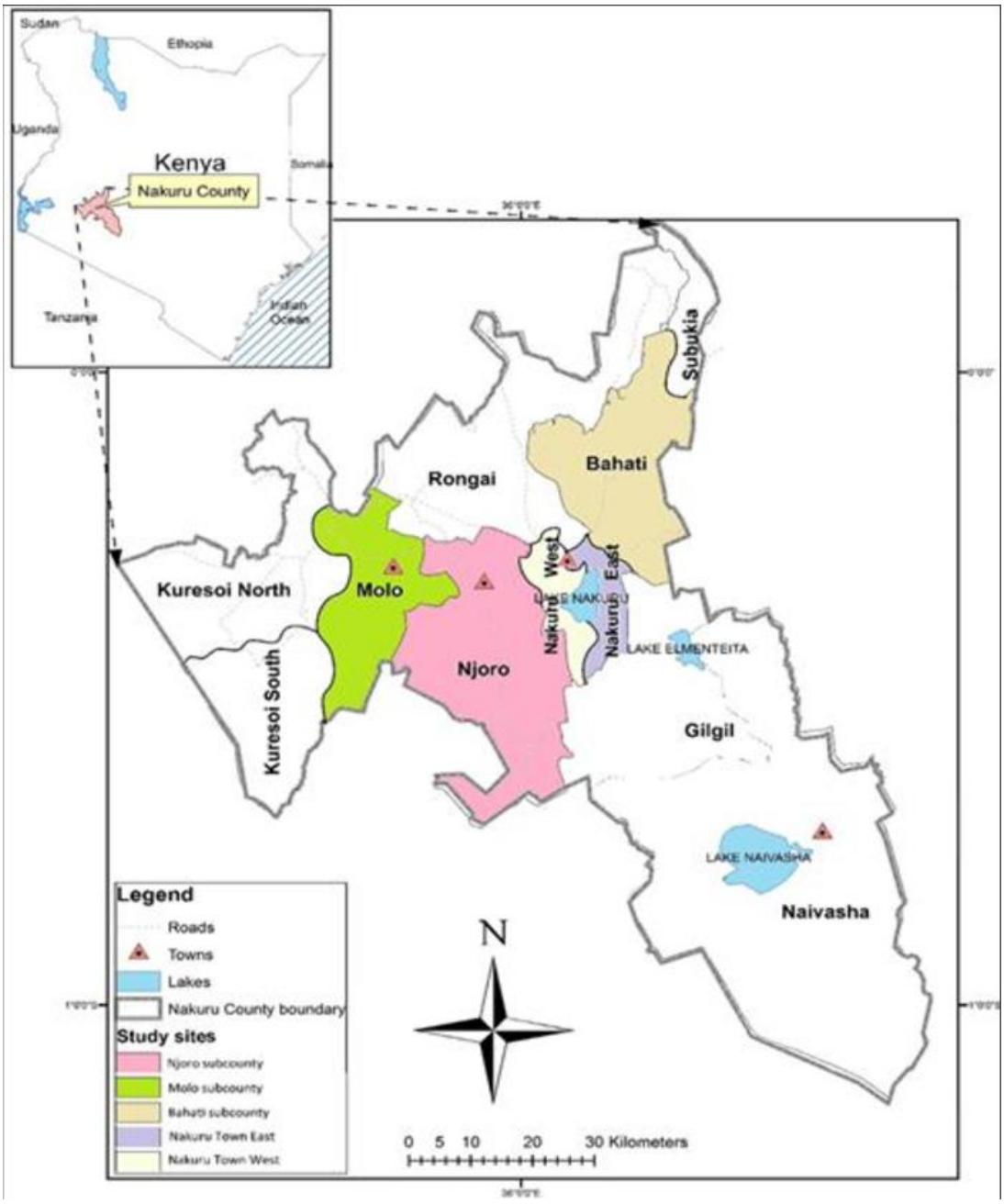
I agree to provide my contact details for follow-up YES_____NO_____

Participant's Name _____

_____

Participant's Signature/Thumbprint_____Date _____

Appendix IV: Map of Nakuru County



Appendix V: KUREC Clearance Letter

KABARAK UNIVERSITY RESEARCH ETHICS COMMITTEE

Private Bag - 20157
KABARAK, KENYA
Email: kurec@kabarak.ac.ke

Tel: 254-51-343234/5
Fax: 254-051-343529
www.kabarak.ac.ke

OUR REF: KABU01/KUREC/001/10/05/25 **Date: 12th May, 2025**

Julius Simotwo
Reg. No: GMPM/NE/0591/05/22
Kabarak University,

Dear Julius,

RE: INFLUENCE OF PROJECT MONITORING PRACTICES ON THE IMPLEMENTATION OF ROAD PROJECTS IN NAKURU COUNTY, KENYA

This is to inform you that ***KUREC*** has reviewed and approved your above research proposal. Your application approval number is ***KUREC-100525.*** The approval period is ***12/05/2025 – 12/05/ 2026.***

This approval is subject to compliance with the following requirements:

i. All researchers shall obtain an introduction letter to NACOSTI from the relevant head of institutions (Institute of postgraduate, School dean or Directorate of research)
ii. The researcher shall further obtain a RESEARCH PERMIT from NACOSTI before commencement of data collection & submit a copy of the permit to **KUREC.**
iii. Only approved documents including (informed consents, study instruments, MTA Material Transfer Agreement) will be used
iv. All changes including (amendments, deviations, and violations) are submitted for review and approval by ***KUREC***:
v. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to ***KUREC*** within 72 hours of notification;
vi. Any changes, anticipated or otherwise that may increase the risk(s) or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to ***KUREC*** within 72 hours;
vii. Clearance for export of biological specimens must be obtained from relevant institutions and submit a copy of the permit to KUREC;
viii. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal and;
ix. Submission of an executive summary report within 90 days upon completion of the study to ***KUREC***

Sincerely,

KABARAK UNIVERSITY INSTITUTIONAL RESEARCH ETHICS APPROVED

Prof. Jackson Kitetu PhD.
KUREC-Chairman

Cc Vice Chancellor
DVC-Academic & Research
Registrar-Academic & Research
Director-Research Innovation & Outreach
Institute of Post Graduate Studies

Appendix VI: NACOSTI Research Permit

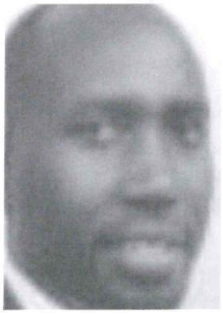
REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **492015**

Date of Issue: **28/May/2025**

RESEARCH LICENSE



This is to Certify that Mr.. Julius Simotwo of Kabarak University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nakuru on the topic: Influence of Project Monitoring Practices on the Implementation of Road Projects in Nakuru County, Kenya for the period ending : 28/May/2026.

License No: **NACOSTI/P/25/4174730**

492015

Applicant Identification Number

Deputy Director
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

Appendix VII: Evidence of Conference Participation

UNIVERSITY OF KABIANGA

INNOVATION AND EXCELLENCE

CERTIFICATE OF PARTICIPATION

THIS CERTIFICATE IS AWARDED TO

Julius Simotwo

for participating in the 4th University of Kabianga Multidisciplinary Conference held at the University of Kabianga Main Campus between 15th - 17th October, 2025

THEME: Scientific and Technological Innovations for Sustainable Development in an Era of Complex Global Challenges

Prof. Eric Koech
Vice-chancellor

Prof. Maurice Oduor
Deputy Vice-chancellor
(Planning, Research and Development)

Appendix VIII: List of Publication

African Journal of Emerging Issues
Peer reviewed | Double blind | Interdisciplinary

African Journal of Emerging Issues (AJOEI)
Online ISSN: 2663 - 9335
Available at: https://ajoeijournals.org

PROJECT MANAGEMENT

INFLUENCE OF REPORT MONITORING PRACTICE ON THE IMPLEMENTATION OF ROAD PROJECTS IN NAKURU COUNTY, KENYA

[1*]Julius Simotwo, [2]Nehemiah Kiplagat & [3]Ezra Ronoh

Kabarak University, Kenya

Correspondent Email: jsimotwo@kabarak.ac.ke

Publication Date: November 2025

ABSTRACT

Purpose of Study: This study aimed to evaluate the influence of report monitoring practices on the implementation of road projects in Nakuru County, Kenya.

Problem Statement: The implementation of road projects in Nakuru County, Kenya, is hindered by ineffective report monitoring practices, leading to poor transparency, delayed decision-making, and failure to achieve project objectives. These issues undermine the sustainability and accountability of road infrastructure development.

Methodology: A correlational research design was employed, targeting 447 stakeholders, with a sample of 211 respondents selected using stratified random sampling. Data was collected through structured questionnaires and analyzed using descriptive statistics (means, standard deviations) and inferential statistics (correlation and regression analysis) via SPSS Version 26.0.

Result: Report monitoring practices showed a strong positive influence on road project implementation ($\beta = 1.098$, $p = 0.000$), with a high correlation ($r = 0.753$, $p < 0.01$).

Recommendation: The Nakuru County government and road agencies should adopt standardized reporting templates and digital tools to enhance transparency and decision-making. Future research should explore barriers to standardizing report monitoring in resource-constrained settings.

Keywords: *Report Monitoring Practices, Road Project Implementation, Transparency, Nakuru County, Infrastructure Development.*

INTRODUCTION

Report monitoring practices are critical for ensuring transparency, accountability, and effective decision-making in infrastructure projects, particularly in the public sector where stakeholder trust is essential. Globally, structured reporting has been shown to enhance project outcomes. Smith et