

**PROJECT MANAGEMENT PRACTICES AND
IMPLEMENTATION OF COUNTY-FUNDED ROAD
PROJECTS IN UASIN GISHU COUNTY, KENYA**

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**Project Management Practices and Implementation of County-Funded
Road Projects in Uasin Gishu County, Kenya**

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Degree of Doctor of Philosophy in Project Management of the
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DECLARATION

This thesis is my original work and has not been presented for a degree in any other University

Signature.....Date.....

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This thesis has been submitted for examination with our approval as the University Supervisors

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DEDICATION

To my children, Ivan Kiprotich and Ivy Chepkirui, this work is for you.

Ivan, in your love of computers I see a mind that refuses to accept "it just works," always asking how and why; and in your love of football, a heart that keeps running, keeps trying, and plays to the very last whistle. Carry both gifts with you: the curiosity to understand the world, and the grit to never leave the field.

Ivy, in your love of fashion and content creation I see an eye that finds beauty where others pass by, and a voice ready to be heard. Never shrink it. The world needs people bold enough to imagine, to create, and to share what they make.

My prayer is simple: chase what you love with everything you have, for a passion pursued without fear knows no ceiling. Every late night behind this thesis was, in truth, a lesson for you that dreams are built, one determined step at a time.

This journey is for you and because of you.

With all my love.

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TABLE OF CONTENTS

DECLARATION.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES	xiv
LIST OF FIGURES	xvi
LIST OF APPENDICES	xvii
ABBREVIATIONS AND ACRONYMS	xviii
DEFINITION OF OPERATIONAL TERMS	xx
ABSTRACT	xxiii
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background of the Study	1
1.1.1 Global Perspective of Project Management Practices	5
1.1.2 Regional Perspective of Project Management Practices.....	6
1.1.3 Local Perspective of Project Management Practices	8

1.1.4 Implementation of County-Funded Road Projects in Uasin Gishu County, Kenya.....	10
1.2 Statement of the Problem	12
1.3. Objectives of the Study	15
1.3.1 General Objective	15
1.3.2 Specific Objectives	15
1.4 Research Hypotheses.....	15
1.5 Significance of the Study.....	16
1.5.1 County Governments of Kenya	16
1.5.2 Policy Makers	16
1.5.3 Project Managers	17
1.5.4 Future Scholars	17
1.6 Scope of the Study.....	17
1.7 Limitations of the Study	18
1.7.1 Uncooperative Respondents	18
1.7.2 Working Schedules	18

CHAPTER TWO	19
LITERATURE REVIEW.....	19
2.1 Introduction	19
2.2. Theoretical Framework	19
2.2.1 Resource-Based View Theory	19
2.2.2 Goal Setting Theory.....	21
2.2.3 Institutional Theory.....	23
2.2.4 Stakeholder Theory.....	24
2.2.5 Contingency Theory	26
2.3 Conceptual Framework	26
2.3.1 Project Planning.....	27
2.3.2 Project Team Management	29
2.3.3 Project Monitoring and Evaluation.....	30
2.3.4 Project Stakeholder Involvement.....	32
2.3.5 Government Regulations	33
2.3.6 Operationalization of the Study Variables.....	35
2.4 Empirical Review	36

2.4.1 Project Planning.....	36
2.4.2 Project Team Management	39
2.4.3 Project Monitoring and Evaluation.....	42
2.4.4 Project Stakeholder Involvement.....	44
2.4.5 Project Management Practices, Government Regulation and Implementation of Projects	46
2.5 Critique of Existing Literature.....	48
2.6 Research Gaps	49
2.7 Summary of Literature	50
CHAPTER THREE	53
RESEARCH METHODOLOGY	53
3.1 Introduction	53
3.2 Research Philosophy	53
3.3 Research Design	54
3.4 Target Population	55
3.5 Sampling Frame.....	56
3.6 Sample Size and Sampling Technique	56
3.6.1 Sample Size.....	56

3.6.2 Sampling Technique	57
3.7 Data Collection Instruments	58
3.8 Data Collection Procedure.....	59
3.9 Pilot Study	59
3.9.1 Validity of Data Collection Instrument	59
3.9.2 Reliability of Data Collection Instrument.....	60
3.10 Data Analysis and Presentation	61
3.10.1 Test of the Moderating Effect	62
3.11 Preliminary Tests.....	63
3.11.1 Linearity Test.....	63
3.11.2 Heteroskedasticity Test.....	63
3.11.3 Autocorrelation Test	64
3.11.4 Multicollinearity Test	64
3.11.5 Test of Hypothesis	64
3.11.6 Operationalization of Variables	65

CHAPTER FOUR.....	67
RESEARCH FINDINGS AND DISCUSSION.....	67
4.1 Introduction	67
4.2 Response Rate	67
4.3 Pilot Study Results	68
4.3.1 Reliability Test Results.....	68
4.3.2 Validity Test Results.....	69
4.4 Demographic Information Analysis	71
4.4.1 Respondents’ Level of Education	71
4.4.3 Respondents Work Experience	72
4.5 Descriptive Analysis.....	73
4.5.1 Project Planning and Implementation of County-Funded Road Projects	73
4.5.2 Project Team Management and Implementation of Road Projects	75
4.5.3 Project Monitoring and Evaluation and Implementation of Road Projects	77
4.5.4 Project Stakeholder Involvement and Implementation of Road Projects	79
4.5.5 Government Regulation and Implementation of Road Projects	81
4.5.6 Implementation of County-Funded Road Projects	82

4.5.7 Secondary Data on Implementation of County-Funded Road Projects	83
4.6 Diagnostic Tests	87
4.6.1 Linearity Test	87
4.6.2 Heteroskedasticity Test	88
4.6.3 Autocorrelation Test	89
4.6.4 Multicollinearity Test	89
4.7 Correlation Analysis	90
4.8 Statistical Modelling	92
4.9 Simple Linear Regression	96
4.9.1 Simple Linear Regression for Project Planning	96
4.9.2 Simple Linear Regression for Project Team Management	98
4.9.3 Simple Linear Regression for Project Monitoring and Evaluation	100
4.9.4 Simple Linear Regression for Project Stakeholder Involvement	102
4.9.5 Simple Linear Regression for Government Regulation	104
4.10 Discussion of Key Findings	108
4.10.1 Project Planning and Implementation of County-Funded Road Projects	109
4.10.2 Project Team Management and Implementation of County-Funded Road Projects	109

4.10.3 Project Monitoring and Evaluation and Implementation of County-Funded Road Projects.....	110
4.10.4 Project Stakeholder Involvement and Implementation of County-Funded Road Projects	110
4.10.5 Moderating Effect of Government Regulation	111
4.11 Hypothesis Testing	112
4.12 Optimal Model.....	112
CHAPTER FIVE.....	115
SUMMARY, CONCLUSION, AND RECOMMENDATIONS.....	115
5.1 Introduction	115
5.2 Summary of Findings	115
5.2.1 Project Planning and Implementation of County-funded Road Projects.....	115
5.2.2 Project Team Management and Implementation of Road Projects	116
5.2.3 Project Monitoring, Evaluation, and Implementation of Road Projects.....	117
5.2.4 Project Stakeholder Involvement and Implementation of Road Projects	117
5.2.5 Government Regulation and Implementation of Road Projects	118
5.3 Conclusions	119
5.3.1 Project Planning.....	119

5.3.2 Project Team Management	119
5.2.3 Project Monitoring and Evaluation.....	120
5.3.4 Project Stakeholder Involvement.....	120
5.3.5 Government Regulation.....	121
5.4 Recommendations	121
5.4.1 Recommendations of Policy and Practice	121
5.4.2 Recommendations for Further Studies	123
5.6 Contribution to Knowledge	125
5.6.1 Empirical Contribution	125
5.6.2 Theoretical Contribution.....	126
REFERENCES	129
APPENDICES	138

LIST OF TABLES

Table 3.1: Target Population.....	56
Table 3.2: Sample Size.....	57
Table 3.3: Hypotheses Test	65
Table 4.1: Reliability Test Results	69
Table 4.2: KMO and Bartlett's Test.....	70
Table 4.3: Descriptive Statistics for Project Planning.....	75
Table 4.4: Descriptive Statistics on Project Team Management	77
Table 4.5: Descriptive Statistics on Project Monitoring and Evaluation	79
Table 4.6: Descriptive Statistics on Project Stakeholder Involvement	80
Table 4.7: Descriptive Statistics on Government Regulation	82
Table 4.8: Descriptive Statistics on Implementation of Road Projects.....	83
Table 4.10: Coefficients of Linearity Test	88
Table 4.11: Breusch-Pagan Test for Heteroscedasticity	89
Table 4.12: Autocorrelation Test	89
Table 4.13: Multicollinearity Test.....	90
Table 4.14: Correlation Analysis	92

Table 4.16: Simple Linear Regression for Project Planning.....	98
Table 4.17: Simple Linear Regression for Project Team Management	100
Table 4.18: Simple Linear Regression for Project Monitoring and Evaluation.....	102
Table 4.19: Simple Linear Regression for Project Stakeholder Involvement.....	104
Table 4.20: Simple Linear Regression for Government Regulation.....	108
Table 4.21: Hypothesis Testing.....	112

LIST OF FIGURES

Figure 2.1: Conceptual Framework	27
Figure 4.1: Response Rate	68
Figure 4.2: Respondents Level of Education	72
Figure 4.3: Respondents Work Experience.....	73
Figure 4.4: Delivery within Budget	84
Figure 4.5: Completion within Schedule	85
Figure 4.6: Achievement of Project Scope	86
Figure 4.7: Attainment of Quality Standards	87
Figure 4.8: Revised Conceptual Framework.....	114

LIST OF APPENDICES

Appendix I: Letter of Introduction.....	138
Appendix II: Questionnaire	139
Appendix III: NACOSTI Approval Permit	147
Appendix IV: List of Roads.....	149

ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis of Variance
GDP	Gross Domestic Product
GoK	Government of Kenya
JKUAT	Jomo Kenyatta University of Agriculture and Technology
KeNHA	Kenya National Highways Authority
KeRRA	Kenya Rural Roads Authority
KIPPRA	Kenya Institute for Public Policy Research and Analysis
KMO	Kaiser–Meyer–Olkin
KRB	Kenya Roads Board
LFA	Logical Framework Approach
M&E	Monitoring and Evaluation
NCA	National Construction Authority
NGO	Non-Governmental Organisation
PDCA	Plan-Do-Check-Act
PERT	Program Evaluation and Review Technique
PMI	Project Management Institute
PPP	Public-Private Partnership
RBV	Resource-Based View
RoK	Republic of Kenya
SMEs	Small and Medium Enterprises

SPSS	Statistical Package for the Social Sciences
SWOT	Strengths, Weaknesses, Opportunities and Threats
UAE	United Arab Emirates
UNDP	United Nations Development Programme
USD	United States Dollar
VIF	Variance Inflation Factor
WBS	Work Breakdown Structure

DEFINITION OF OPERATIONAL TERMS

County-funded road projects Road construction and improvement projects planned, financed and delivered by a county government under the functions devolved to counties by the Fourth Schedule of the Constitution of Kenya (Republic of Kenya, 2020)

Devolution The constitutional transfer of political, administrative and financial authority from the national government to the county governments in Kenya, including responsibility for the construction and maintenance of county roads (Republic of Kenya, 2020).

Government regulation The legally binding rules, policies, standards and directives issued by government authorities to control, guide and coordinate project activities. In this study it comprises infrastructure financing, government policy and the enforcement of construction standards, and serves as the moderating variable.

Moderating variable A variable that alters the strength or direction of the relationship between an independent and a dependent variable (Baron & Kenny, 2020). In this study, government regulation is tested as a moderator of the relationship between project management practices and project implementation.

Project implementation The execution phase in which people and resources are coordinated, stakeholder expectations are managed, and project activities are carried out in accordance with the project management plan (PMI, 2024). In this study it denotes the

successful delivery of county-funded road projects on time, within budget and to the required quality.

Project implementation practice A technique, tool, method or approach applied to convert project plans into the desired project outcomes (Menon, 2022).

Project management practices The systematic application of knowledge, skills, tools and techniques to project activities in order to meet project requirements and deliver the intended outcomes (PMI, 2024). In this study they refer specifically to project planning, project team management, project monitoring and evaluation, and project stakeholder involvement

Project monitoring and evaluation The continuous tracking of project progress against set plans (monitoring), together with the periodic and systematic assessment of a project's outcomes and impact (evaluation), undertaken to inform timely corrective decisions (Naidoo, 2024).

Project performance The extent to which a project achieves its planned objectives of time, cost, quality and scope, together with the satisfaction of its stakeholders

Project planning The process of defining a project's goals and objectives and determining the scope of work, the schedule and the resources required to achieve them (Aduma & Kimutai, 2021).

Project stakeholder involvement The practice of including stakeholders in a project through information-sharing, consultation, dialogue and participation in decision-making (Eskerod, Huemann & Ringhofer, 2022).

Project team management The knowledge, skills and abilities required to organise and coordinate a project team so that project activities are completed within the agreed scope, time, cost and quality (PMI, 2024).

ABSTRACT

Government projects are vital to the citizens, who are the primary beneficiaries. Funded projects seek to address socio-economic developmental challenges facing the marginalized population. Therefore, such projects' failure brings with it a profound negative socio-economic impact to the project beneficiaries. Pretorius, Steyn, and Jordaan (2012) report that fewer projects globally are completed within budget or meet original goals and business objectives. The general objective of this study was to examine the influence of project management practices in implementing county-funded road projects in Uasin Gishu County in Kenya. Specifically, the study sought to establish the relationship between project planning and implementation of county-funded road projects in Uasin Gishu County, to assess the relationship between project team management and implementation of county-funded road projects in Uasin Gishu County, to determine the relationship between project monitoring and evaluation and implementation of county-funded road projects in Uasin Gishu County, to find out the relationship between project stakeholder involvement and implementation of county-funded road projects in Uasin Gishu County and to determine the moderating effect of government regulation on implementation of county-funded road projects in Uasin Gishu County. The study was guided by the Resource-Based View Theory, Goal Setting Theory and Institutional Theory. The positivist philosophy was used to drive the study. The research used a descriptive survey to establish conclusions about how project management practices influence the delivery of county-funded road improvements in Uasin Gishu County. The study was conducted in Uasin Gishu County in Kenya. According to the Uasin Gishu County report (2023), there were a total of 250 employees in the management-level positions under the Ministry of Roads and Public Works. The unit of analysis was therefore County-Funded Road Projects in Uasin Gishu County, while the unit of observation was 250 management employees. The research employed Taro Yamane's (1967) sample size calculation, assuming a 5% error term. The research picked 153 people from a target sample of 250 employees. Employees who work on road construction in Uasin-Gishu County make up the majority of this group. Thematic analysis was used to analyse qualitative data, whereas descriptive and inferential statistics (Pearson correlation coefficient, multiple regression analysis, and stepwise regression analysis) were used in analysing quantitative data with the help of the SPSS statistical software. The study used a 95% confidence level. Based on the findings, the study concluded that project planning positively and significantly influences the implementation of county-funded road projects in Uasin Gishu County. In addition, the study concluded that project team management positively and significantly influences the implementation of county-funded road projects in Uasin Gishu County. Further, the study concluded that project monitoring and evaluation positively and significantly influences implementation of county-funded road projects in Uasin Gishu County. The study also concluded that project stakeholder involvement positively and significantly influences the implementation of county-funded road projects in Uasin Gishu County. The study concludes that Government regulation has a significant moderating effect on the influence of implementation of county-funded

road projects in Uasin Gishu County. This study, therefore, recommended that the Uasin Gishu County should prioritise project planning, project team management, project monitoring and evaluation, and project stakeholder involvement.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Köhler et al. (2022) define project management techniques as the science of planning, developing, and managing activities to assist the project team in overcoming problems across the project lifecycle processes. According to Barriere (2021), project management methods have evolved into a management tool for achieving optimum project implementation performance. Organisations have adopted it to overcome a variety of difficulties posed by globalization and developments in business operations (Fewings & Henjewe, 2024).

Designing process, purchasing, planning and monitoring, corporate governance, people engagement, budget management, delivery processes and certification, the new verification, user training, and post-project monitoring are all examples of project management methods (Abuya, 2023; Carvalho, 2023; and Zhang & Fan, 2023). Organisations that use optimal project management methods reap several benefits, including knowledge transfer, good communication, optimized cost and time, improved process quality, improved market position, an international perspective on labour, and better project monitoring and control (Ilies, Crisan & Muresan, 2021).

Projects provide a significant contribution to economic and social development (Bond-Barnard, Fletcher, & Steyn, 2024). The major objective of project management is to effectively complete a project on schedule, on budget, and on quality while managing the unique project environment (Florice, Michela, & Piperca, 2024). Project management methods, according to Kebeya (2023), have become a universal instrument for maximum performance in every firm seeking professionalism. Project management techniques,

according to Tinoco, Sato, and Hasan (2024), are the skills and science of planning, creating, and managing activities across the project lifecycle processes.

Abuya (2023) indicated that projects in Kenya face challenges during the implementation phase, specifically in meeting the expected project objectives. The indicators of project failure are a lack of meeting the project's time, cost, and quality, caused by an inefficient implementation process (Aarseth, Ahola, Aaltonen, Økland, & Andersen, 2024; Nyakundi, 2023). A project initiated, implemented, and closed on time, within budget, at specified quality standards, and without unprecedented procurement, meets the major criterion for measuring project performance (Alzaabi, Khatibi, Azam, & Tham, 2020).

Ihuah, Kakulu, and Eaton (2023) suggest understanding the rework procedures, effectiveness, and productivity in the construction industry to ensure projects are within schedule, cost, and quality criteria. The success of every project is greatly reliant on the time it takes to complete it. This has a direct influence on management choices, including budgets, goals, and standards (Kamunya & Chege, 2021). Factors such as wrong priority influence the implementation of development projects, which is the most crucial stage in project management. Other factors include shortfalls in resource availability, inadequate assessment of targets, wrong scheduling of time for project completion, inadequate project identification, formulation, and design, and faulty conceptualisation of policy (World Bank, 2020).

According to Kamunya and Chege (2021), project performance can be estimated and assessed through the use of various indicators of performance. These include cost, time, quality, customer satisfaction and changes, business execution, well-being, and security. Cost, time, and quality were recommended by Williamson, Fearon, and Kelly (2023) as parameters against which venture execution may be judged. According to Cserhati and Szabo (2023), the primary indices of project performance are cost, time, user happiness, and quality. According to Carvalho (2023), project success should be measured not only

by the attainment of quantitative benefits, but also by the project managers' capacity to maintain performance gains such as profitability, labour productivity, and lessons learned.

Project management, according to the Project Management Institute (2024), is the application of knowledge, skills, tools, and methods to project operations to satisfy the expectations of project stakeholders. To do this, project management employees must have a thorough awareness of the dynamics of project management processes (Floriciel et al., 2024). Project management methods have evolved into a management tool used to achieve optimum performance in every business that strives for excellence and professionalism (Barriere, 2021).

Project scope, purchasing, project monitoring, risk management, people engagement, budget management, outcome of the project and certification, technology employed, user training, and post-project monitoring are some of the project management methods. Project planning comprises identifying activities, scheduling, task sequencing, quantity and quality analysis, and mobilising all resources that must be used in a time-phased manner. A complete analysis of exercises, undertaking, procedure and method, installation or fulfilment of procedures, timetables and budget plan, and a sign of the appropriate approach for each procedure needs may be found in the project plan (Malala, 2022).

PMI (2024) emphasises the necessity of the project manager monitoring and directing the project throughout the whole project cycle. Cukwuemeka (2022) emphasises the importance of the project manager in ensuring that all project operations are carried out in accordance with the project's cost, schedule, and scope. The degree to which planned objectives are met, as well as whether the project fulfills the purpose intended to satisfy within the specified time, cost, and quality requirements, determines the project's success (Zhang & Fan, 2023). Effective project planning and control can be achieved through the application of project management systems (Carvalho & Rabechini Junior, 2023).

Project management is not given significant attention in developing countries, as shown by the presence of three Project Management Institutes on the continent (PMI, 2024). Due to technological advancements, rising project complexity, and a paucity of human resources, the present situation of project management methods in emerging African nations remains crucial (Aarseth, Ahola, Aaltonen, Økland, & Andersen, 2024). In developing countries and in regions such as Africa, project management practices in the public sector are being applied in the initial stages (Ihuah, Kakulu, & Eaton, 2024). The practices are new and aim at attaining project objectives within specific periods and cost parameters through the effective use of resources and the implementation of planning and control systems. Idoro and Patunola-Ajayi (2021) study on current project management approaches and techniques showed that project practices are not well-recognised in the public sector, leading to failure to meet budget, schedules, and project specifications.

Successful project implementation entails quickly switching over a key arrangement and doing what needs to be done to keep the emphasis on critical objectives and aims. According to Brown and Hyer (2021), compelling project execution and projects may be handled depending on time planning, cost and financial plans, and the nature of the task performed. These three factors are also project implementation's Key Performance Indicators (KPIs). It is crucial to note that, regardless of the project's concept, implementation requires some investment, usually more than anticipated, and that a variety of external imperatives may arise, all of which should be addressed before beginning the implementation phase (Aarseth et al., 2024).

Work design must be developed before implementation can begin, and the arrangement must be clearly understood by all project collaborators (Bond-Barnard et al., 2024). All specialised and non-specialised requirements should be clearly defined. The project's financial, specialised, and institutional frameworks should be prepared, taking into account both internal and external factors (Florichel et al., 2024). The working group should identify its strengths and weaknesses (inward powers), opportunities, and threats (outer powers). The traits and opportunities should be leveraged to ensure the project's

successful completion (Kamunya & Chege, 2021). The project flaws and risks could stymie project execution; therefore, all necessary measures should be put in place to mitigate them (Köhler et al., 2022).

1.1.1 Global Perspective of Project Management Practices

Ling et al. (2021) developed a model to forecast project success in China, based on project management methods used by Chinese construction firms. The findings indicate that certain scope management approaches may predict project effectiveness in terms of the “iron triangle,” customer satisfaction, and profit margin. Improved road-building technology and methodology may help projects to be completed more effectively and in less time in Europe. Road projects may also be completed with fewer resources if construction technologies such as prefabricated and modular construction and new building materials are used (Mabin & Baldrestone, 2023).

According to Yap, Chow, and Shavarebi (2024), the Malaysian construction industry is important to the country’s economy, but it has a reputation for construction delays, unrealistic timelines, accidents, poor workmanship, and disagreements among members of the project team, as well as abandoned and incomplete private and community-wide construction projects. Structures crumbling, roads cracking, and bridges tumbling indicate some dire circumstances for the Malaysian construction sector, which has created a negative image in the eyes of the public. There is a pressing need to avoid project failure, which is largely attributable to inadequate project management practices across the industry (Mir & Pinnington, 2023).

According to a study conducted by Arnaboldi, Azzone, and Savoldelli (2023) on the Italian government, the use of management practices in the public sector has been proven to be a good way to aid in the advancement of management abilities while also allowing the public sector to effectively complete projects and achieve developmental goals. The employment of the project management approach in the public sector, according to

Arnaboldi et al. (2023), is due to pressure on the government to abandon inflexible organisational structures in favour of composite structures. One noteworthy conclusion was that the project's strategic approach needed to be improved and suited to the needs of public institutions.

After the Indian government understood the situation on its development based on the population growth, it called for large Public-Private Partnerships (PPPs) between the government and the private sector on key infrastructure projects. However, this could not be done from the central government because of the geographical size and location of the projects, cultural differences between communities in the country, and differing needs of development projects among the Indian people. As a result, the government was obliged to adopt decentralized operations in which the nation was divided into councils (equivalent to county administrations) that each handled a population of at least 1.5 million people (Al-Kharashi and Skitmore, 2021).

Alsuwaidi (2022) argued in his investigation on the developmental stage in Asian countries that India's advancement was tied to the regional autonomy of its infrastructural development for a variety of reasons, including financial resource scarcity, neediness, divergent additional taxes, infrastructure improvements, community religious views, participation, and technological levels.

1.1.2 Regional Perspective of Project Management Practices

Governments are constantly confronted with the enormous task of properly overseeing the execution of a large number of planned projects using established techniques. The initiatives are crucial in laying a strong basis for a future successful country. Projects, according to the World Bank, have a defined life cycle that ends only when the project has met its goals. According to Kaliba, Muya, and Mumba (2021), several types of projects exist, ranging from government-funded infrastructure such as roads, power, railway lines, housing units, and industries, to small-scale individual endeavors such as

retail stores. The authors noted that efficient project execution needs people, capital, and non-capital resources, such as a positive and supportive culture.

According to Nguyen (2021), attempts to impart project management expertise to Africa failed due to a lack of top-level backing and the belief that project management methods were unsuited for developing nations. According to Nyakundi (2023), owing to the changing nature and introduction of new technologies, as well as the liberalization of trade rules, there is an urgent need to establish project management methods in developing nations, resulting in a highly competitive marketplace.

The Nigerian construction sector is now experiencing project performance issues, which are contributing to the country's declining GDP. The known histories of project failure in building, road, and other infrastructure construction projects demonstrate this performance problem. Poor construction project performance, according to Nwachukwu and Nzotta (2021), is regressive in most emerging countries. This might be attributed to a lack of application of project management best practices, project performance metrics, and important success variables, all of which make up the multivariate that affects construction projects. A lack of comprehension of the connections between these multivariate variables may not be clear.

Furthermore, project management is one of the issues that developing nations confront, with projects often failing to achieve budget and time targets (Rwelamila & Ogunlana, 2021). In Tanzania, several recent studies, such as Kavishe and Chileshe (2024), have identified significant obstacles to PPP implementation. The bulk of the top-ranked obstacles were project management-related concerns, such as knowledge, planning, contractual, monitoring, and public-private partnership issues. Previous research in developed and developing nations, such as Australia (Cheung, Chan, and Kajewski, 2022) and Lebanon (Radujkovi & Sjekavica, 2024), has shown similar issues.

1.1.3 Local Perspective of Project Management Practices

In Kenya, the national government has decentralized funds and some functions to the county governments, implementing various projects, including road construction (Kinyua, Ogollah, & Mburu, 2023). Decentralization of funds and functions to the county government aims to alleviate poverty and decrease imbalances in regional development. According to a government of Kenya report (2023), the country has made improvements since the promulgation of the new constitution in 2010 because county governments own and plan their projects (Briceno-Garmendia & Shkaratan, 2022). The County government partially funds the projects, while the rest of the funds are sourced from the national government. Nyakundi (2023) stated that county governments' project implementation performance is below par. Some of these reasons cited include a lack of sufficient human resources, a lack of clear internal coordination frameworks, regulations in public institutions, and low motivation caused by low or no pay.

According to Ocharo and Kimutai (2024), public organisations often lack clear rules to guide systems that promote or select service providers eligible to contract with them. Due to the limited nature of most organisations, present standards, for example, hinder supplier growth and cooperation. Politics, corruption, financial theft, tribalism/nepotism, incorrect priorities, and low adoption of improvements are all variables that impact the execution of development programs (World Bank, 2022).

The United Nations Development Programme (UNDP) published a report from a study that sought to understand the nature of projects and the rate of polarization in Kenya and discovered that major projects in Kenya fail due to tribalism and nepotism, with major tribes with significant populations dominating public offices and projects. One of the main reasons Kenyans supported the new constitution was to remove impediments to development and, via devolution, bring such developments closer to them. Devolution also involves providing appropriate development initiatives to worthy and needy people in the country's countryside, slums, and neglected regions (Kamunya & Chege, 2021).

Since the new constitution was proclaimed, the nation has considerably improved infrastructure, education, mining, water, SMEs, and general industrialization, according to the GOK report (2024). Kenya's 47 counties control their projects and development plans, finance a portion of them, and rely on the central government to make up the difference. Nonetheless, performance throughout the project implementation process in the counties falls short of expectations for a variety of reasons. The lack of specific internal coordination processes and laws in public institutions, insufficient stakeholder involvement, a lack of sufficient manpower, and a lack of incentive for projects due to late or no compensation have all played a role in project failure or stalling (Ihuah et al., 2023).

One of the key challenges facing county government projects is the inadequate application of project management principles, alongside a lack of empirical studies demonstrating how such principles may mitigate implementation challenges (Kamunya & Chege, 2021). The Uasin Gishu County administration, through its ministries of commerce, education, transportation, tourism, water, and sanitation, has developed a number of programs to improve the lives of its citizens (County Government of Uasin Gishu, 2022). These initiatives are sponsored by a variety of sources, including the national government, county governments, the World Bank, and other international development organizations. The county administration, led by the Governor and comprising the heads of numerous ministries, is responsible for implementing government-funded projects (Kamunya & Chege, 2021).

Projects contribute significantly to the development of the nation and require enormous capital outlays. County governments' participation in projects has broadly been embraced (Kebeya, 2023). Nonetheless, the failure to apply project management methodologies is the main reason for project failure at the county government level. This problem has been exacerbated by the lack of studies on this area that could recommend how practices could be introduced (Briceno-Garmendia & Shkaratan, 2022).

The County Government Act assigns important tasks to County Authorities and establishes decentralized legal, administrative, and regulatory authorities. Since Kenya's devolution, there has been a massive rise in building projects around the nation. Gwayo (2023) observed a growing concern about why the required goals are not being met in accordance with the project's client's expectations. Many projects were not finished owing to customer difficulties, non-availability of supplies, bad infrastructure, lack of funding, and project management competence, according to the Kenya Urban Road Authority (2022). Most of the projects carried out in most counties were not finished on schedule owing to the contractors' poor pace. The majority of counties accused the contractors of violating the tender's terms and conditions. The project's cost rises as a result of the contractors' failure to meet the deadline.

Under the Act, the Uasin Gishu County government is responsible for land use planning, infrastructure delivery, and social services, among other functions. The county is also responsible for monitoring urban development, which is governed by a variety of laws. Like every other county, Uasin Gishu County has struggled to complete its projects. The county government's initiatives have been delayed or halted, undermining development and the agricultural sector, which is the principal source of revenue. According to the Government of Kenya (2023), infrastructure is critical to the country's economic growth because it boosts productivity and competitiveness. Under the Kenya Vision 2030 development goal, the second Medium Term Plan (2013-2017) highlighted infrastructure as a crucial facilitator of sustainable growth and development.

1.1.4 Implementation of County-Funded Road Projects in Uasin Gishu County, Kenya

Implementation of county-funded road projects is central to the realization of devolved development objectives in Kenya. Under the Fourth Schedule of the Constitution of Kenya (2010), county governments are responsible for the construction and maintenance of county roads, street lighting, parking facilities, and public transport infrastructure. In

Uasin Gishu County, road infrastructure is a key priority identified in the County Integrated Development Plan (CIDP) 2023–2027 because of its role in improving connectivity, facilitating agricultural marketing, promoting industrial growth, and enhancing access to education, healthcare, and other essential public services. Consequently, the county government allocates a substantial proportion of its annual development budget to road construction, rehabilitation, and maintenance projects to support sustainable socio-economic development (Uasin Gishu County Government, 2023).

Successful implementation of county-funded road projects is measured by the extent to which projects are completed within the approved budget, completed within the planned schedule, achieve the intended project scope, and conform to the required quality standards. These performance dimensions are consistent with the project management success criteria advocated by the Project Management Institute (PMI, 2021), which emphasizes the importance of balancing cost, time, scope, and quality in project delivery. However, reports from the Office of the Auditor-General and the Controller of Budget have consistently highlighted implementation challenges affecting county-funded projects in Kenya, including delayed completion, cost escalations, scope variations, poor workmanship, and abandoned projects. Such challenges reduce the value obtained from public investment and limit the ability of county governments to deliver essential services to citizens (Office of the Auditor-General, 2023; Controller of Budget, 2024).

In Uasin Gishu County, despite increased investment in road infrastructure over recent years, concerns remain regarding the efficiency and effectiveness of project implementation. Audit reports and county implementation reports have pointed to delayed project completion, budget overruns, incomplete road works, and instances where completed projects failed to meet the expected quality standards. These implementation challenges have affected farmers, traders, transport operators, businesses, and local communities that depend on reliable road infrastructure for economic and social activities. The persistent implementation gaps suggest that improvements in project management

practices are necessary to enhance project performance. It is against this background that the current study sought to examine how project planning, project team management, project monitoring and evaluation, and project stakeholder involvement influence the implementation of county-funded road projects in Uasin Gishu County, while considering the moderating effect of government regulation (Uasin Gishu County Government, 2023).

1.2 Statement of the Problem

Government projects are vital to citizens, who are the primary beneficiaries. Funded programs aim to address socio-economic development challenges facing the marginalized population. Therefore, the failure of such projects has a profound negative socio-economic impact on the project beneficiaries (World Bank, 2021). Pretorius, Steyn, and Jordaan (2022) report that fewer projects globally are completed within budget or meet original goals and business objectives. The results show the current state of project outcomes: 55% of projects were completed within the original budget, 51% were completed on time, and 32% of project budgets were lost to failed projects (PMI, 2024). According to a report by the Kenya Institute for Public Policy Research and Analysis (KIPPRA), approximately 60% of county-funded road projects in Kenya experience significant delays, with many extending beyond the projected completion timelines.

Over a five-year strategic plan cycle, the County Government of Uasin Gishu has been executing capital projects. According to the World Bank's (2020) research, Uasin Gishu County has failed to implement significant development projects in 47 percent of cases. Factors cited include incorrect project priorities, limited financial resources, political influence, corruption, low levels of technology, inadequate infrastructure, insufficient community engagement, and inadequate managerial support. Furthermore, according to a report by the Auditor General (ROK, 2021), a considerable number of public projects funded at high prices by the county administration of Uasin Gishu County did not achieve the planned aims (Kebeya, 2024). A study by the National Construction Authority (NCA) indicates that around 45% of road projects in Uasin Gishu County exceed their initial

budgets by at least 20%. This is attributed to poor planning, resource mismanagement, and unforeseen issues during project execution. The Kenya Roads Board (KRB) has highlighted that about 30% of the roads constructed under county-funded projects in Uasin Gishu County have quality concerns, including premature deterioration and structural failures. This is often due to inadequate supervision and substandard materials (Aduma, & Kimutai, 2024).

According to the Uasin Gishu County Road Office (2022), 17 road improvements were conducted in the County between 2010 and 2018, but none met expectations. The significant frequency of failed road projects shows that there are unidentified underlying project management practices that are likely to impact project execution. It was discovered that many initiatives failed despite meeting the triple criterion, prompting scholars to delve further into the subject of success (Velayudhan & Thomas, 2024).

The delivery of county-funded road projects is not merely an administrative concern but a constitutional and policy priority. Kenya Vision 2030 identifies infrastructure, and roads in particular, as a key enabler of the country's economic pillar (Republic of Kenya, 2021). The Constitution of Kenya (Republic of Kenya, 2021), under its Fourth Schedule, devolves the construction and maintenance of county roads to the county governments. The County Governments Act (Republic of Kenya, 2022a) and the Public Finance Management Act (Republic of Kenya, 2022b) further oblige counties to plan, budget for and deliver such projects prudently and with value for money. Despite this enabling legal and policy framework, the implementation of county-funded road projects in Uasin Gishu County has remained persistently weak, suggesting that the problem lies not in the absence of mandate or funding alone, but in how the projects are managed.

The recurrent failure of these projects points to weaknesses in the project management practices applied during implementation. Effective delivery depends on sound project planning, competent project teams, disciplined project monitoring and evaluation, and meaningful stakeholder involvement; where these practices are weak or inconsistently

applied, projects exceed their budgets, overrun their schedules and fall short on quality and scope. The Auditor-General (Republic of Kenya, 2021) and successive county reports attribute the poor delivery to inadequate planning and prioritization, weak supervision and monitoring, limited technical and managerial capacity, and insufficient community engagement. Yet the specific contribution of each of these practices to the successful implementation of county-funded road projects has not been empirically established in this devolved-government context.

Moreover, project management practices are not exercised in isolation; they operate within a regulatory environment shaped by infrastructure financing, government policy and the enforcement of construction standards. Where financing is delayed, policy is misaligned, or standards are poorly enforced, even sound management practices may fail to translate into successful delivery. It therefore remains unclear whether, and to what extent, government regulation strengthens or weakens the relationship between project management practices and the implementation of county-funded road projects — a question that prior studies on county road delivery have rarely examined.

These failures carry a heavy socio-economic cost for the residents and road users of Uasin Gishu County who are the intended beneficiaries of improved road connectivity. However, the existing body of knowledge presents three notable gaps. Contextually, there is limited empirical evidence on the implementation of county-funded road projects in Uasin Gishu County under the devolved system of government. Conceptually, no known study has integrated project planning, project team management, project monitoring and evaluation and project stakeholder involvement with government regulation as a moderating variable within a single model. Methodologically, moderated (interaction-based) regression has rarely been applied to this problem.

It is against this background, and to address this contextual, conceptual and methodological gap, that the present study sought to examine the relationship between project management practices and the implementation of county-funded road projects in

Uasin Gishu County, and the moderating effect of government regulation on that relationship.

1.3. Objectives of the Study

1.3.1 General Objective

The general objective of this study was to examine the influence of project management practices on implementation of county-funded road projects in Uasin Gishu County, Kenya.

1.3.2 Specific Objectives

The specific objectives of the study are to:

- i. Evaluate the influence of project planning on project implementation of county-funded road projects in Uasin Gishu County, Kenya.
- ii. Assess the effect of project team management on implementation of county-funded road projects in Uasin Gishu County, Kenya.
- iii. Determine the impact of project monitoring and evaluation on implementation of county-funded road projects in Uasin Gishu County, Kenya.
- iv. Establish the relationship between project stakeholder involvement and the implementation of county-funded road projects in Uasin Gishu County, Kenya.
- v. Ascertain the moderating effect of government regulation on the relationship between project management practices and the implementation of county-funded road projects in Uasin Gishu County, Kenya.

1.4 Research Hypotheses

The Research was guided by the following null hypothesis:

H01. Project planning has no significant influence on implementation of county-funded road projects in Uasin Gishu County, Kenya.

H02. Project team management has no significant influence on implementation of county-funded road projects in Uasin Gishu County, Kenya.

H03. Project monitoring and evaluation have no significant influence in the implementation of county-funded road projects in Uasin Gishu County, Kenya.

H04. Project stakeholder involvement has no significant influence on implementation of county-funded road projects in Uasin Gishu County, Kenya.

H05. Government regulation has no significant moderating effect on the influence of implementation of county-funded road projects in Uasin Gishu County, Kenya.

1.5 Significance of the Study

1.5.1 County Governments of Kenya

The research has the potential to contribute to current project management knowledge while also raising performance standards among project management experts and across the industry. It aids in the better administration of county government-funded projects in all counties.

1.5.2 Policy Makers

The findings of the research may be useful to lawmakers when formulating legislation related to the execution of government projects. The data would also assist project organisers and administrators in making decisions. The examination of diverse project management procedures may stimulate further research aimed at identifying additional practices and understanding how they influence project implementation both within and beyond the current study's scope.

1.5.3 Project Managers

The study's findings improve the understanding of project managers and officials responsible for government projects in Uasin-Gishu County, as well as the performance of professionals involved in the project management process. This research supports government and private architects, engineers, quantity surveyors, construction project managers, and site agents by enabling them to apply its results when working on building projects. The outcomes of this research also benefit government-funded projects and project developers/clients, helping them achieve greater success in their building projects. This is because they can use the results of this research to ensure that project implementation planning issues are effectively addressed.

1.5.4 Future Scholars

The findings of this study would be relevant to future scholars and researchers by serving as a source of literature for their future studies on project implementation. Furthermore, the results would be relevant because they would reveal current research gaps that future researchers may focus on to expand the literature on project implementation.

1.6 Scope of the Study

The study was confined to Uasin Gishu County Road projects in Kenya, specifically to understand the influence levels of project planning, project team management, project monitoring and evaluation, and project stakeholder involvement on the implementation of projects in Uasin Gishu County.

1.7 Limitations of the Study

1.7.1 Uncooperative Respondents

Some respondents were not willing to cooperate due to the busy activities that they were undertaking at the time when the researcher expected them to fill out the questionnaire. To overcome the limitation, the researcher visited the management earlier so as to be given a convenient time, which gave room for data collection.

1.7.2 Working Schedules

The demanding work schedules of the respondents hindered the success of the study, as they were unable to provide the required information effectively due to time constraints. To overcome this limitation, the researcher consulted with the management to be given the right time when schedules were not very tight. This greatly helped to overcome the limitation.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents theoretical and empirical literature relevant to the influence of project management practices in the implementation of county-funded road projects. The conceptual framework shows the relationship between project management practices (independent variables) and the success of county-funded road projects (dependent variable). The research gaps and critique of the existing literature will also be discussed.

2.2. Theoretical Framework

2.2.1 Resource-Based View Theory

In 1984, Wernerfelt was a proponent of the hypothesis. A company's numerous production processes require resources, including money, experienced people, patents, competent management, equipment, and financing. According to Barney (1991), a company is a collection of physical capital, human capital, and organizational resources. The resource-based view's basic assumption is that organizational resources and competencies may differ dramatically from one business to the next and that these differences can be durable. The theory emphasizes organizational traits that are difficult to replicate as sources of business returns, as well as strategies for enhancing performance and achieving competitive advantage (Colbert, 2021).

Because it integrates strategic and organizational insights into a firm's competitive advantage, the Resource-based View of Organizations (RBV) has earned a reputation as a critical theory. In project management, the RBV entails identifying the PM resources and competencies that form the firm's competitive advantage (Almarri & Gardiner, 2023). The Resource-based Theory (RBT) is a widely used strategic management theory in

project management. It examines how resources can be leveraged to gain a competitive edge (Killen et al., 2022). According to the theory, strategic management entails creating and using a firm's distinctive resources and competencies, as well as continuously preserving and enhancing them (Taher, 2022).

The inability to adequately account for the management process is one of the resource-based theory's flaws and a major source of criticism. According to Simon, Hitt, and Ireland (2021), subsequent resource models depict this process as comprising resource portfolios, establishing capabilities, and exploiting existing capabilities to deliver value to consumers, all in pursuit of a competitive edge. As the environment becomes more unpredictable and competitive, managers of organizational institutions face more and larger duties (Taher, 2022). There are now no fixed salaries, and additional competitors, such as consulting companies, have entered the project management market, increasing competition (Colbert, 2021).

Institutions must be managed like commercial organizations, which requires top management teams to develop superior mental models. Managerial competencies are required in the contemporary environment to identify and seize opportunities and to reshape both tangible and intangible assets (Taher, 2022). The management strategy includes maximising and growing the organization's distinctive resources and competencies, as well as strengthening and sustaining them (Bharadwaj, 2021). From this standpoint, organizations deliberately implement strategies that are distinct from those of their competitors, thereby seeking to attain both competitive advantage and strategic efficiency. This implies that the strategies must be uncommon, difficult to imitate, or difficult to replace (Jugdev & Mathur, 2022).

According to the theory, a business may develop and grow skills over a long period relative to its competitors, thereby establishing a performance brand (Terziovski, 2021). It also predicts that strategic resources and competencies will enable firms to perform well (Almarri & Gardiner, 2023). The success with which these initiatives are executed is used

to assess performance. According to Crawford's (2021) research, project managers do not always have the necessary skills or undertake all the actions required to promote and implement the changes they lead as part of their projects. Resource-based theory acknowledges cost variables and resource constraints. As a result, it guides effective planning to ensure optimal resource use and allocation to meet project goals.

This theory is also significant to the research because it shows how businesses manage waste, given their resources and skills. The RBV theory helps businesses determine how resources, particularly project management (PM) skills that have been adapted to a specific organizational setting and developed over time, can produce competitive advantage. These resources can enhance a company's ability to manage projects effectively, thereby contributing to project performance and helping the business appropriate value. Furthermore, resources can be used to create entry barriers and improve industry performance.

2.2.2 Goal Setting Theory

Edwin Locke created the goal-setting theory in 1979. The theory argues that companies set objectives to ensure that initiatives within the organization function effectively and efficiently (Swann et al., 2021). The approach highlights the critical link between aims and outcomes (Fortes Tondello, Premasukh, & Nacke, 2024). All businesses that want to achieve effective results through efficient goal setting should adopt the goal-setting theory (Latham & Locke, 2022). Goal setting is widely accepted by managers as a technique for improving and maintaining performance (DuBrin, 2022). The fundamental finding of goal-setting research, based on hundreds of studies, is that people who are given precise, demanding yet attainable objectives perform better than those who are given easy, vague, or no goals at all. Individuals must, however, have adequate ability, accept the objectives, and receive performance feedback at the same time (Latham, 2021).

The goal-setting hypothesis is significantly related to project performance. A variety of ideas have been proposed to explain the link between goal setting and project success. There is evidence of a large, beneficial link (Neubert & Dyck, 2024). This implies that businesses adjust their level of commitment to a specific project objective they aim to achieve (Tubbs & Ekeberg, 2020). The goal-setting theory argues that organizations have sufficient commitment to fulfil project objectives and that such organizations are unwilling to decrease or abandon those goals (Jeong, Healy, & McEwan, 2021).

According to Koppes (2023), the goal-setting theory encompasses all elements of project performance in organizations. For every project to be successful, there are three basic concepts for creating objectives (Latham & Locke, 2024). The first principle is clarity, in which project objectives are defined in explicit, quantifiable terms and are met within specific time frames. The second concept is challenge, in which management sets objectives that are high and hard enough to allow the project to function well. The third concept is feedback, in which information about project progress is provided (Latham & Locke, 2024).

Regarding project success, implementing sustainable infrastructure provides economic, social, environmental, and organizational advantages (Carvalho and Rabechini, 2024; Meng et al., 2023). In the context of infrastructure sustainability management, achieving such sustainable infrastructure via PMPs may therefore be regarded as a goal-setting and goal-achieving process (Swann et al., 2021). The attainment of organizational objectives and commercial success via project management practices (PMPs) hinges on the systematic design and iterative modification of these practices, guided by the principles of the Plan-Do-Check-Act (PDCA) philosophy (Srivannaboon, 2021).

On the flip side, the goal-setting theory is criticized for being time-consuming and costly to implement because it requires addressing a variety of issues to fulfil the project's objectives, such as stakeholder selection and capacity development (Sorrentino, 2021).

The theory applies to this study because it emphasizes the need to set objectives to ensure the County Government's effective execution of initiatives.

2.2.3 Institutional Theory

North (1990) and Williamson (1985), who examined institutions through an economic lens, and DiMaggio and Powell (1993) and Scott (1995), who analysed institutions in terms of social facilitators and constraints, are considered the forerunners of institutional theory. Institutions are defined in a variety of ways; Hoffman (2020) describes institutions in the context of enterprises as social and cultural constraints that define what is acceptable and what is not, and what is implementable and what is not. According to Scott (2021), institutions are factors that exert social pressure and impose limits on people and organizations. They determine what is and is not acceptable (Suddaby, 2023).

The influence of circumstances outside an organization's control on its behaviour is the subject of institutional theory (Hoffman, 2020). It presents institutional factors as a tool for behavioural analysis, allowing one to look beyond market forces when examining the behaviour of an organization or people within it (Krell, Matook, & Rohde, 2024). The goal of institutional theory is to understand organizations and managerial behaviour as shaped by social and institutional constraints rather than by economic and market factors (Qiu & Chen, 2022).

Institutions, according to Scott (2021), are made up of cultural-cognitive and regulative factors that, when combined with linked activities and resources, give life purpose. He goes on to say that institutions are made up of three pillars: regulatory, normative, and cultural cognition. The regulatory pillar stresses the use of rules, regulations, and punishments as enforcement tools, with expediency serving as the foundation for compliance (Badewi & Shehab, 2024). When it comes to implementing sustainable initiatives in public-service organizations, this notion is crucial. The theory provides a framework for understanding the rules and regulations that underpin project management

techniques, thereby enabling more effective project execution, a factor of critical significance to the present study.

2.2.4 Stakeholder Theory

Stakeholder Theory, advanced by Freeman (1984), holds that an organization must create value for, and balance the interests of, all parties who affect or are affected by its activities, rather than serving shareholders alone. A stakeholder is thus any individual or group, employees, customers, suppliers, financiers, government, communities and other affected parties, with a legitimate interest in the organization's conduct and outcomes. Departing from the traditional shareholder-centred view of the firm, Freeman (1984) argued that long-term organizational success depends on the extent to which managers identify their stakeholders, understand their expectations, and manage the relationships among them constructively. The theory therefore treats stakeholder relationships not as constraints to be minimized but as strategic assets to be cultivated, since the cooperation, resources, information and legitimacy that stakeholders provide are indispensable to the achievement of organizational goals.

Central to the theory are the interrelated processes of stakeholder identification, analysis and engagement. Managers are expected first to identify who their stakeholders are, then to assess their interests, expectations, power and influence, and finally to engage them through information-sharing, consultation, dialogue and participation in decision-making (Laplume, Sonpar & Litz, 2024). Effective engagement is understood as a two-way flow of information in which stakeholders both receive information and contribute to the decisions that affect them (Eskerod & Huemann, 2023). Where this is achieved, the organization earns legitimacy, secures cooperation, pre-empts conflict, and improves the quality and acceptability of its decisions. Stakeholder Theory further recognizes that stakeholders differ in salience and that their interests may compete, so a core managerial task is to prioritise and reconcile these interests in a fair and transparent manner. The theory has nonetheless attracted criticism for the difficulty of balancing conflicting claims

and for the potential ambiguity in determining whose interests should take precedence, yet it remains widely applied because it captures the relational and collaborative realities of delivering complex undertakings such as public infrastructure projects.

In the context of this study, Stakeholder Theory directly underpins the variable of project stakeholder involvement and provides the conceptual justification for treating it as a determinant of successful project implementation. The delivery of county-funded road projects in Uasin Gishu County involves a wide array of stakeholders, the county government as owner and financier, the national government, contractors and consultants, oversight and regulatory bodies, road users, and the local communities who are the intended beneficiaries. Each of these parties affects, or is affected by, the road projects, and their cooperation is essential at every stage of the project life cycle. Consistent with the theory, the study holds that identifying these stakeholders, surveying their expectations, sharing information with them, and involving them in planning and decision-making enhances ownership, transparency and shared responsibility, thereby reducing disputes and delays and increasing the likelihood that projects are completed on time, within budget and to the required quality. Projects delivered with, rather than merely for, their beneficiaries command greater public support and are less prone to resistance, vandalism or abandonment.

Stakeholder Theory also complements the other perspectives adopted in the study: it situates project implementation within a network of relationships that extends beyond the county's internal resources, and it recognizes government, through its regulatory and financing role, as a powerful stakeholder whose actions condition project outcomes. In this way the theory not only grounds the stakeholder-involvement variable but also reinforces the study's broader argument that successful delivery of county-funded road projects depends on the effective management of both internal capabilities and external stakeholder relationships.

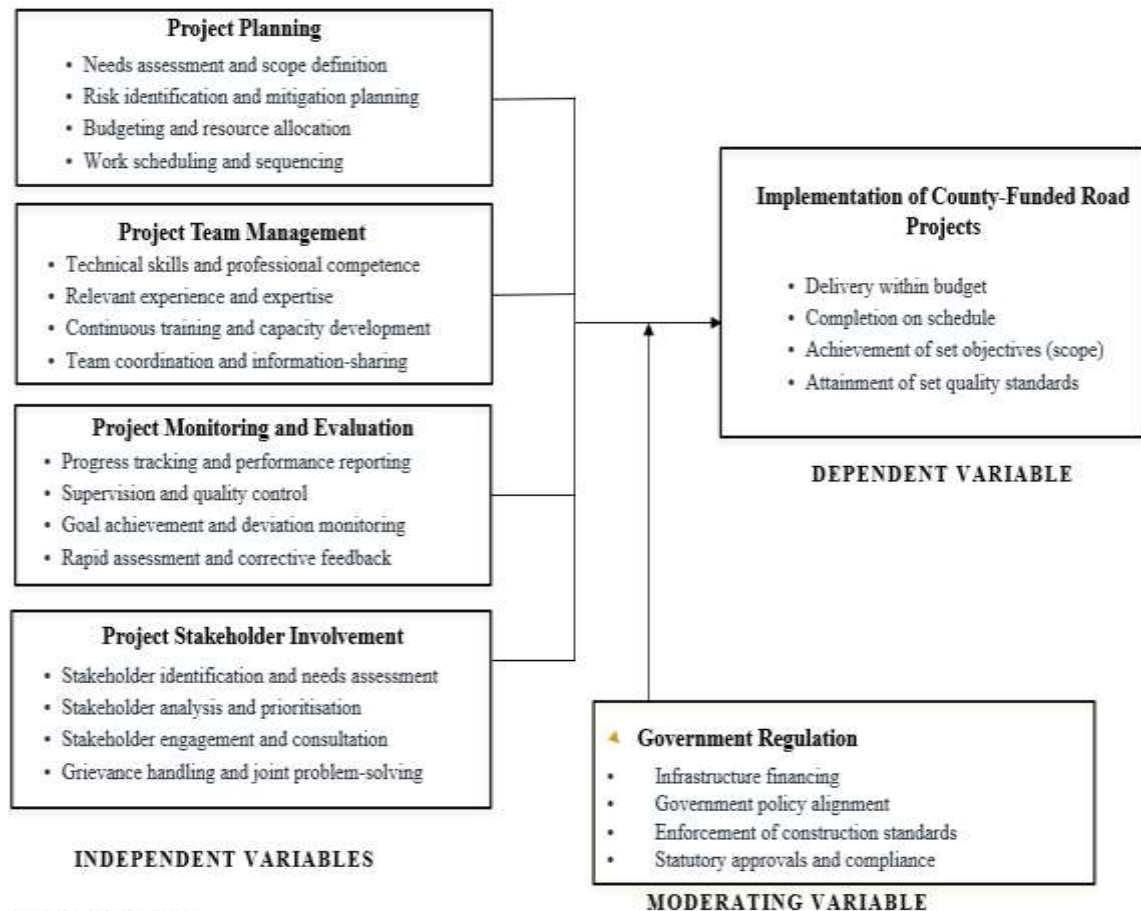
2.2.5 Contingency Theory

Contingency Theory, associated with Lawrence and Lorsch (1967), holds that there is no single best way to organize or manage; rather, the most effective approach is contingent upon the internal and external conditions facing the organization. Applied to project management, the theory implies that the success of a project depends on the fit between the management practices adopted and the context in which the project is implemented, including the regulatory and financing environment. In this study, Contingency Theory anchors the dependent variable, the implementation of county-funded road projects: successful implementation is understood as the outcome that results when project management practices are appropriately matched to their operating context. The theory is particularly apposite given the study's moderation hypothesis, which holds that the effect of the practices on implementation is contingent on the level of government regulation.

Taken together, the theories underpin the variables of the study as follows: the Resource-Based View underpins project planning and project team management; Goal-Setting Theory underpins project monitoring and evaluation; Stakeholder Theory underpins project stakeholder involvement; Institutional Theory underpins the moderating variable of government regulation; and Contingency Theory anchors the dependent variable, the implementation of county-funded road projects.

2.3 Conceptual Framework

The conceptual framework outlines the anticipated relationship between project management practices (project planning, project team management, project monitoring and evaluation, and project stakeholder involvement) and successful project implementation (the dependent variable) in Uasin Gishu County, Kenya.



Source: Author (2024)

Figure 2.1: Conceptual Framework

2.3.1 Project Planning

Project planning uses a range of tools and techniques to support organized execution and efficient resource management. Gantt charts, for instance, are pivotal for visually representing project timelines, tasks, dependencies, and milestones. They enable project managers to allocate resources effectively, track progress, and adjust schedules as needed. PERT charts, on the other hand, focus on analyzing task dependencies and critical paths, helping teams identify the most efficient sequence of activities to ensure timely project completion. These tools provide clarity on project timelines and dependencies, which is

essential for managing complex projects with multiple stakeholders and tasks (Catanio, Armstrong & Tucker, 2024).

Resource allocation matrices complement these charts by showing how resources—human, financial, or material—are distributed across project phases. By aligning resource availability with project demands, these matrices prevent over allocation or underutilization, optimizing resource use throughout the project lifecycle. Moreover, risk assessment and management techniques, such as risk registers and SWOT analysis, anticipate potential risks and develop strategies to mitigate them. This proactive approach minimizes disruptions, enhances decision-making, and safeguards project outcomes against unforeseen challenges (Aarseth et al., 2024).

Project plans serve as comprehensive roadmaps that outline project objectives, scope, deliverables, timelines, and resource requirements. A scope statement defines project boundaries and goals, ensuring alignment with stakeholder expectations. The work breakdown structure (WBS) further decomposes the project into manageable tasks, facilitating task assignment, resource allocation, and scheduling. A resource management plan details how resources will be allocated, managed, and monitored, ensuring efficient resource utilization throughout the project lifecycle. Communication plans establish protocols for stakeholder communication, reporting structures, and update frequency, promoting transparency and effective collaboration. Quality management plans set criteria for project deliverables, ensuring adherence to quality standards and customer expectations. Risk management plans identify potential risks, assess their impact on project objectives, and outline strategies for mitigation and contingency planning. Together, these plans provide a structured framework for project execution, guiding teams through each phase while minimizing risks and optimizing outcomes (Carvalho & Rabechini Junior, 2024).

Policies and guidelines are crucial to project planning, providing decision-making frameworks, standardizing procedures, and ensuring adherence to organizational

standards and best practices. Governance policies define roles, responsibilities, and authority levels within the project team and among stakeholders, fostering accountability and clarity in decision-making. Compliance guidelines ensure adherence to legal, regulatory, and ethical standards relevant to the project's industry or operational context, mitigating legal risks and enhancing organizational reputation. Risk management policies establish guidelines for identifying, assessing, and responding to risks, promoting a proactive approach and enhancing project resilience. Quality assurance policies set benchmarks for product or service quality, outlining procedures for quality control, testing, and validation to meet customer expectations and industry standards. Safety and environmental protection policies define protocols for ensuring workplace safety, environmental sustainability, and compliance with health and safety regulations, prioritizing the well-being of project stakeholders and minimizing environmental impact (Kinyua et al., 2020).

2.3.2 Project Team Management

Project team management is crucial to achieving successful project outcomes, encompassing a combination of skills, experience, and ongoing training to effectively tackle challenges and deliver results. A project team's proficiency lies in a diverse array of skills that collectively support project execution. Technical skills are fundamental and encompass expertise in software development, engineering, design, and specific industry knowledge. Soft skills, including communication, teamwork, problem-solving, and leadership, are equally essential. These skills enable effective collaboration, clear communication with stakeholders, and the ability to navigate complexities within the project environment. Analytical skills are critical for assessing data, identifying trends, and making informed decisions, while time management and organizational skills ensure efficient use of resources and adherence to project timelines (Mclees & Matthews, 2024).

Experience provides invaluable insights and a proven record of navigating challenges similar to those in the project. Industry experience offers understanding of sector-specific

nuances, regulations, and best practices, facilitating smoother project execution and stakeholder engagement. Project-specific experience is also vital, as team members familiar with similar projects can anticipate potential pitfalls and leverage successful strategies. Leadership experience within the team ensures effective delegation, conflict resolution, and decision-making, fostering a cohesive, high-performing project team (Kavishe & Chileshe, 2024). Experience not only enhances confidence and efficiency but also contributes to innovation and adaptation in dynamic project environments. Continuous training and development are integral to building team management throughout the project lifecycle. Technical training keeps team members up to date on advancements in their fields, ensuring they apply the latest tools and methodologies effectively. Soft skills training, including workshops on communication, negotiation, and emotional intelligence, strengthens interpersonal dynamics and collaboration within the team. Project management training equips team leaders and members with frameworks such as Agile or Six Sigma, enhancing their ability to plan, execute, and monitor projects efficiently. Cross-functional training encourages versatility among team members, enabling them to fill multiple roles and respond adeptly to evolving project demands (Radujkovi & Sjekavica, 2024).

Moreover, leadership development programs cultivate future project leaders within the team, nurturing strategic thinking, decision-making, and team management skills. Mentorship and coaching programs provide guidance and support from experienced professionals, fostering continuous learning and personal growth. By investing in training and development initiatives, organizations not only enhance team management but also foster a culture of innovation, adaptability, and long-term success in project execution (Kamunya & Chege, 2021).

2.3.3 Project Monitoring and Evaluation

Project monitoring and evaluation (M&E) are integral to effective project management, providing mechanisms to track progress, assess performance, and inform decisions

throughout the project lifecycle. A range of tools and techniques are used in M&E to collect data, analyze progress, and measure outcomes. Key Performance Indicators (KPIs) are quantitative and qualitative metrics that gauge project performance against predefined targets. They provide benchmarks for success and enable continuous monitoring of project activities. Data collection methods include surveys, interviews, observations, and document reviews, ensuring comprehensive data capture from stakeholders and project activities (Kerzner & Saladis, 2024).

Monitoring tools, such as progress reports, dashboards, and milestone trackers, enable real-time tracking of project activities, expenditures, and timelines. These tools highlight deviations from planned schedules or budgets, enabling prompt corrective action to keep the project on track. Evaluation techniques, such as cost-benefit analysis, impact assessments, and stakeholder analysis, assess the effectiveness, efficiency, relevance, and sustainability of project outcomes. These evaluations provide insights into the project's overall success and areas for improvement. The quality of M&E reports is crucial to their utility in decision-making and project improvement. A well-structured M&E report includes clear objectives, methodologies, findings, and actionable recommendations. It presents data in a logical format, making it accessible to stakeholders and facilitating informed decision-making. The accuracy and reliability of data ensure that conclusions drawn from the report are based on valid information, enhancing credibility and trust among stakeholders (Naidoo, 2024).

Moreover, timeliness is critical in M&E reporting, as timely information enables project managers and stakeholders to respond promptly to emerging issues or opportunities. Comparative analysis over time or across similar projects provides context and benchmarks for assessing performance trends and identifying best practices. Visual aids such as graphs, charts, and tables enhance data presentation, making complex information more understandable and compelling. M&E reports serve multiple purposes in project management, guiding decision-making and enhancing project effectiveness. Performance monitoring reports track progress against KPIs, identifying areas where adjustments are

needed to achieve project goals. Financial reports highlight expenditure trends, ensuring budget compliance and transparency in resource management. Risk assessment reports identify potential threats and propose mitigation strategies, helping preempt project disruptions (Ling et al., 2024).

Strategic planning benefits from M&E reports by informing future project initiatives, resource allocation decisions, and organizational strategies. Learning and knowledge sharing occur through the dissemination of M&E findings, enabling teams to learn from successes and failures and apply lessons to future projects. Accountability and transparency are reinforced as M&E reports provide stakeholders, donors, and regulatory bodies with evidence of project impact and outcomes (Stem et al., 2021).

2.3.4 Project Stakeholder Involvement

Stakeholder identification represents the foundational step in the project management process, aimed at systematically identifying all individuals, groups, or organizations that may be directly or indirectly affected by the project's outcomes or that possess a substantive interest in its successful execution. This process involves a thorough review of the project's scope and objectives to pinpoint potential stakeholders. Common stakeholders include project sponsors, customers, team members, suppliers, regulatory bodies, and the local community. Methods for identifying stakeholders include brainstorming sessions, interviews with key personnel, and analysis of organizational charts and project documentation. Effective stakeholder identification ensures that no critical stakeholder is overlooked, thereby facilitating the successful execution and uninterrupted progression of the project (Harold, 2024).

Once stakeholders have been identified, stakeholder analysis helps clarify their needs, expectations, and potential impact on the project. This involves categorizing stakeholders by their level of influence and interest. Tools such as the Power/Interest Grid are often used, plotting stakeholders on a matrix to determine the level of engagement required.

High-power, high-interest stakeholders require constant attention and active management, while those with low power and interest may need only periodic updates. A detailed stakeholder analysis helps project managers anticipate potential issues, understand stakeholder motivations, and develop strategies to manage expectations and gain support (Eskerold et al., 2020).

Stakeholder engagement is the ongoing process of involving stakeholders throughout the project lifecycle. It begins with a stakeholder management plan that outlines how and when stakeholders will be involved. Effective engagement includes regular communication, feedback loops, and participatory decision-making. Engagement techniques range from formal meetings, workshops, and progress reports to informal check-ins and collaborative tools such as project management software. The goal is to build strong relationships, ensure transparency, and foster a sense of ownership among stakeholders. Engaged stakeholders are more likely to support the project, provide valuable insights, and help navigate challenges, thereby significantly increasing the chances of project success (Laplume, Sonpar, & Litz, 2024).

2.3.5 Government Regulations

Government regulations are legally binding rules and directives issued by government authorities to control, manage, and guide activities within society. These regulations are designed to protect public health and safety, ensure fair practices, promote economic stability, and safeguard the environment. They cover a broad range of areas, including business operations, environmental protection, healthcare, consumer rights, labour laws, and public infrastructure (Musomba, 2021).

Infrastructural financing represents a fundamental dimension of government regulation, encompassing the institutional and financial mechanisms employed in the mobilization of resources for the development, operation, and maintenance of essential public services and facilities, such as transportation networks, water supply systems, and energy grids.

Governments often use a combination of public funds, private investment, and public-private partnerships (PPPs) to finance these projects. Public funds can come from tax revenues, government bonds, and international loans or grants. PPPs share risks and rewards between the public and private sectors, leveraging private capital and expertise while maintaining public control over essential services. Effective regulation in infrastructure financing ensures transparency, accountability, and efficient allocation of resources, ultimately contributing to sustainable development and economic growth (Ika, 2021).

Government policy plays a pivotal role in shaping the direction and effectiveness of infrastructural projects. Policies on land use, environmental protection, economic development, and social equity directly influence how infrastructural projects are planned, executed, and managed. For instance, policies promoting sustainable development can lead to the adoption of green building practices and the integration of renewable energy into infrastructure projects. Furthermore, government policies can set priorities for infrastructural investments, such as focusing on underserved or economically disadvantaged areas to promote equitable growth. Regulatory frameworks established by government policies help standardize procedures, ensure compliance with legal requirements, and align infrastructure projects with broader national or regional goals (Pernille, Martin & Claudia, 2024).

Construction standards are a crucial component of government regulations, providing the technical specifications and guidelines that ensure the safety, quality, and sustainability of infrastructure projects. These standards cover materials, design, engineering practices, and safety protocols. Governments establish construction standards through building codes, zoning laws, and environmental regulations, which all construction projects must follow (Nyandika & Ngugi, 2024). Adherence to these standards helps prevent structural failures, protect public health and safety, and mitigate environmental impacts. Regular updates to construction standards reflect advances in technology, changes in environmental conditions, and lessons learned from past projects. Effective enforcement of construction

standards is essential for maintaining infrastructural integrity and fostering public trust in its reliability and safety (Nyandika & Ngugi, 2024).

2.3.6 Operationalization of the Study Variables

For the purpose of measurement, each variable in the conceptual framework was operationalized through observable indicators drawn from the reviewed literature and the Project Management Body of Knowledge (PMI, 2022). Project planning was operationalized through four indicators: needs assessment and scope definition, risk identification and mitigation planning, budgeting and resource allocation, and work scheduling and sequencing.

Project team competency was operationalized through technical skills and professional competence, relevant experience and expertise, continuous training and capacity development, and team coordination and information-sharing. Project monitoring and evaluation was operationalized through progress tracking and performance reporting, supervision and quality control, goal achievement and deviation monitoring, and rapid assessment and corrective feedback.

Project stakeholder involvement was operationalized through stakeholder identification and needs assessment, stakeholder analysis and prioritization, stakeholder engagement and consultation, and grievance handling and joint problem-solving. The moderating variable, government regulation, was operationalized through infrastructure financing, government policy alignment, enforcement of construction standards, and statutory approvals and compliance.

The dependent variable, the implementation of county-funded road projects, was operationalized through delivery within budget, completion on schedule, achievement of set objectives (scope), and attainment of set quality standards. Each indicator was

measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

2.4 Empirical Review

2.4.1 Project Planning

Planning is a process that enables monitoring, guidance, communication, and coordination among stakeholders (Catania, Armstrong & Tucker, 2024). The process of developing goals and objectives that describe the work to be done, the project's timetable, and the resources needed to achieve them is known as project planning (Aduma & Kimutai, 2024). Through project planning, the techniques, strategies, and programs to attain those goals are determined (Aarseth et al., 2024).

The goal of project planning is to create a detailed guideline for the project that informs the project team about the work packages that must be completed and when they must be completed, as well as to keep track of the project's overall progress and to establish a record of the project for future use (Carvalho & Rabechini Junior, 2024). Project planning ensures that all project stakeholders have a thorough understanding of all activities and components, as well as the project's schedule, quality, and cost restrictions (Zailani, Ariffin, Iranmanesh, Moeinzadeh, & Iranmanesh, 2024). Furthermore, the goal of project planning is to ensure that the plan is feasible and that the process of converting "should be done work packages" into activities that can be accomplished is included (Kinyua et al., 2020).

The project planning process begins with the conception phase and continues until the project is completed (Demir, Bryde, Fearon, & Ochieng, 2022). According to PMI (2022), project time planning is the process of managing the project's timely completion. Evidently, time planning is a method for tracking and controlling the time spent on each task (PMI, 2022). According to Wideman (2021), time planning in a project is the function

responsible for allocating appropriate time to the overall conduct of the project through the stages of its natural lifecycle (concept, development, execution, and completion) using the processes of time planning, time estimating, time scheduling, and schedule control.

The project planning phase is generally the most difficult for a project manager, who must make accurate estimates of the number of people, resources, and equipment required to complete the project. They may also need to schedule communications and procurement activities and hire third-party vendors (Mwanza, Namusonge & Makokha, 2020).

Mwanza, Namusonge & Makokha (2020) identified numerous projects in various countries that were over budget and delayed due to inadequate planning, including Boston's Big Dig Project (275% cost overrun) and Denver's International Airport project (200% over budget). Similarly, Bangkok's USD 2 billion Skytrain project failed to meet its objectives, and the project's business faced financial difficulties as a result of passenger-estimate errors made during the design stage.

Due to insufficient planning, flawed design, incompetent project workers, poor monitoring and control procedures, limited funding, and delayed payments, Ayodele and Alabi (2023) concluded that Nigeria is the world's junkyard of problematic and abandoned projects. According to their survey, the average schedule overrun in India's construction sector is 55 percent, driven by poor planning, scope creep, and a lack of dedication and ability.

In research on agricultural project planning and analysis in Belgium, Anandajayasekeram (2023) defined project planning as the procedures that occur throughout the identification and preparation phases of the project life cycle, during which the broad context of project operations is established. The planning stage is where specific issue areas are identified and clear goals for achieving the desired changes are set; where alternatives are generated and decisions are made; and where suitable actions are planned for execution. The Logical Framework Technique (LFA), a tool for planning, monitoring, and assessing projects, is

also a good approach to relate projects to the larger context of regional development programs and national objectives, according to the results of Anandajayasekeram's (2023) research.

LFA is primarily used to explain cause-and-effect linkages and the logical connections among project inputs and objectives, project activities and outputs, broader purposes, and the final aims a project may serve (Mir & Pinnington, 2023). As a result, LFA is a methodical planning process grounded in logical reasoning. Using LFA requires considerable experience and expertise. According to Taylor (2021), project planning provides the foundation for project management, execution, monitoring, and assessment. It is necessary to learn to deal with ambiguity, subjective views and values, and to cultivate flexibility, openness, and communication in order to participate in and manage the planning process. The importance of participation in project planning cannot be overstated.

According to a 2023 study by Multiple Release Custom on project planning in the United Kingdom, a project manager should examine the six schedule management stages. The research indicates that activity definition, activity sequencing, activity resource estimation, and activity duration estimation are all included in creating the schedule baseline. The schedule management strategy should emphasize strategies for regulating the timetable. The completion of the planning phase is marked by the approval of the project management plan, the execution of the planning project status review, and permission to proceed to the next phase.

Botchie (2021) claims that local strategic planning in Ghana's rural districts requires knowledge of the state and trends of natural resources, as well as social and economic factors. The methods for gathering, synthesizing, and interpreting data are well established. There are various methods and structures that allow stakeholders to participate. A planning framework within which they may be brought together, as well as financial resources adequate to complete the task at the local level, are also required

(Project Management Institute, 2021). The study's findings revealed that rural planning assistance in a specific country will necessitate a structured response that should begin with an assessment of current rural planning arrangements, including the planning framework, institutional roles and responsibilities, skills base, and a needs assessment. As part of increasing awareness of the concerns and potential answers, nationals should take the lead in such an evaluation.

Recent county-level evidence from Kenya reinforces this position. Kyalo and Kising'u (2024), in a correlational study of 148 project implementation team members overseeing Kenya Rural Roads Authority projects in Kwale County, established that project planning practices had a positive and significant relationship with the performance of road construction projects, with project resource planning and project scope planning emerging as significant predictors. In a similar vein, Kabiti and Kikwatha (2022) examined KeRRA road construction projects in Meru County and reported that project planning practices significantly influenced project performance. These devolved-context findings lend empirical support to the present study's focus on planning as a determinant of county-funded road project implementation, while their concentration on national rural-roads agencies rather than county governments underscores the contextual gap this study addresses.

2.4.2 Project Team Management

According to the Project Management Institute (PMI, 2024), project team competence refers to the skills and capabilities required to accomplish project tasks within acceptable design constraints. Therefore, effective teams will implement projects successfully if team members have the necessary skills and abilities to perform project activities. The project team requires project management, conflict resolution, and collaboration skills and expertise (Lee & Yu, 2022). The project leadership should conduct team-building activities to ensure a cohesive and integrated project team.

McLees and Matthews (2024) agree with this viewpoint. They believe that a project leader must understand the components of team leadership and the critical talents of team members to build successful project teams and sustain essential collaboration. Because they rely on one another, project collaboration and leadership are inextricably linked (Ocharo & Kimutai, 2024). Among the challenges confronting project managers is the assembly of an effective project team, a process that is increasingly complicated by workforce diversity, information technology–related challenges, and the escalating complexity of contemporary projects (Ihuah et al., 2023).

By bringing together a diverse group of individuals to discuss, collaborate, and solve tactical challenges, effective teams provide opportunities for businesses to identify distinctive, creative, and efficient ways to undertake initiatives (Nyakundi, 2023). During team problem-solving efforts, leveraging people’s different abilities, prior experiences, and interests typically leads to more innovative solutions (McLees & Matthews, 2023). A strong leader is needed to guide project teams through the project life cycle, build credibility and influence among team members, and define vision and objectives (Tinoco et al., 2024).

According to Kavishe and Chileshe (2024), professional competencies are the axle around which performance revolves. Even well-designed organizational strategies and plans are doomed to fail if the team is under-motivated or the staff is under-trained (Ubani, Amade, Okorocha, Agwu, & Okogbuo, 2023). A motivated team may outperform a competent but unmotivated team (Pimchangthong & Boonjing, 2024). It is critical to understand the duties that must be performed, the criteria that must be met, and how projects are assessed to enhance project performance and execution (Radujkovi & Sjekavica, 2024).

The success of a project depends not only on the project manager but also on the entire team, including the team’s composition, professional competence, the level of responsibility among team members, the challenges the team faces, factors that account for the project’s success or failure, team members’ inclusion in project planning and

design, and project monitoring (Kamunya & Chege, 2021). Empirical evidence provided by Ssegawa and Ngowi (2021) suggests that a considerable number of project managers in Africa are appointed opportunistically, rather than through structured and management-based selection processes. In both the public and commercial sectors, the typical path to becoming a project manager is through technical knowledge (e.g., marketing, finance, education, economics, engineering, IT, construction). Eight out of ten project managers are expected to oversee projects while possessing only technical expertise (Ihuah et al., 2023).

According to Graham and Englund (2023), the technical portion of a project is generally the smallest and simplest part. The authors also note that technical achievement isn't always a prerequisite for project success; it's important but not sufficient. Benson and Lawler (2021) report that pressures arise from the need to generate new ideas in a complicated and unpredictable world. The storming stage is characterized by interpersonal concerns such as polarization and confrontations. Team members are prone to challenging one another at this point. In this stage, team members also question what they're doing and how they're doing it. For the project manager, this is the most difficult period to lead the team. Some teams are unable to achieve the high levels of performance required at this stage. It's critical to understand that this kind of dispute is common across all teams at this time. This information will assist a project manager in completing this stage effectively.

Moreover, at this stage, there are some talents that will aid in the formation of the squad. These include relationship building, participatory listening, and conflict resolution. At this time, the leader must be confident, upbeat, and aggressive, especially if the team members are questioning his or her leadership (Sims & Burke, 2021). According to Gido and Clements (2022), good teams are defined by trust, ethical conduct, effective communication, and unity among team members. These qualities help ensure the project's success.

Other research has shown that effective communication, agreement on objectives, building trusting relationships among team members, and resolving team issues effectively are critical to a project's success (Kerzner & Saladis, 2024). Inadequate communication, according to Kerzner (2022), is the greatest hindrance to creating and developing excellent teams, as it leads to low team spirit, low motivation, poor workflow and coordination, and poor project management. Honesty, respect, team initiative, excellent interpersonal skills, team member attitudes, cooperation, and good interpersonal interactions, according to Stevens and Campion (2020), are especially appealing and distinctive elements associated with effective team performance. Successful project performance is based on solid team performance.

Contemporary Kenyan evidence corroborates the centrality of the project team. Wanjau, Namusonge and Lango (2024), in a mixed-methods study of registered contractors delivering housing projects in the Nairobi metropolitan area, found that project team planning had a significant and positive influence on project performance, with team skills, team experience, the communication plan and team efficacy identified as vital, and the model explaining 51.3 per cent of the variation in performance. This finding aligns with the present study's identification of team management as the strongest predictor of implementation and extends the evidence base from building to road projects.

2.4.3 Project Monitoring and Evaluation

According to Naidoo's (2024) research, when the assessment and monitoring process is linked to major decision-making authority, it is treated with greater seriousness. The research also concludes that monitoring and evaluation units want to be seen as value-adds and to be able to explain their efforts; in this context, success factors strengthen M&E managers' credibility. The monitoring team requires significant assistance and reinforcement to carry out its mission with power and authority. In addition, the teams need frequent scope monitoring to detect changes, substantial human capacity for project scheduling, and cost-overrun monitoring (Ling et al., 2024).

The use of technology in monitoring and evaluation significantly enhances the monitoring and evaluation team's success and efforts, resulting in value contributed by the team. According to Georgieva & Allan (2021), some of the methods used to manage project work include managing stakeholders, monitoring processes, and collaboration among participants. A competent monitoring team has outstanding stakeholder representation, which is conclusive. Basic research, accounting and certification, status assessment, and effectiveness measurement are some of the monitoring and evaluation methodologies that project managers and monitoring teams might use (Stem et al., 2021).

An M&E team that works well together is a strength and a key factor in project management success (Tinoco et al., 2024). According to Pinto & Slevin (2021), project control procedures include monitoring and feedback. A team should be present at each implementation level to gather input on how the project is progressing relative to the original predictions. Feedback is also offered to the project's funders, sponsors, implementers, and beneficiaries, as part of the monitoring process (Jugdev, 2021). As a result, the input is utilized to make decisions on how to enhance the project's performance (Bartle, 2021).

Establishing adequate monitoring and feedback channels enables the project manager to anticipate issues, implement countermeasures, and ensure that no flaws go unnoticed (Bond-Barnard et al., 2024). Harold (2024) demonstrated that a comprehensive understanding of monitoring and evaluation equips project contractors and managers with the capacity to effectively assess infrastructure projects, ultimately resulting in enhanced project performance. The survey also discovered that road infrastructure project managers must understand how their initiatives fulfil the intended customer criteria.

Evidence from the roads sub-sector reinforces this link. Njeru and Kirui (2022), studying Kenya National Highways Authority road construction projects in Nairobi City County, established that monitoring and evaluation practices — particularly budget allocation, baseline surveys, performance reviews and capacity building — positively influenced

project performance, with timely disbursement of funds and realistic baseline scoping enabling on-time, on-budget and quality delivery. These findings support the present study's treatment of monitoring and evaluation as a driver of successful road project implementation.

2.4.4 Project Stakeholder Involvement

The practice of incorporating stakeholder inclusion into a project is known as project stakeholder participation (Eskerold et al., 2020). Stakeholders must be identified and categorized according to their interests and expectations at all stages of the project. Furthermore, Aapaoja and Haapasalo (2023) state that identifying, classifying, and managing stakeholders is critical to gathering and managing stakeholder needs. Errors in this phase can result in project failure.

According to Laplume, Sonpar, and Litz (2024), project managers must assess the groups and individuals who are likely to impact or be affected by the project's success. If the interests of certain stakeholders are not taken into account, the impacted group may directly or indirectly oppose the project's execution (Aduma & Kimutai, 2024). A project is made up of many groups with varying interests that change over time, each with its own tasks and responsibilities. Because stakeholders' importance in a project is seldom equal, project management must assess stakeholders' influence on the project, according to PMI (2023).

As the project advances, multiple stakeholders' interests may need to be monitored, prioritized, and addressed (Florichel et al., 2024). In their research on Mega Construction Projects, Botwe, Aigbavboa, and Thwale (2024) found that stakeholders must first be educated to adopt both stakeholder management and sustainable construction practices as approved by the construction sector. As a result, throughout project execution, project stakeholders must be taught their roles and duties.

According to Eskerod and Huemann (2023), a two-way flow of information between stakeholders is required to guarantee project success. Inclusivity fosters good communication and information flow while also improving project performance (Köhler et al., 2022). When there is sufficient engagement and consultation, human behaviour supports concern for projects or activities. Any project with minimal or no participation risks low or no sustainability, as well as inadequate execution and international recognition (Nanthagopan, Williams, & Page, 2024).

Stakeholder involvement considers the opinions of the local community, business partners, contractors, County and National government officials to ensure that road improvements are prioritized in accordance with the needs assessment (Roeder, 2022). Through an objective and well-informed process, the community must identify its most pressing needs and assess the extent to which road improvements can contribute to enhanced social and economic outcomes (Ocharo & Kimutai, 2024). As part of the planning process, road improvements should include grassroots ownership and community involvement. Involving the community not only lowers costs and enhances project ownership but also improves openness and accountability throughout the prioritization of road improvements (Teipelke, 2023).

The empirical evidence on stakeholder involvement, however, is not wholly consistent. Julien, Silas and Mutisya (2025), in a descriptive-correlational study of selected road projects in Machakos County, observed a positive relationship between stakeholder involvement and project performance ($\beta = 0.586$) that was, however, not statistically significant at the five per cent level ($p = 0.059$), leading them to conclude that stakeholder involvement did not significantly influence performance in that setting. This contrasts with the present study's findings and with earlier Kenyan studies reporting significant effects, illustrating the mixed and context-dependent nature of the evidence and reinforcing the need for further county-level investigation.

2.4.5 Project Management Practices, Government Regulation and Implementation of Projects

Musomba's (2021) research on monitoring and evaluating project performance and implementation in Malaysia's College of Computer Sciences and Information at Aljuf University found that project planning, implementation, and control processes are the tools that help the organization plan, implement, and control its project activities. The goal of the research was to identify ways to improve project performance through the planning, execution, and monitoring phases.

In his study of project planning efforts on successful project implementation, Ika (2021) found that project success was insensitive to the level of project planning efforts, but that there was a significant correlation between the use of monitoring and evaluation tools and project profile, a success criterion that served as an early indicator of project long-term impact. Infrastructural projects play a significant role in societies by addressing economic development demands and, more importantly, by improving residents' quality of life (Gitonga & Keiyoro, 2024). Because the government is the single biggest implementer of public infrastructure projects, it is critical to guarantee that these projects are completed and that the elements that have the greatest impact are recognized and taken into account throughout the project life cycle (Onyango, Bwisa, & Orwa, 2024).

Pernille, Martin, and Claudia (2024) studied stakeholder inclusiveness to enrich project management. This study was based on data from a longitudinal case training conducted between 2012 and 2014. The critical incident technique was applied through observing human behaviour during the occurrence. According to data on stakeholder inclusion, engaged stakeholders showed a significant increase in their participation in the organization's processes. In addition, the organization's branding approach helps project stakeholders take a greater interest in its success. Stakeholder inclusivity decreases the risk of surprise and disappointment.

Nyandika and Ngugi (2024) performed research on the impact of stakeholder engagement at the Kenya National Highways Authority on the execution of road projects. The descriptive research design was adopted in this study. Both qualitative and quantitative methodologies were employed in the research. Prequalified Contractors (NCA1 to 3), KeNHA Top Management (Job Group 7- 10), and prequalified consultants were the study's target audience. A stratified random sampling method was used to select 30% of the target population for the investigation. The research discovered that road project performance is heavily influenced by awareness, feasibility, conferences, and user participation seminars.

Studies examining the moderating role of the regulatory environment on the relationship between project management practices and implementation remain scarce, particularly in the devolved county context. Where such evidence exists, it is instructive. Wanjau, Namusonge and Lango (2023), studying housing projects in Kenya, established that the project regulatory framework significantly moderated the relationship between project scope planning and project performance, strengthening the association where the framework was robust. Similarly, Odhiambo, Cheruiyot and Winja (2022), in a study of building construction in Murang'a County, found that the regulatory framework - encompassing statutory approvals, enforced construction standards and compliance requirements - significantly influenced construction project performance. The limited available evidence suggests that supportive financing, aligned policy and enforced construction standards enhance the extent to which sound management practices translate into successful project delivery, whereas regulatory weaknesses blunt their effect. The present study contributes to this thin body of evidence by empirically testing government regulation as a moderator of the practice–implementation relationship in county-funded road projects.

Overall, the empirical literature reviewed above establishes that project planning, project team management, project monitoring and evaluation, and project stakeholder involvement are each associated with project performance across a range of contexts.

However, three limitations are evident. First, most of the reviewed studies were conducted in private-sector, donor-funded or national-government settings, with limited attention to county-funded road projects under devolution (Kyalo & Kising'u, 2024; Njeru & Kirui, 2022; Julien, Silas & Mutisya, 2025). Second, the practices have largely been examined in isolation rather than as an integrated set. Third, few studies have tested the moderating influence of the regulatory environment on the practice–performance relationship. These observations informed the gaps that the present study sought to address.

2.5 Critique of Existing Literature

In the majority of studies, the link between project planning and implementation has been the focus. Less attention has been given to the link between project management practices and project implementation. Hamilton and Gibson (2022) demonstrated the significance of project planning and its impact on project success. Higher levels of project planning efforts may result in significant cost and schedule savings, according to their research. Success in every effort requires meticulous planning and preparation, while failure is practically certain without them. Anyone who has ever completed a difficult assignment understands the value of meticulous preparation (Aimable, 2023).

Good planning saves time and money by conserving resources, preventing wasted effort, preventing minor issues from becoming major issues, and laying a firm basis for the remaining management activities (Nanthagopan, Williams, & Page, 2024). According to Gwadoya (2022), a thorough understanding of project monitoring and evaluation techniques is necessary. This demonstrates that previous project management research lacked a thorough grasp of project teams' assessment and monitoring procedures (Assudani & Kloppenborg, 2021).

Although the studies primarily addressed important success criteria, including monitoring and evaluation, only a few focused on it. Several additional studies (Naidoo, 2022; Mwala, 2022; Marangu, 2022) focused on monitoring and evaluation, but none examined the

specific relationship between monitoring and evaluation and successful project management techniques and execution.

2.6 Research Gaps

Studies of project management practices and project performance are multidimensional, multilevel, and context-dependent. Road construction projects are infamous for falling behind schedule, being over budget, and being beset by scope creep, as well as for poor communication procedures and a lack of controls over scope change management. This is particularly true in nonprofit organizations (Guerin, 2022). To meet the project's goals and results, timely completion of the construction project is critical (Zhang & Fan, 2023). A project that is finished on schedule demonstrates overall project planning, management, and implementation efficiency, as well as excellent progress monitoring (Aduma & Kimutai, 2024).

There are a variety of reasons for a project's failure or failing to reach its full potential. It is a major and frequent issue that many projects confront, and it becomes prevalent at some point throughout the project's completion. Such issues are mostly caused by a lack of effective planning (Radujković & Sjekavica, 2024). Without a plan, a complicated project, such as a road project, is likely to fail. Without appropriate preparation, it is impossible to comprehend what it will take to finish a project effectively. Planning is used to get a project back on course if it has strayed from the original plan, as well as to regulate it and create a baseline against which to measure progress (Jun, Qiuzhen, & Qingguo, 2022).

Owing to the comparatively few initiatives undertaken in Africa relative to the rest of the world, a comprehensive assessment of their performance remains difficult (Vander, 2021). Similarly, there is little research on the elements that impact effective project completion in Africa and Kenya. Indeed, without a clear understanding of the impact of the planning process and other determinants of project performance, project implementers will be

unable to demonstrate the benefits of their initiatives or assess whether such initiatives contribute to improvements in public service delivery. As a result, the purpose of this study was to look at the impact of project planning on the success of road construction projects in Uasin Gishu County.

Arising from the foregoing, this study identified three specific gaps that it sought to address. First, a contextual gap exists, in that there is limited empirical evidence on the implementation of county-funded road projects in Uasin Gishu County under the devolved system of government, most prior studies having focused on national, donor-funded or private-sector projects. Second, a conceptual gap exists, in that no known study has integrated project planning, project team management, project monitoring and evaluation and project stakeholder involvement with government regulation as a moderating variable within a single model. Third, a methodological gap exists, in that moderated, interaction-based regression has rarely been applied to the study of county-funded road projects. It is these contextual, conceptual and methodological gaps that the present study sought to fill.

2.7 Summary of Literature

This chapter has reviewed the theoretical and empirical literature relevant to the influence of project management practices on the implementation of county-funded road projects. The review was organized around four practices — project planning, project team management, project monitoring and evaluation, and project stakeholder involvement — together with government regulation as a moderating variable, and it was anchored in five complementary theories. The Resource-Based View (Wernerfelt, 1984) frames project planning and project team management as valuable, rare and difficult-to-imitate organizational resources that, when properly deployed, translate into superior project performance. Goal-Setting Theory (Locke, 1979) underpins monitoring and evaluation by explaining how clearly defined objectives and continuous tracking of progress sustain effort and direct behaviour toward desired outcomes. Institutional Theory (Scott, 2021; North, 1990; Williamson, 1985) illuminates the regulatory environment, emphasizing the

norms, rules and sanctions with which organizations must comply. Stakeholder Theory (Freeman, 1984) supports the treatment of stakeholder involvement by holding that identifying, engaging and balancing the interests of affected parties enhances legitimacy, cooperation and project success, while Contingency Theory (Lawrence & Lorsch, 1967) provides the logic for moderation, positing that the effectiveness of a management practice is conditional upon the surrounding context — in this case, the strength of the regulatory framework.

The empirical literature reviewed lends broad support to these theoretical positions. On project planning, studies consistently associate sound planning — needs assessment, scope definition, budgeting, scheduling and risk planning — with timely, on-budget and quality delivery, while identifying inadequate planning as a recurrent cause of cost overruns and delay (Mwanza, Namusonge & Makokha, 2020). Recent devolved-context evidence reinforces this link, with Kyalo and Kising'u (2024) and Kabiti and Kikwatha (2022) reporting significant positive relationships between planning practices and the performance of rural-roads projects in Kwale and Meru Counties respectively. On project team management, the literature stresses that skilled, experienced and well-coordinated teams are central to successful delivery (Kavishe & Chileshe, 2024), a position corroborated by Wanjau, Namusonge and Lango (2024), whose study of housing projects found that team planning explained a substantial share of the variation in performance. On monitoring and evaluation, the reviewed studies link regular progress reporting, baseline surveys, supervision and rapid assessment to improved outcomes (Naidoo, 2024; Njeru & Kirui, 2022), underscoring the role of disciplined tracking in detecting and correcting deviations early.

The evidence on stakeholder involvement, while generally positive, is somewhat more mixed. A substantial body of work emphasizes community engagement, information-sharing and joint problem-solving as drivers of public-project success (Eskerod & Huemann, 2023; Nyandika & Ngugi, 2024), yet other studies, such as Julien, Silas and Mutisya (2025) in Machakos County, report positive but statistically non-significant

effects, indicating that the strength of the relationship is context-dependent. With respect to the moderating role of government regulation, the literature remains comparatively thin. The limited available evidence suggests that supportive financing, aligned policy and enforced construction standards strengthen the extent to which good management practices translate into delivery, whereas regulatory weaknesses blunt their effect (Wanjau, Namusonge & Lango, 2023; Odhiambo, Cheruiyot & Winja, 2022).

Taken together, the reviewed literature establishes that each of the four practices is associated with project performance across a range of settings, and that the regulatory environment plausibly conditions these relationships. However, three limitations recur. First, most existing studies were conducted in private-sector, donor-funded or national-government contexts, with limited attention to county-funded road projects delivered under devolution. Second, the practices have largely been examined in isolation rather than as an integrated set operating simultaneously. Third, few studies have empirically tested the moderating influence of government regulation on the practice–performance relationship, particularly at the county level. These observations point to contextual, conceptual and methodological gaps that the present study was designed to address by examining the four practices jointly, within a single devolved-county setting, and by testing government regulation as a moderator. The chapter that follows sets out the research methodology adopted to pursue these objectives.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The techniques and parameters used in the research are discussed in this chapter. The study design, target demographic, sampling methodology, sample size, data collecting tools and process, data analysis, and presentation are at the core of this chapter.

3.2 Research Philosophy

A research philosophy is a set of beliefs about how knowledge concerning a phenomenon should be gathered, interpreted and applied. This study was guided by the positivist philosophy. Positivism holds that only factual knowledge obtained through observation and measurement is reliable, and it is characterised by the specification of theory prior to investigation and the statistical testing of hypotheses derived from that theory (Cooper & Schindler, 2018). The philosophy was appropriate because the study sought to establish, in objective and measurable terms, the relationships between project management practices and the implementation of county-funded road projects, and to test formally stated hypotheses using quantitative data. Consistent with the positivist emphasis on validity and reliability as the central quality criteria (Mohajan, 2018), the study measured its variables through structured instruments and analysed them using descriptive and inferential statistics, including moderated regression, thereby remaining independent of the subjects under study.

Interpretivism, by contrast, holds that reality is socially constructed and that knowledge is best obtained by exploring the subjective meanings, experiences and interpretations that individuals attach to a phenomenon, typically through qualitative methods (Mohajan, 2018). It was not adopted because the study's objectives were not concerned with uncovering personal meanings or lived experiences, but with quantifying relationships

between clearly defined variables and generalizing the findings across the target population. These aims imply interpretive, small-sample and context-bound approach could not adequately serve.

Pragmatism maintains that the research problem, rather than a fixed philosophical position, should dictate the choice of methods, and it often endorses mixed-methods designs that combine quantitative and qualitative evidence (Cooper & Schindler, 2018). It was considered but rejected because the research questions and hypotheses were amenable to measurement and statistical testing alone; a single, well-structured quantitative approach was sufficient to address them, and introducing qualitative components would have added complexity without strengthening the answers sought. Positivism therefore remained the most coherent and appropriate philosophical foundation for the study.

3.3 Research Design

A research design is the overall plan that guides the collection, measurement and analysis of data in a manner that allows the research questions to be answered. This study adopted a descriptive survey design, complemented by a correlational element, to establish how project management practices influence the implementation of county-funded road projects in Uasin Gishu County. The design was appropriate because it enabled the researcher to gather, summarize, present and evaluate data from a large sample in their natural setting, and to describe the characteristics of the variables as they exist (Ordho, 2018). Its correlational dimension further permitted the study to quantify the strength and direction of the relationships between the four project management practices and project implementation, and to test the moderating effect of government regulation, using quantitative data analysed through descriptive and inferential statistics.

An experimental design was considered but not adopted. Experimental research requires the deliberate manipulation of an independent variable and the use of control and

treatment groups under carefully controlled conditions in order to establish cause-and-effect relationships (Whisman & McClelland, 2018). Such conditions were neither feasible nor appropriate for this study, as the project management practices under investigation occur naturally within county road projects and could not be manipulated or randomly assigned. The study therefore sought to observe and measure existing relationships rather than to engineer them experimentally.

An exploratory design was likewise rejected. Exploratory research is best suited to problems that are poorly understood, where theory is undeveloped and the aim is to gain preliminary insights or generate hypotheses (Ordho, 2018). This did not fit the present study, in which the variables were clearly defined, grounded in established theory, and drawn from a substantial body of prior literature. The objective was not to explore an unfamiliar phenomenon but to test formally stated hypotheses and to describe and measure the relationships among known variables. The descriptive and correlational survey design thus remained the most suitable choice for meeting the study's objectives.

3.4 Target Population

Target Population refers to the entire group of individuals or entities that a researcher is interested in studying and from which to draw conclusions (Mugenda & Mugenda, 2019). The study was conducted in Uasin Gishu County. According to the Uasin Gishu County report (2023), there are a total of 250 employees at management levels within the Ministry of Roads and Public Works. The unit of analysis was therefore County-funded Road Projects in Uasin Gishu County, while the unit of observation was 250 management employees.

Table 3.1: Target Population

Stratum (management cadre)	Target Population
Roads engineers	60
Project managers / coordinators	45
Supervisors / inspectorate	55
Contractors	40
Consultants	25
Finance Officers	25
TOTAL	250

3.5 Sampling Frame

The sampling strategy outlines the collection procedures and the sample size for the research. According to Kothari (2018), a sample frame is a list of all population units from which the sample is drawn. When the research population is heterogeneous, meaning it can be divided into strata or groups to obtain a representative sample, the stratified random sampling technique is used. According to Mugenda & Mugenda (2019), any sample size between 10% and 30% is a good representation of the target population. The research selected 153 people from a target sample of 250 employees. The majority of this group consists of employees who work on road construction in Uasin-Gishu County.

3.6 Sample Size and Sampling Technique

3.6.1 Sample Size

To establish the representativeness of the sample for generalization, sampling methodologies and sample size are critical (Kombo & Tromp, 2018). The respondents were selected using a simple random sample and a stratified sampling strategy to ensure that all situations were properly represented. The research employed Taro Yamane's (1967) sample size calculation, assuming a 5% error term.

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

$$n = \frac{250}{1 + 250(0.05)^2}$$

$$n = \frac{250}{1 + 0.625}$$

$$n = 153$$

The sample size is 153 respondents, representing 61.2% of the target population.

Table 3.2: Sample Size

Stratum (management cadre)	Target Population	Sample (n)
Roads engineers	60	37
Project managers / coordinators	45	28
Supervisors / inspectorate	55	34
Contractors	40	24
Consultants	25	15
Finance Officers	25	15
TOTAL	250	153

3.6.2 Sampling Technique

According to Sekaran and Bougie (2018), sampling may yield better overall accuracy than surveying the complete population. This study selected its sample using stratified random sampling. Stratified sampling involves identifying specific characteristics that a study aims to represent evenly across the sample, thereby enhancing its representativeness (Greener, 2018), and it enables a researcher to obtain a sample that best reflects the total population under study (Ruirie, 2018). The Government of Uasin Gishu County is organised into several departments, and these departments formed the strata for the study. Simple random sampling was then applied within each stratum to select the individual

respondents, ensuring that every element had an equal probability of selection and that bias in the choice of participants was avoided. This combination was adopted because it guaranteed proportionate representation of all relevant departments while preserving the randomness required for the results to be generalized to the wider population.

Purposive sampling, which is a non-probability technique selects respondents on the basis of the researcher's judgement about who is most informative, was not adopted. Although efficient, it introduces selection bias and does not give every member of the population an equal chance of inclusion, which would have undermined the study's aim of drawing statistically generalizable conclusions about county-funded road projects (Sekaran and Bougie, 2018). It was therefore unsuitable for a survey grounded in the positivist tradition.

Cluster sampling was also rejected because this technique divides a population into naturally occurring clusters and samples entire clusters, and it is most useful where a population is large, widely dispersed and lacks a reliable sampling frame (Ruirie, 2018). In this study, however, the population was clearly bounded within the county's departments and a sampling frame was available, so sampling whole clusters would have risked uneven representation of the departments and higher sampling error. Stratified random sampling, by ensuring deliberate and proportionate coverage of every department, offered greater representativeness and precision, and remained the most appropriate technique for meeting the study's objectives.

3.7 Data Collection Instruments

Data was collected via questionnaires. It was created from pieces designed to meet the study's goals. The questionnaire included both closed- and open-ended questions, making it appropriate for qualitative research. Closed-ended questions comprised a structured sequence of predetermined items that respondents were required to answer in a specified order by selecting from a predefined set of response options. Respondents were not restricted by open-ended questions. There were four parts to the questionnaire. The first

portion asked the respondents to provide background information about themselves and their departments, while the next three sections detailed the study's variables.

3.8 Data Collection Procedure

The information was gathered using questionnaires that included both quantitative and qualitative data. Because semi-structured questions are simple to assess, they were included in the questionnaire. Using the give-and-take approach, the surveys were self-administered. Jomo Kenyatta University of Agriculture and Technology provided an introduction letter and a research permission from the National Council of Science and Technology. In some departments, the questionnaires were delivered in person, while in others, trained research assistants were employed under supervision. The 153 surveys, together with a forwarding letter and an introduction letter from the University, were sent to the respondents. Personal follow-up was conducted to ensure respondents completed the surveys fully. Later, using research assistants, the questions were selected from the respondents.

3.9 Pilot Study

According to Tayie (2018), pretesting measuring devices is generally done with samples of 25-50. For this study, a pilot study was conducted with 20% of the population, resulting in a total of 30 employees from Uasin Gishu County.

3.9.1 Validity of Data Collection Instrument

Borg and Gall (2018) define validity as the degree to which a test measures what it claims to assess. According to Borg and Gall (2018), expert judgment improves the content validity of an instrument. Construct validity concerns how survey questions are written so they are clear and unambiguous. As a result, the researcher enlisted the expertise of the designated supervisor, a research specialist, who assisted in improving the instrument's content validity.

Validity, according to Kothari (2018), is the extent to which an instrument measures what it claims to measure. As a result, the phrase refers to an instrument's ability to ask the right questions. Piloting was used to assess the content validity of the research instrument for this study, in which respondents' responses were compared with the research goals. The information chosen and included in the questionnaire must be related to the examined variable for a research instrument to be regarded as legitimate. The researcher conducted a pilot test with participants selected at random but not included in the final study. The content validity of the instrument was evaluated with the help of a research specialist and the research supervisor. The questionnaire's questions addressing the study aims were independently evaluated for validity by the research expert.

3.9.2 Reliability of Data Collection Instrument

The repeatability of a study's outcomes is what reliability is all about. For this investigation, a construct composite reliability coefficient (Cronbach's alpha) of 0.7 or above for all constructs would be regarded as appropriate. A reliability coefficient of 0.7 or higher is considered satisfactory (Rousson, Gasser, and Seifer, 2018). Cronbach's Alpha was utilized to assess the study instrument's dependability. Nunnally (2018) recommends a Cronbach Alpha value of at least 0.7.

The reliability coefficient was computed as:

$$\alpha = \frac{k}{k-1} [1 - \sum(S^2) / \sum S^2 Sum]$$

Where:

α = Cronbach's Alpha k = Number of responses

$\sum S^2$ = Variance of individual items summed up

$$\sum S^2 \text{ Sum} = \text{Variance of summed scores}$$

3.10 Data Analysis and Presentation

The information was gathered and organized to facilitate manipulation and analysis. With the help of the Statistical Package of Social Sciences version 21, the data were modified, tagged, and categorized (SPSS). A descriptive statistics approach was used to summarize the data, allowing the research to explain the distribution using index values. The data was presented using frequency distributions and percentages. To determine the influence of the independent factors on the dependent variable, data was evaluated using multiple linear regression models. At the Uasin-Gishu County Government, a regression model was used to assess the impact of project management techniques and the execution of county government-funded road improvements. The following is the general form of multiple regression:

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

Where;

Y = is the dependent variable which is the implementation of road projects in Uasin Gishu County

β_0 is the regression coefficient/constant/Y-intercept,

$\beta_1, \beta_2, \beta_3$ and β_4 are the regression coefficients to be estimated,

X_1 is the project planning

X_2 is the project team management

X_3 is the project monitoring and evaluation

X_4 is the project stakeholder involvement

ε is an error term generally distributed about a mean of 0 and for purpose of computation, the α is assumed to be 0.

3.10.1 Test of the Moderating Effect

To test the moderating effect of government regulation, the study adopted a hierarchical regression approach in which the variables were entered in successive steps, consistent with the moderation procedures advanced by Baron and Kenny (2018), Whisman and McClelland (2018) and Hayes (2018). In the first step, the composite project management practices variable was regressed on the implementation of county-funded road projects. In the second step, the moderator (government regulation) and the interaction term (project management practices multiplied by government regulation) were added to the model.

The moderated model was specified as: $Y = \beta_0 + \beta_1X + \beta_2M + \beta_3(X \times M) + \varepsilon$, where X denotes the composite project management practices, M denotes government regulation, $X \times M$ denotes the interaction term, and ε is the error term. Moderation was assessed through the change in the coefficient of determination (ΔR^2) and the significance of the interaction term. A significant interaction term accompanied by a significant increase in R^2 indicates a moderating effect. Where both the interaction term and the direct effects remain significant, the moderation is partial; where only the interaction term is significant, the moderation is full; and where the interaction term is not significant, no moderation is present.

3.11 Preliminary Tests

The underlying assumptions in linear regression include no autocorrelation, little or no multicollinearity, homoscedasticity, and a linear relationship between the independent and dependent variables. In cases of violation of the regression assumptions, the confidence intervals, significance levels, and coefficient estimates derived from the regression model may be misleading, biased, or inefficient. Moreover, when one or more regression assumptions are violated, the inferences derived from the regression model cannot be generalized to other data.

3.11.1 Linearity Test

Linear regression is a mathematical method used to investigate the existence of a relationship between a metric response and several independent variables (Kothari & Garg, 2019). Therefore, the linearity test aims to determine whether the relationship between the independent variables and the dependent variable is linear or not. The linearity test is a preliminary step in correlation and linear regression analysis (Britzger, 2018). If the value of the significance deviation from linearity > 0.05 , then the relationships between the predictor variables are considered linearly dependent. However, if the significance deviation from linearity < 0.05 , then the relationship between the predictor and the response variable is considered nonlinear. Regression modelling was used to assess whether there is a linear or curvilinear relationship between the two variables (independent and dependent).

3.11.2 Heteroskedasticity Test

Violations of homoscedasticity tend to inhibit the critical evaluation of forecast errors' standard deviations, often leading to confidence intervals that are extremely narrow or extremely wide. Heteroscedasticity in this study was assessed using the Breusch-Pagan test. The null hypothesis for this test was that the error variances were equal and were a

multiple function of variables. Homoscedasticity normally occurs when the p-value is greater than the significance level (0.05).

3.11.3 Autocorrelation Test

The Durbin-Watson statistic was used to test autocorrelation. The Durbin-Watson statistic is a statistical test used to determine the level of autocorrelation in the residuals of a given regression analysis. The general principle of the Durbin–Watson statistic is that values between 1.5 and 2.5 indicate no autocorrelation in a dataset.

3.11.4 Multicollinearity Test

Multicollinearity is used to determine the probability that any two or more independent variables in a particular multivariate regression model are highly or significantly correlated. This would mean that one variable can be predicted from the other. When the correlations among the independent variables are quite strong, the standard errors of the coefficients tend to increase, reducing the precision of the estimates and weakening the statistical power of the regression model. The study used the Variance Inflation Factor (VIF) to assess the degree of collinearity among the variables. The general principle is that a VIF greater than ten (10) indicates multicollinearity.

3.11.5 Test of Hypothesis

The technique used in the research to examine the four hypotheses stated in Chapter One is described in this section. The response variable was the execution of county-funded road projects in Uasin Gishu County, Kenya, whereas the explanatory factors included project planning, project team competence, project monitoring and evaluation, and project stakeholder participation. Multiple regression analysis is used to investigate the relationship between a single response (dependent) variable and multiple predictor variables (Hair et al., 2018).

Table 3.3: Hypotheses Test

Hypotheses	Hypothesis Test	Decision Rule
Hypothesis 1: X_1	$\beta_1 = 0$	Reject H_{01} if P- value ≤ 0.05
H_{01} : Project planning has no significant influence on implementation of county-funded road projects in Uasin Gishu County	$\beta_1 \neq 0$	Fail to reject H_{01} if P - value > 0.05
Hypothesis 2: X_2	$\beta_1 = 0$	Reject H_{01} if P- value ≤ 0.05
Project team management has no significant influence on implementation of county-funded road projects in Uasin Gishu County	$\beta_1 \neq 0$	Fail to reject H_{01} if P - value > 0.05
Hypothesis 3: X_3	$\beta_1 = 0$	Reject H_{01} if P- value ≤ 0.05
Project monitoring and evaluation has no significant influence on implementation of county-funded road projects in Uasin Gishu County	$\beta_1 \neq 0$	Fail to reject H_{01} if P - value > 0.05
Hypothesis 4: X_4	$\beta_1 = 0$	Reject H_{01} if P- value ≤ 0.05
Project stakeholder involvement has no significant influence on implementation of county-funded road projects in Uasin Gishu County	$\beta_1 \neq 0$	Fail to reject H_{01} if P - value > 0.05

Source: Researcher, 2022

3.11.6 Operationalization of Variables

Due to identification problems, Hair et al. (2018) recommended that each construct be assessed by at least 3 indicators. In this research, at least three indicators were used to

operationalize both independent and dependent variables. The measurement of variables is shown in Table 3.4.

Table 3. 1: Operationalisation of Variables'

Variable	Nature	Indicator	Measure
Project Implementation	Dependent	• Delivery within budget • Completion on schedule • Achievement of set objectives (scope) • Attainment of set quality standards	Interval scale 1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree
Project Planning	Independent	• Needs assessment and scope definition • Risk identification and mitigation planning • Budgeting and resource allocation • Work scheduling and sequencing	Ordinal scale 1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree
Project Team Management	Independent	• Technical skills and professional competence • Relevant experience and expertise • Continuous training and capacity development • Team coordination and information-sharing	Ordinal scale 1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree
Project Monitoring and Evaluation	Independent	• Progress tracking and performance reporting • Supervision and quality control • Goal achievement and deviation monitoring • Rapid assessment and corrective feedback	Ordinal scale 1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree
Project Stakeholder Involvement	Independent	• Stakeholder identification and needs assessment • Stakeholder analysis and prioritisation • Stakeholder engagement and consultation • Grievance handling and joint problem-solving	Ordinal scale 1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

The chapter entails data analysis, presentation, and interpretation of the findings, along with a discussion of the objective of this study. The general objective of this study was to examine the influence of project management practices in implementing county-funded road projects in Uasin Gishu County in Kenya. Specifically, the study sought to establish the relationship between project planning, project team management, project monitoring and evaluation, and project stakeholder involvement and the implementation of county-funded road projects in Uasin Gishu County. The study also sought to determine the moderating effect of government regulation on the implementation of county-funded road projects in Uasin Gishu County.

The chapter presents detailed results on response rate, demographic information, descriptive statistics, and inferential statistics covering diagnostic tests, correlation analysis, univariate regression analysis, and a moderating effect analysis (hierarchical regression model). The results are presented in tables and figures.

4.2 Response Rate

The sample size for the study was 153 respondents, comprising employees who work on road construction in Uasin-Gishu County. The researcher distributed 153 questionnaires. Of the 153 questionnaires distributed, 146 were completed and returned to the researcher, yielding a response rate of 95.4%. This response rate was within acceptable limits for further analysis and reporting, according to Sekaran and Bougie's (2019) criteria. They suggest that a response rate of 50% or above is adequate, 60% or above is good, and 70% or above is excellent for analysis. Therefore, the 95.4% response rate is excellent and provides a solid foundation for further analysis and reporting.

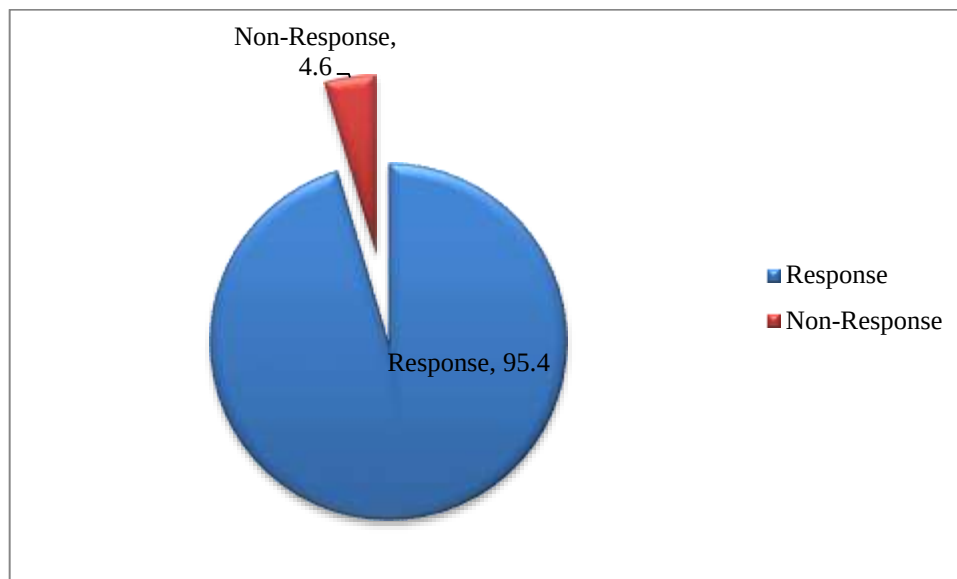


Figure 4.1: Response Rate

4.3 Pilot Study Results

MCneill (2019) defines pilot testing as a trial or run done in preparation for a major study. A pilot study was conducted to identify flaws, limitations, or other weaknesses in the data collection instrument and to make the necessary revisions prior to the study's implementation. For this study, a pilot study was conducted with 20% of the population, resulting in a total of 30 employees from Uasin Gishu County. The 30 employees used in this pilot testing were not used during the data collection process later in study. The main objective of the pilot test was to test the tools for data collection in terms of reliability and validity.

4.3.1 Reliability Test Results

Mugenda and Mugenda (2019) stated that reliability is the degree of consistency of the findings across multiple trials. Silverman (2019) indicated some ways to enhance reliability, including: prior testing of the questions; using responses with fixed-choice options; and systematic collection, transcription, and reporting of field data. Reliability is

important in research because it tests whether the study fulfils its intended aims and hypotheses, and also ensures that the results are linked to the study and not influenced by extraneous variables. High reliability means that a measure yields similar results under similar conditions (Kothari, 2018). Cronbach's alpha was used to assess the data's reliability. Cronbach's alpha, whose range is between 0 and 1, measures internal consistency and the extent of the relationship between the set of items in a group. It also quantifies scale reliability (Kultar, 2018). If the alpha coefficient is high, then there is high reliability among the items under study. An acceptable value of Cronbach's alpha is 0.7 or higher; values below 0.7 are questionable (Singpurwalla, 2018). The reliability test results are shown in Table 4.1

From the findings, the construct project planning had an average Cronbach's reliability alpha of 0.834, project team management had a Cronbach's reliability alpha of 0.830, project monitoring and evaluation had an average Cronbach's reliability alpha of 0.763, project stakeholder involvement had a Cronbach's reliability alpha of 0.827, and Project implementation had an average Cronbach's reliability alpha of 0.846. This shows that the study questionnaire met the reliability criteria ($\alpha > 0.7$).

Table 4.1: Reliability Test Results

Variable	Cronbach's Alpha	Interpretation
project planning	0.834	Reliable
project team management	0.830	Reliable
project monitoring and evaluation	0.763	Reliable
project stakeholder involvement	0.827	Reliable
Project implementation	0.846	Reliable

4.3.2 Validity Test Results

Validity of a research tool is the extent to which it measures what it is supposed to quantify. Content validity addresses how well the items developed to operationalize a construct provide an adequate and representative sample of all the items that might

measure the construct of interest. In this study, content validity was achieved through expert judgements of the research supervisors. The research supervisors indicated whether the items were relevant. Their responses were analysed to determine the percentage representation using the content validity index. The Amin (2018) content validity formula was used. The formula is: Content Validity Index = (No. of judges declaring item valid) / (Total No. of items).

This study used experts in the field of study, namely lecturers and project supervisors, to assess the face validity of the study. In addition, construct validity was ensured through the operationalization of terms to ensure that the study variables reflect the theoretical assumptions underlying the study's conceptual framework.

To test for content validity, the study conducted a factor analysis, which helped extract items with eigenvalues greater than 1. Any item that had less than 1 eigenvalue was excluded. The study first tested the sampling adequacy using Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity. This test shows the proportion of variance in the variables that can be attributed to underlying factors. The KMO measure ranges from 0 to 1, with values closer to 1 indicating a better fit, and a threshold of 0.5. The Bartlett's test of sphericity is used in testing the hypothesis that the correlation matrix is an identity matrix. This simply indicates that there are sufficient relationships among variables (Wilson, 2019). These results are presented in Table 4.2. Since the Bartlett's test significance was less than 0.05, it indicates an acceptable degree of sampling adequacy (sample is factorable). Also, the KMO statistic for all variables was greater than 0.5 (0.806). This implies that the data was suitable for regression analysis.

Table 4.2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.806
	Approx. Chi-Square	2158.087
Bartlett's Test of Sphericity	df	30
	Sig.	.000

4.4 Demographic Information Analysis

This section is about general information about the respondents. The section sought information on respondents' levels of education and the length of time they had worked with the county government. The findings are presented and discussed in sub-sections below.

4.4.1 Respondents' Level of Education

The level of education may offer an insight into the kind of expertise the management has in implementing projects. The study, therefore, sought to determine the respondents' level of education. The results were as depicted in Figure 4.2. It was observed that 56% of the respondents had undergraduate degrees as their highest level of education, 25% had postgraduate degrees, and the remaining 19% had college certificates. It was observed that all respondents had high educational qualifications and therefore had the necessary expertise for the positions they held. This agrees with Gruzina, Irina and Wadim (2021), who posit that higher levels of education and skills argue for improved productivity that attracts better economic returns.

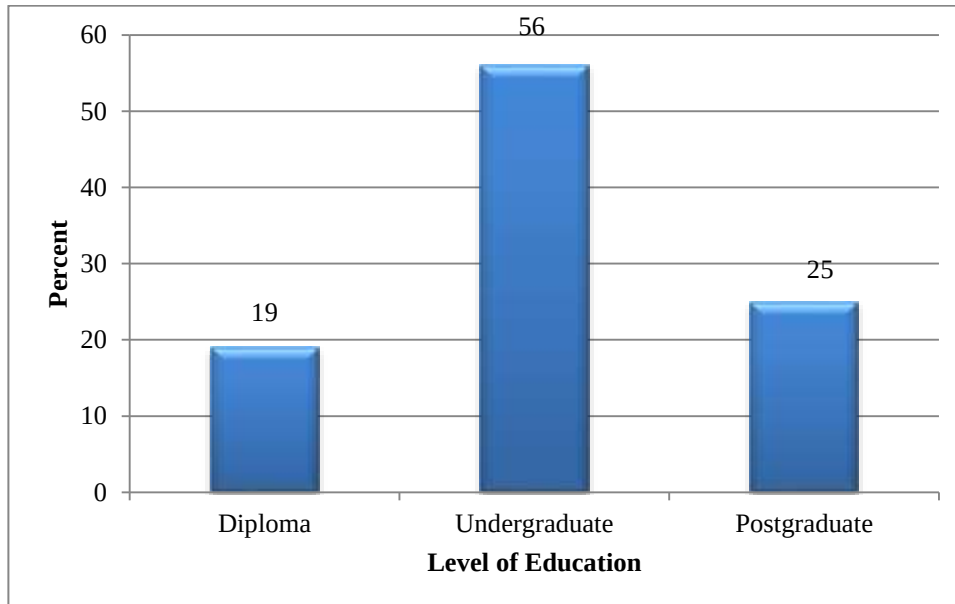


Figure 4.1: Respondents Level of Education

4.4.3 Respondents Work Experience

The study sought to determine how long the selected respondents had worked in the county government. Figure 4.3 presents the findings obtained. It was observed that 39% of the respondents had between 4 and 7 years of experience, 27% indicated between 8 and 10 years, 18% had 1-3 years' experience, while 16% had less than 10 years of experience. These findings show that the selected respondents had diverse years of experience in the county government. They had served for quite some time and had the necessary experience to provide the required information. According to Northouse (2022), career experiences significantly impact a manager's characteristics and competencies.

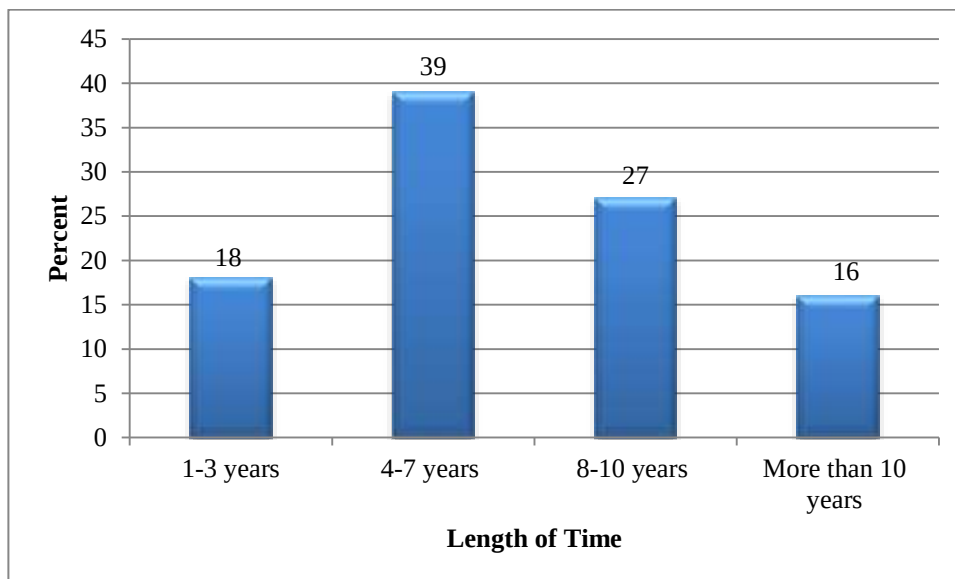


Figure 4.3: Respondents Work Experience

4.5 Descriptive Analysis

The purpose of descriptive analysis is to provide background for the study before conducting the analysis. In this section, the study presents findings from Likert-scale questions in which respondents were asked to indicate their level of agreement with various statements on the influence of project management practices in implementing county-funded road projects in Uasin Gishu County, Kenya, and the moderating effect of government regulation. They used a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The means and standard deviations were used to interpret the findings, with a mean of 1-1.4 indicating strongly disagree, 1.5-2.4 disagree, 2.5-3.4 neutral, 3.5-4.4 agree, and 4.5-5 strongly agree. Frequencies and percentages were also used to describe the findings obtained.

4.5.1 Project Planning and Implementation of County-Funded Road Projects

The first objective of the study was to establish the relationship between project planning and the implementation of county-funded road projects in Uasin Gishu County. This

section presents descriptive findings on the relationship between project planning and the implementation of county-funded road projects in Uasin Gishu County. In Likert-scale questions, respondents were asked to indicate how strongly they agree or disagree with the statement by ranking their response on a scale of 1-5. Table 4.3 summarizes the findings.

The respondents agreed that the project plan defines the beneficiaries clearly and indicates the influence of every stakeholder in project implementation (scope) ($M= 3.992$, $SD= 0.375$). In addition, the respondents agreed that road projects completed in Uasin Gishu County are implemented by personnel with the capacity to design, supervise, monitor & evaluate road projects without professional negligence ($M= 3.992$, $SD= 0.375$). Further, the respondents agreed that the project plan shows how risks will be addressed if they occur ($M= 3.899$, $SD= 0.377$). The respondents agreed that conducting a needs assessment is important for ensuring project goals are achieved ($M= 3.873$, $SD= 0.362$). These findings are supported by the study of Aarseth et al., (2024) who established that the goal of project planning is to create a detailed guideline for the project that informs the project team about the work packages that must be completed and when they must be completed, as well as to keep track of the project's overall progress and to establish a record of the project for future use (Carvalho & Rabechini Junior, 2023). Project planning ensures that all project stakeholders have a thorough understanding of all activities and components, as well as the project's schedule, quality, and cost restrictions (Zailani, Ariffin, Iranmanesh, Moeinzadeh, & Iranmanesh, 2024).

From the results, the respondents agreed that active stakeholder planning, considering communication channels, helps build and manage stakeholder relationships ($M= 3.866$, $SD= 0.338$). In addition, the respondents agreed that the project budget should provide a clear and adequate provision for various project activities ($M= 3.787$, $SD= 0.345$). The respondents also agreed that well-prepared work schedules have ensured effective project implementation ($M= 3.748$, $SD= 0.361$). The results align with those of Wideman (2024), who found that the project planning phase is generally the most difficult for a project

manager, as they must make accurate estimates of the number of people, resources, and equipment required to complete the project. They may also need to schedule their communications and procurement efforts, as well as hire third-party vendors.

Table 4.3: Descriptive Statistics for Project Planning

Statements	Mean	Std. Dev.
The project plan defines the beneficiaries clearly and indicates the influence of every stakeholder in project implementation (scope).	3.992	0.375
Road projects completed in Uasin Gishu County are implemented with personnel that has the capacity to design, supervise, monitor & evaluate road projects without professional negligence	3.958	0.346
The project plan shows how the risks will be dealt with if they occur	3.899	0.377
Carrying out a needs assessment is important in ensuring project goals are achieved	3.873	0.362
Active planning for stakeholders through consideration of communication channels help to build and control stakeholder relationships	3.866	0.338
The project budget should provide a clear and adequate provision for various project activities	3.787	0.345
Preparing work schedule well has ensure effective project implementation	3.748	0.361
Aggregate Score	3.847	0.356

4.5.2 Project Team Management and Implementation of Road Projects

The second objective of the study was to assess the relationship between project team management and the implementation of county-funded road projects in Uasin Gishu County. This section, therefore, presents descriptive findings on the relationship between project team management and the implementation of county-funded road projects in Uasin Gishu County. In Likert-scale questions, respondents were asked to indicate how strongly they agree or disagree with the statement by ranking their response on a scale of 1-5. Table 4.4 summarises the findings.

The respondents agreed that project team members take ownership of the project goal ($M=3.915$, $SD=0.365$). In addition, the respondents agreed that involving the project team in planning and designing a project ensures that project tasks are completed within the stipulated time and quality, and within the budget ($M=3.961$, $SD=0.406$). Further, the respondents agreed that rewarding individual or team accomplishments improves project performance ($M=3.856$, $SD=0.421$). The respondents agreed that the project team identifies problems that may hinder implementation and finds solutions ($M=3.994$, $SD=0.407$). The results are in line with those of McLees and Matthews (2024), who argue that a project leader must grasp the components of team leadership and the critical talents of team members to build successful project teams and sustain essential collaboration. Because they rely on one another, project collaboration and leadership are inextricably linked (Ocharo & Kimutai, 2024).

From the results, the respondents agreed that the project clarifies individual responsibility and performance standards ($M=3.955$, $SD=0.429$). In addition, the respondents agreed that there are clear channels for passing information to project team members ($M=3.836$, $SD=0.391$). The respondents also agreed that there is free information sharing within project team members ($M=3.994$, $SD=0.366$).

The respondents agreed that team members' individual talents, experience, and skills are used for the benefit of the project ($M=3.831$, $SD=0.397$). In addition, they agreed that team members are assigned tasks in areas where they have the best knowledge ($M=3.811$, $SD=0.871$). Further, the respondents agreed that there is free exchange of ideas within the project team ($M=3.786$, $SD=0.943$). The respondents agreed that project managers know how to apply tools and techniques in performing project activities ($M=3.754$, $SD=0.876$). The results are supported by the findings of Kamunya and Chege, (2021) who revealed that the success of a project is dependent not only on the project manager, but also on the entire team, including the team's composition, professional competence, level of responsibility of team members, challenges faced by the team,

factors that account for the project's success or failure, team members' inclusion in project planning and design, and project monitoring

Table 4.4: Descriptive Statistics on Project Team Management

Statements	Mean	Std. Dev.
Project team members take ownership of project goal	3.915	0.365
Involving the project team in planning and designing of a project ensures that project tasks are performed within the stipulated time, quality and within the budget.	3.961	0.406
Rewarding of individual or team accomplishments improves project performance	3.856	0.421
The project team identifies the problems that may hinder the implementation and find solutions	3.994	0.407
The project clarifies individual responsibility and performance standards	3.955	0.429
There are clear channels of passing information to project team members	3.836	0.391
There is free information sharing within project team members	3.994	0.366
Individual talents, experience and skills of team members are used for the benefit of the project	3.831	0.397
Team members are assigned tasks in areas where they have best knowledge	3.811	0.871
There is free exchange of ideas within the project team	3.786	0.943
Project managers know the application of tools and techniques in performing project activities	3.754	0.876
Aggregate Score	3.918	0.398

4.5.3 Project Monitoring and Evaluation and Implementation of Road Projects

The third objective of the study was to determine the relationship between project monitoring and evaluation and the implementation of county-funded road projects in Uasin Gishu County. This section, therefore, presents descriptive findings on the relationship between project monitoring and evaluation and the implementation of county-funded road projects in Uasin Gishu County. In Likert-scale questions, respondents were asked to indicate how strongly they agree or disagree with the statement by ranking their response on a scale of 1-5. Table 4.5 presents a summary of the findings.

From the results, the respondents agreed that the project coordinators regularly report the project's progress to senior management ($M= 3.997$, $SD= 0.337$). In addition, the respondents agreed that the supervisors ensured that the planned County Road project activities are all done as per plan ($M= 3.988$, $SD= 0.406$). The respondents also agreed that the project managers ensured that the intended goals and objectives are being achieved and report any deviation ($M= 3.975$, $SD= 0.311$). The results are supported by the findings of Ling *et al.*, (2024) who revealed that the monitoring team requires significant assistance and reinforcement in order to properly carry out its mission with power and authority. In addition, the teams need frequent scope monitoring to detect changes, large human capacity for project scheduling, and cost overrun monitoring

The respondents agreed that monitoring plans are well applicable in county road construction activities ($M= 3.961$, $SD= 0.467$). In addition, the respondents agreed that monitoring practices on scheduling the program are used ($M= 3.902$, $SD= 0.332$). Further, the respondents agreed that rapid assessment is conducted in monitoring plans used in projects ($M= 3.902$, $SD= 0.332$). The results are in line with those of Harold (2024) who demonstrated that understanding monitoring and evaluation aids project contractors and managers in properly monitoring and evaluating infrastructure projects, resulting in improved project performance. The survey also discovered that road infrastructure project managers must understand how their initiatives fulfil the intended customer criteria.

Table 4.5: Descriptive Statistics on Project Monitoring and Evaluation

Statements	Mean	Std. Dev.
The project coordinators regularly report the progress of the project to senior management.	3.997	0.337
The supervisors ensured that the planned County Road project activities are all done as per plan	3.988	0.406
The project managers ensured that the intended goals and objectives are being achieved and report any deviation.	3.975	0.311
Monitoring plans are well applicable in county road construction activities	3.961	0.467
Monitoring practices on scheduling the program are used	3.902	0.332
Rapid assessment is conducted in monitoring plans used in projects	3.902	0.332
Aggregate Score	3.921	0.350

4.5.4 Project Stakeholder Involvement and Implementation of Road Projects

The fourth objective of the study was to find out the relationship between project stakeholder involvement and implementation of county-funded road projects in Uasin Gishu County. This section therefore presents descriptive findings on the relationship between project stakeholder involvement and implementation of county-funded road projects in Uasin Gishu County. In Likert-scale questions, respondents were asked to indicate how strongly they agree or disagree with the statement by ranking their response on a scale of 1-5. Table 4.6 presents a summary of the findings.

The respondents agreed that the project Manager passes key information to all stakeholders (M= 3.961, SD= 0.387). In addition, the respondents agreed that the needs of project beneficiaries are clearly identified for proper implementation (M = 3.955, SD = 0.319). Further, the respondents agreed that changed actions based on interests that occurred were integrated into final actions (M= 3.902, SD= 0.367). The respondents agreed that they had jointly with other stakeholders identified solutions for the road project (M= 3.836, SD= 0.325). The results conform with those of Eskerold et al (2024), who

established that a project is made up of many groups with varying interests that change over time and have varying tasks and responsibilities. Because the importance of stakeholders in a project is seldom equal, project management must analyze the importance of stakeholders and their likelihood of having an influence on the project

From the results, the respondents agreed that a survey to determine stakeholder expectations was done before implementation of the project (M= 3.836, SD= 0.333). In addition, the respondents agreed that there are established means for stakeholders to raise concerns about the project (M= 3.836, SD= 0.356). The respondents also agreed that the community provides total support for the project (M= 3.830, SD= 0.352). The respondents further agreed that project managers work with local people to create opportunities for meaningful participation in project activities (M= 3.803, SD= 0.337). The results are supported by the findings of Eskerod and Huemann (2024), who established that a two-way flow of information between stakeholders is required to guarantee project success. Inclusivity fosters good communication and information flow while also improving project performance.

Table 4.6: Descriptive Statistics on Project Stakeholder Involvement

Statements	Mean	Std. Dev.
Project Manager passes key information to all stakeholders	3.961	0.387
The needs of project beneficiaries are clearly identified for the proper implementation	3.955	0.319
Changed actions based on interests which occurred were integrated into final actions	3.902	0.367
We have jointly with other stakeholders identified solutions of the road project	3.836	0.325
Survey to determine stakeholder expectations was done before implementation of the project	3.836	0.333
There are established means for stakeholders to raise concerns about the project	3.836	0.356
There is total support for the project from the community	3.830	0.352
Project managers work with local people to create opportunities for local people to participate meaningfully in project activities	3.803	0.337
Aggregate Score	3.870	0.336

4.5.5 Government Regulation and Implementation of Road Projects

The fifth objective of the study was to determine the moderating effect of government regulation on the implementation of county-funded road projects in Uasin Gishu County. This section, therefore, presents descriptive findings on the influence of government regulation and the implementation of road projects. In Likert-scale questions, respondents were asked to indicate how strongly they agree or disagree with the statement by ranking their response on a scale of 1-5. Table 4.7 presents a summary of the findings.

The respondents agreed that government policies and regulations play a pivotal role in facilitating the planning and execution of county-funded road projects ($M= 3.921$, $SD= 0.342$). In addition, the respondents agreed that the timely completion of road projects relies heavily on sufficient funding ($M= 3.919$, $SD= 0.303$). Further, the respondents agreed that positive impacts on road project implementation can be attributed to well-aligned government policies ($M= 3.902$, $SD= 0.332$). The respondents agreed that bureaucratic hurdles and regulatory complexities can impede the smooth progress of road projects ($M= 3.888$, $SD= 0.315$).

From the results, the respondents agreed that quality assurance measures are in place to monitor materials and workmanship in road projects ($M= 3.868$, $SD= 0.316$). In addition, the respondents agreed that addressing deviations from construction standards promptly ensures the quality and integrity of road projects ($M= 3.802$, $SD= 0.332$). The respondents also agreed that stricter adherence to construction standards positively impacts the longevity and performance of road infrastructure ($M= 3.786$, $SD= 0.356$). The respondents further agreed that contractors and project teams are expected to maintain a thorough understanding of relevant construction standards ($M= 3.751$, $SD= 0.339$).

Table 4.7: Descriptive Statistics on Government Regulation

Statements	Statements	Mean
Government policies and regulations play a pivotal role in facilitating the planning and execution of county-funded road projects	3.921	0.342
Timely completion of road projects significantly relies on the availability of sufficient funding.	3.919	0.303
Positive impacts on road project implementation can be attributed to well-aligned government policies.	3.902	0.332
Bureaucratic hurdles and regulatory complexities can impede the smooth progress of road projects.	3.888	0.315
Quality assurance measures are in place to monitor materials and workmanship in road project	3.868	0.316
Addressing deviations from construction standards promptly ensures the quality and integrity of road projects.	3.802	0.332
Stricter adherence to construction standards positively impacts the longevity and performance of road infrastructure	3.786	0.356
Contractors and project teams are expected to maintain a thorough understanding of relevant construction standards	3.751	0.339
Aggregate Score	3.881	0.328

4.5.6 Implementation of County-Funded Road Projects

This section presents descriptive findings on the implementation of county-funded road projects in Uasin Gishu County. On Likert scale questions, respondents were asked to indicate how far they agree or disagree with the statement by ranking the answer in the scale of 1-5. Table 4.9 presents a summary of the findings.

The respondents agreed that project has achieved its purpose ($M= 3.996$, $SD= 0.365$). In addition, the respondents agreed that money set aside at the start of our project was used as proposed ($M= 3.819$, $SD= 0.345$). Further, the respondents agreed that there is an improved economic status of the local community ($M= 3.798$, $SD= 0.311$). The respondents agreed that projects comply with safety and environmental regulations ($M= 3.731$, $SD= 0.308$).

From the results, the respondents agreed that projects focus on the satisfaction of the general public (M= 3.711, SD= 0.376). In addition, the respondents agreed that projects are finished within time, cost, and quality constraints (M= 3.675, SD= 0.397). The respondents also agreed that concluded projects meet the required scope and quality (M= 3.613, SD= 0.386). The respondents further agreed that seeking project feedback from stakeholders improves performance (M= 3.556, SD= 0.365).

Table 4.8: Descriptive Statistics on Implementation of Road Projects

Statements	Statements	Mean
Our project has achieved its purpose	3.996	0.365
Money set aside at the start of our project was used as proposed	3.819	0.345
There is improved economic status of the local community	3.798	0.311
Projects comply with safety and environmental regulations	3.731	0.308
Projects focus on satisfaction of the general public	3.711	0.376
Projects are finished within time, cost and quality constraint	3.675	0.397
Concluded projects meet the required scope and quality	3.613	0.386
Seeking projects feedbacks from stakeholders improves performance	3.556	0.365
Aggregate Score	3.711	0.328

4.5.7 Secondary Data on Implementation of County-Funded Road Projects

The implementation of county-funded road projects was assessed using objective secondary data obtained from the Uasin Gishu County Department of Roads annual reports, County Budget Implementation Review Reports, project completion reports, and the Office of the Auditor-General reports for the period 2020–2024. The dependent variable was measured using four key indicators, namely delivery within budget, completion on schedule, achievement of project scope, and attainment of quality standards. These indicators provide objective evidence of project implementation performance over the five-year period and complement the primary data collected on the independent variables.

Table 4.9: Secondary Data on Implementation of County-Funded Road Projects

Year	Delivery within Budget (%)	Completion on Schedule (%)	Achievement of Project Scope (%)	Attainment of Quality Standards (%)
2020	68	61	70	74
2021	71	65	73	77
2022	76	70	78	81
2023	82	77	84	87
2024	88	84	89	92

Delivery within Budget

The findings indicate that the proportion of county-funded road projects delivered within the approved budget increased steadily from 68% in 2020 to 71% in 2021, 76% in 2022, 82% in 2023, and 88% in 2024. This consistent upward trend suggests significant improvements in financial planning, budget control, expenditure monitoring, and resource utilisation during project implementation. The improvement also implies that the county progressively strengthened its financial management systems, resulting in fewer budget overruns and more efficient utilisation of public resources allocated to road infrastructure development.

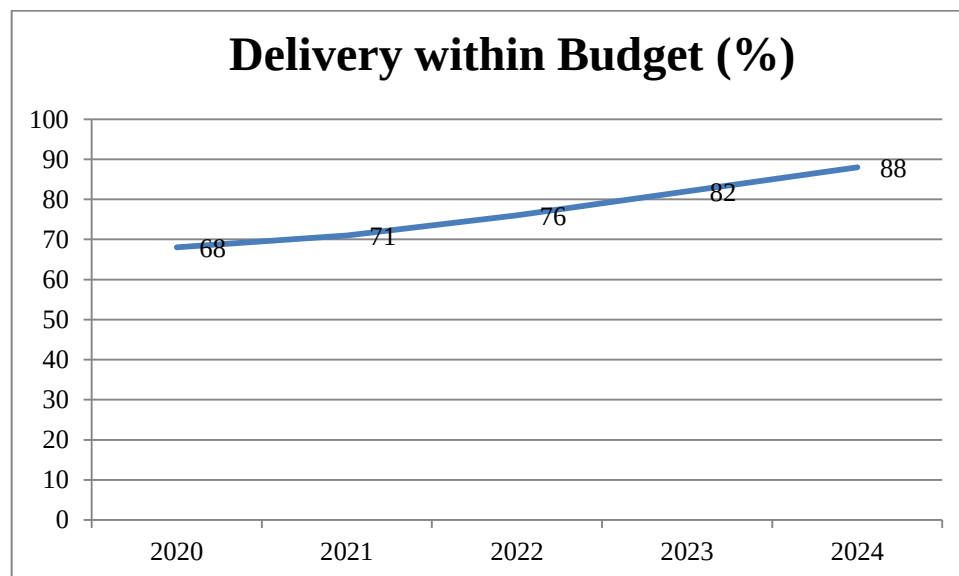


Figure 4.4: Delivery within Budget

Completion within Schedule

Completion of county-funded road projects within the planned implementation period also exhibited a positive trend during the study period. The percentage of projects completed on schedule improved from 61% in 2020 to 65% in 2021, 70% in 2022, 77% in 2023, and 84% in 2024. The observed improvement indicates enhanced project scheduling, better coordination of project activities, timely allocation of financial and technical resources, and improved supervision of contractors. Despite this progress, the findings indicate that a proportion of projects continued to experience implementation delays, suggesting the need for further improvements in project scheduling and execution.

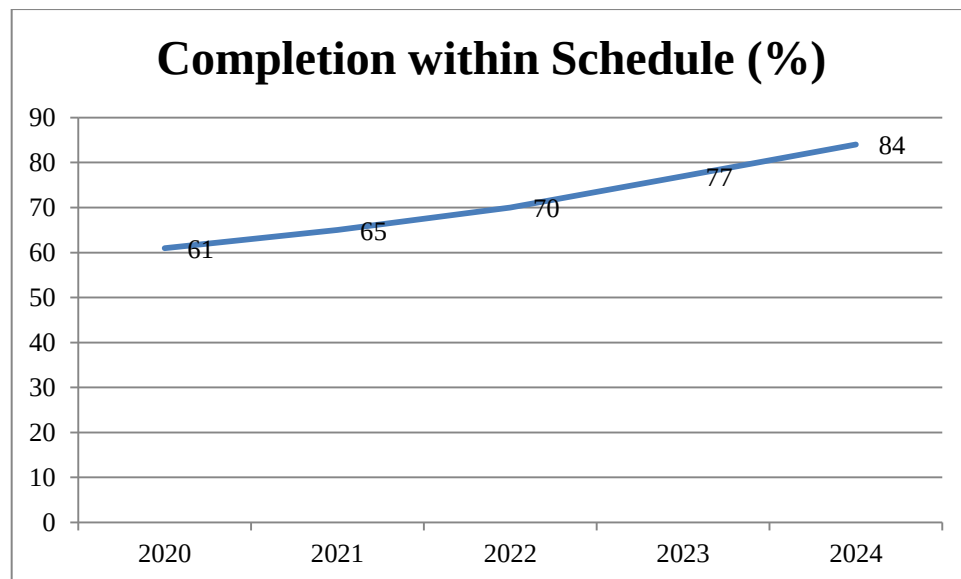


Figure 4.5: Completion within Schedule

Achievement of Project Scope

Achievement of the planned project scope increased consistently over the five-year period. Projects meeting their intended scope increased from 70% in 2020 to 73% in 2021, 78% in 2022, 84% in 2023, and 89% in 2024. The results suggest that the county improved its ability to deliver road projects according to approved designs, specifications, and planned

outputs. The upward trend further demonstrates improvements in project planning, scope definition, and implementation control, which minimised scope changes and ensured that completed projects adequately addressed the intended development objectives.

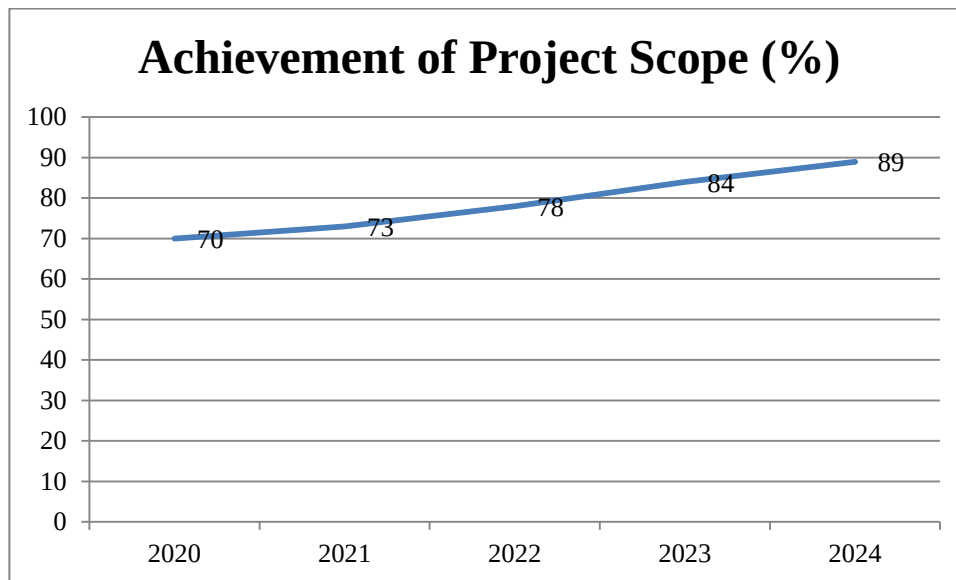


Figure 4.6: Achievement of Project Scope

Attainment of Quality Standards

The attainment of prescribed quality standards recorded the highest performance among the four implementation indicators. The percentage of projects meeting the required engineering and construction quality standards increased from 74% in 2020 to 77% in 2021, 81% in 2022, 87% in 2023, and 92% in 2024. This steady improvement suggests strengthened quality assurance mechanisms, enhanced compliance with engineering specifications, more rigorous inspection procedures, and improved contractor performance. Nevertheless, the findings indicate that a small proportion of projects still failed to attain the required quality standards, highlighting the need for continuous strengthening of quality control systems in county-funded road projects.

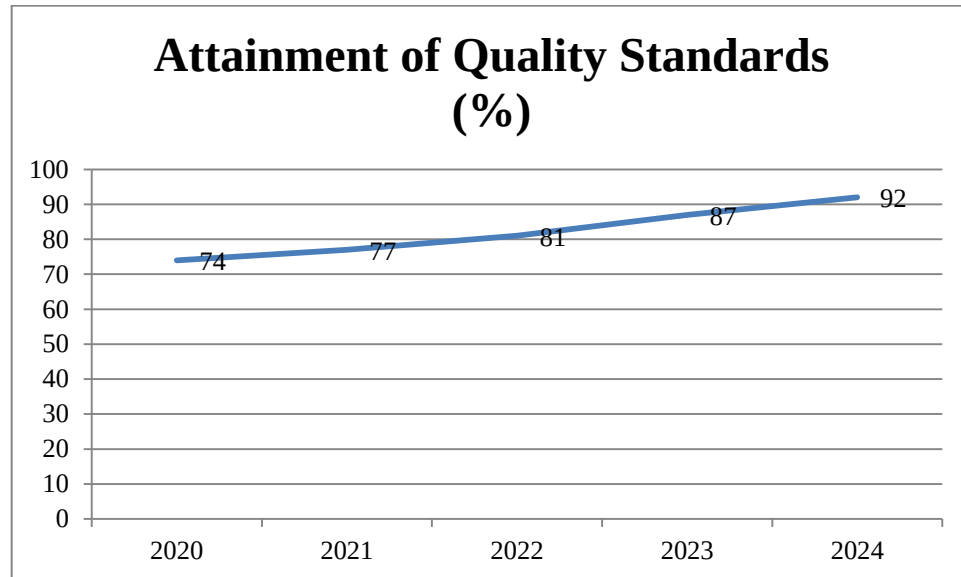


Figure 4.7: Attainment of Quality Standards

4.6 Diagnostic Tests

The underlying assumptions in linear regression include no autocorrelation, little or no multicollinearity, homoscedasticity, and a linear relationship between the independent and dependent variables. In cases of violation of the regression assumptions, the confidence intervals, significance levels, and coefficient estimates derived from the regression model may be misleading, biased, or inefficient. Moreover, when one or more regression assumptions are violated, the inferences derived from the regression model cannot be generalized to other data.

4.6.1 Linearity Test

When the value of sig. deviation from the linearity > 0.05 , then in the multiple regression model it can be said that the predictor variables have significant effect on the response variable. If the value sig. deviation from linearity is < 0.05 , then the relationship between the predictors and the response variable is said to be partially significant. In the SPSS output display (Table 4.10), the sig. value of Project Planning = 0.649; Project Team

Management = 0.538; Project Monitoring And Evaluation = 0.554; Project Stakeholder Involvement = 0.681 and Government Regulation = 0.566. It can therefore be concluded that there is significant linear relationship between Project Planning, Project Team Management, Project Monitoring And Evaluation, Project Stakeholder Involvement and Government Regulation with project implementation.

Table 4.10: Coefficients of Linearity Test

Model	Sig.	95.0% Confidence Interval for B		Tolerance
		Lower Bound	Upper Bound	
Project Planning	.649	-13.608	11.411	.560
Project Team Management	.538	-19.721	23.732	.189
Project Monitoring and Evaluation	.554	-21.089	18.518	.172
Project Stakeholder Involvement	.681	-10.179	11.121	.623
Government Regulation	.566	-39.618	45.182	.281

4.6.2 Heteroskedasticity Test

Violations of homoscedasticity tend to inhibit the critical evaluation of forecast errors' standard deviations, often leading to confidence intervals that are extremely narrow or extremely wide. Heteroscedasticity in this study was assessed using the Breusch-Pagan test. The null hypothesis for this test was that the error variances were equal and were a multiple function of variables. Homoscedasticity normally occurs when the p-value is greater than the significance level (0.05). As indicated in Table 4.11, the p-value was 0.3274, which was greater than the significance level of 0.05. This implies that the regression model was homoscedastic.

Table 4.11: Breusch-Pagan Test for Heteroscedasticity

Ho: Constant variance	
Variables: Fitted with values of Project Implementation	
Chi2 (1)	0.96
Prob>chi2	0.3274

4.6.3 Autocorrelation Test

The Durbin-Watson statistic was used to test autocorrelation. The Durbin-Watson statistic is a statistical test used to determine the level of autocorrelation in the residuals of a given regression analysis. The general principle of the Durbin–Watson statistic is that values between 1.5 and 2.5 indicate no autocorrelation in a dataset. The value of the Durbin-Watson statistic in this pilot study was 1.829 (Table 4.12). Since the value is within the range of 1.5 and 2.5, it denotes that the data did not auto-correlate. Therefore, there was no serial correlation in the data.

Table 4.12: Autocorrelation Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.765 ^a	.586	.580	1.72583	1.829

4.6.4 Multicollinearity Test

Multicollinearity is used to determine the probability that any two or more independent variables in a particular multivariate regression model are highly or significantly correlated. This would mean that one variable can be predicted from the other. When the correlations among the independent variables are quite strong, the standard errors of the coefficients tend to increase, reducing the precision of the estimates and weakening the statistical power of the regression model. The study used the Variance Inflation Factor (VIF) to assess the degree of collinearity among the variables. The general principle is that a VIF greater than ten (10) indicates multicollinearity. The Variance Inflation Factors

for the independent variables, as depicted in Table 4.13, indicate that there was no multicollinearity among the independent variables, as the VIF values for each variable are below 7. Project planning had a VIF of 1.660, project team management had a VIF of 3.114, project monitoring and evaluation had a VIF of 2.863, and project stakeholder involvement had a VIF of 1.091. All variables had VIFs less than 10. This means that the predictive power of each independent variable on the dependent variable would not be affected or reduced by the other independent variables. This is because the presence of multicollinearity reduces the statistical significance of the independent variables.

Table 4.13: Multicollinearity Test

	Tolerance	VIF
project planning	.603	1.660
project team management	.321	3.114
project monitoring and evaluation	.349	2.863
project stakeholder involvement	.916	1.091

4.7 Correlation Analysis

The study computed a correlation analysis to determine the strength and the direction of the relationship between the variables being studied. If the correlation values are $r = \pm 0.1$ to ± 0.29 then the relationship between the two variables is small, if it is $r = \pm 0.3$ to ± 0.49 the relationship is medium, and when $r = \pm 0.5$ and above there is a strong relationship between the two variables under consideration. Table 4.12 presents the findings obtained.

The findings show that project planning and implementation of county-funded road projects in Uasin Gishu County have a strong positive and significant relationship ($r = 0.771$, $p < 0.05$). The relationship was considered significant since the p-value (0.002) was less than the selected level of significance (0.05). This implies that project planning has a significant effect on the implementation of county-funded road projects in Uasin Gishu County. These findings are in line with the findings of Mwanza, Namusonge and Makokha, (2020) who established that completion of the planning phase is marked by the

approval of the project management plan, the execution of the planning project status review, and the permission to go on to the next phase. Taylor (2024) provides the foundation for project management, execution, monitoring, and assessment by stating that it is necessary to learn to deal with ambiguity, subjective views and values, as well as to be flexible, open, and communicative, in order to participate in and manage the planning process.

Project team management is also seen to have a significant negative relationship with the implementation of county-funded road projects in Uasin Gishu County ($r = -.775$, $p < 0.05$). Since the p-value (.001) was less than the selected level of significance (0.05), the relationship was considered significant. This therefore suggests that project team management affects the implementation of county-funded road projects in Uasin Gishu County. The results conform with the findings of Mclees and Matthews (2024) who established that the success of a project is dependent not only on the project manager, but also on the entire team, including the team's composition, professional competence, level of responsibility of team members, challenges faced by the team, factors that account for the project's success or failure, team members' inclusion in project planning and design, and project monitoring.

Project monitoring and evaluation is also seen to have a strong positive and significant relationship with the implementation of county-funded road projects in Uasin Gishu County ($r = .784$, $p < 0.05$). Since the p-value (.000) was less than the selected significance level (0.05), the relationship between the two variables was considered significant. The study results are supported by the findings of Harold (2024), who demonstrated that understanding monitoring and evaluation aids project contractors and managers in properly monitoring and evaluating infrastructure projects, resulting in improved project performance. The survey also discovered that road infrastructure project managers must understand how their initiatives fulfil the intended customer criteria.

Finally, project stakeholder involvement is seen to have a positive and significant relationship with the implementation of county-funded road projects in Uasin Gishu County ($r = .796$, $p < 0.05$). The p-value (.000) was less than the selected level of significance (0.05), suggesting that the relationship between the two variables was significant. This means that project stakeholder involvement affects the implementation of county-funded road projects in Uasin Gishu County. The findings are in line with the results of Laplume, Sonpar, and Litz (2024), who revealed that project managers must assess the groups and persons who are likely to impact, or are affected by, the project's success. If the interests of certain stakeholders are not taken into account, the affected group may oppose the project's execution, directly or indirectly.

Table 4.14: Correlation Analysis

		Project Implementation	Project Planning	Project Team Management	Project Monitoring and Evaluation	Stakeholder Involvement
Project Implementation	Pearson	1				
	Correlation					
	Sig. (2-tailed)					
Project Planning	N	146				
	Pearson	.771**	1			
	Correlation					
Project Team Management	Sig. (2-tailed)	.002				
	N	146	146			
	Pearson	.775**	.289	1		
Project Monitoring and Evaluation	Correlation					
	Sig. (2-tailed)	.001	.061			
	N	146	146	146		
Stakeholder Involvement	Pearson	.784**	.172	.193	1	
	Correlation					
	Sig. (2-tailed)	.000	.079	.084		
	N	146	146	146	146	
	Pearson	.796**	.185	.189	.279	1
	Correlation					
	Sig. (2-tailed)	.000	.078	.081	.074	
	N	146	146	146	146	146

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

4.8 Statistical Modelling

The study aimed to establish the influence of project management practices in implementing county-funded road projects in Uasin Gishu County in Kenya. To achieve

the objective, the study conducted regression analysis to first establish whether there exist some relationship between project planning, project team management, project monitoring and evaluation, and project stakeholder involvement and the implementation of county-funded road projects in Uasin Gishu County. Using multiple regression analysis, the study examined the combined effect of independent variables on the dependent variable. The findings were presented in three tables, discussed in sub-sections below.

Model summary was used to establish the amount of variation in the implementation of county-funded road projects in Uasin Gishu County that can be explained by changes in project planning, project team management, project monitoring and evaluation, and project stakeholder involvement. The predictive power of the model was determined using the coefficient of determination (R^2). The model summary results in Table 4.15 show that the R-squared is 0.739, which suggests that 73.9% of all variation in implementation of county-funded road projects in Uasin Gishu County is explained by changes in project planning, project team management, project monitoring and evaluation, and project stakeholder involvement. The remaining 26.1% suggests that there are other factors that can be attributed to the variation in the implementation of county-funded road projects in Uasin Gishu County that were not discussed in this study. The correlation coefficient (R) shows the strength of the relationship between the study variables. From the findings, the variables were strongly and positively related, as indicated by $r = 0.859$.

To determine the model's fitness for predicting the dependent variable (implementation of county-funded road projects in Uasin Gishu County), the study conducted an F-test at the 95% confidence level. The significance of the study variables was determined based on the P-value of the variable coefficients at 0.05 significance level. The decision on the fitness of the model is accepted if the p-value is below 0.05 and rejected if it is above 0.05. The findings in Table 4.15 showed that $\text{Prob} > F_{4, 141} = 0.000$ was less than the 0.05 significance level. This suggested that the model as constituted was fit in establishing the influence of project management practices in implementing county-funded road projects

in Uasin Gishu County in Kenya. Further, the F-calculated, from the table (99.93), was greater than the F-critical, from f-distribution tables (2.436), supporting the findings that project planning, project team management, project monitoring and evaluation, and project stakeholder involvement can be used to predict implementation of county-funded road projects in Uasin Gishu County.

From the coefficients in Table 4.15, the following regression model was fitted;

$$Y = 1.481 + 0.159 X_1 + 0.232 X_2 + 0.216 X_3 + 0.196 X_4$$

Where Y is the implementation of county-funded road projects in Uasin Gishu County; X_1 is project planning; X_2 is project team management; X_3 is project monitoring and evaluation; and X_4 is project stakeholder involvement.

The findings showed that holding project planning, project team management, project monitoring and evaluation, and project stakeholder involvement constant at zero, implementation of county-funded road projects in Uasin Gishu County would be 1.481. The constant ($\beta = 1.481$) was significant at 0.05 significance level ($P = 0.000$). The findings further showed that project planning had a coefficient of 0.159 indicating that holding all other factors constant, a unit increase in project planning would result in a 15.9% increase in implementation of county-funded road projects in Uasin Gishu County. The coefficient was significant since the p-value obtained (0.004) was less than the level of significance of 0.05. It was therefore established that project planning has a significant positive effect on the implementation of county-funded road projects in Uasin Gishu County.

Regarding project team management, it was observed that project team management had a coefficient of 0.232, suggesting that holding all other factors constant, a unit change in dependency on project team management results in a 23.2% change in implementation of county-funded road projects in Uasin Gishu County. This variable was significant since the p-value (0.003) was less than the significance 0.05. Results further showed that project

monitoring and evaluation have a coefficient of 0.216, indicating that increasing project monitoring and evaluation by one unit while holding all other factors constant would result in a 0.216-unit increase in the implementation of county-funded road projects in Uasin Gishu County. This relationship was significant since the p-value (0.006) was less than the 0.05 significance level.

Regarding project stakeholder involvement, it was noted that project stakeholder involvement had a coefficient of 0.196, indicating that holding all other factors constant, a unit increase in project stakeholder involvement leads to a 19.6% improvement in the implementation of county-funded road projects in Uasin Gishu County. The variable was also found to be significant, as the p-value (0.005) was lower than the selected level of significance (0.05).

Table 4.1: Statistical Modelling

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.859	0.739	0.717	0.26811

a. Predictors: (Constant), project planning, project team management, project monitoring and evaluation and project stakeholder involvement

Analysis of Variance						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.353	4	2.58825	99.93	.000 ^b
	Residual	3.663	141	0.0259		
	Total	14.016	145			

a. Dependent Variable: implementation of county-funded road projects

b. Predictors: (Constant), project planning, project team management, project monitoring and evaluation and project stakeholder involvement

Beta Coefficients of Study Variables						
Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	1.481	0.201		7.368	.000
	project planning	0.159	0.068	0.067	2.338	.004
	project team management	0.232	0.079	0.251	2.937	.003
	project monitoring and evaluation	0.216	0.082	0.016	2.634	.006
	project stakeholder involvement	0.196	0.069	0.126	2.841	.005

a. Dependent Variable: implementation of county-funded road projects

4.9 Simple Linear Regression

4.9.1 Simple Linear Regression for Project Planning

The first specific objective of the study was to establish the relationship between project planning and the implementation of county-funded road projects in Uasin Gishu County. The associated null hypothesis was that Project planning has no significant influence on implementation of county-funded road projects in Uasin Gishu County. A univariate analysis was conducted in which project planning was regressed on the implementation of county-funded road projects in Uasin Gishu County.

R-squared measures the proportion of the dependent variable's variation that can be explained by the independent variables. The greater the value of R-squared, the greater the effect of the independent variable. The R-squared can range from 0.000 to 1.000, with 1.000 indicating a perfect fit and each point lying on the line. As indicated in Table 4.16, the R-squared for the relationship between project planning and implementation of county-funded road projects in Uasin Gishu County was 0.241; this is an indication that at 95% confidence interval, 24.1% of the variation in implementation of county-funded road projects in Uasin Gishu County can be attributed to changes in project planning. Therefore, project planning can be used to explain 24.1% of changes in the implementation of county-funded road projects in Uasin Gishu County, but there are other factors that can be attributed to 75.9% change in the implementation of county-funded road projects in Uasin Gishu County.

Analysis of variance was used to determine whether the regression model provided a good fit for the data. It also gave the F-test statistic; the linear regression's F-test has the null hypothesis that there is no linear relationship between the two variables. From the analysis of variance (ANOVA) findings in Table 4.16, the study found out that $\text{Prob} > F_{1,144} = 0.000$ was less than the selected 0.05 level of significance. This suggests that the model as constituted was fit to predict the implementation of county-funded road projects in Uasin

Gishu County. Further, the F-calculated, from the table (268.25), was greater than the F-critical, from f-distribution tables (3.907), supporting the findings that project planning can be used to predict implementation of county-funded road projects in Uasin Gishu County.

From the results in Table 4.16, the following regression model was fitted.

$$Y = 2.069 + 0.433 X_1$$

(X_1 is Project planning)

The coefficient results showed that the constant had a coefficient of 2.069, suggesting that if project planning was held constant at zero, implementation of county-funded road projects in Uasin Gishu County would be 2.069 units. In addition, results showed that the project planning coefficient was 0.433, indicating that a unit increase in project planning would result in a 0.433 improvement in the implementation of county-funded road projects in Uasin Gishu County. It was also noted that the P-value for the project planning coefficient was 0.000, which is less than the set 0.05 significance level, indicating that project planning was significant. Based on these results, the study rejected the null hypothesis and accepted the alternative that project planning has positive significant influence on the implementation of county-funded road projects in Uasin Gishu County.

Table 4.16: Simple Linear Regression for Project Planning

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.491 ^a	.241	.239	.69655

a. Predictors: (Constant), project planning

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	45.87	1	45.87	268.25	.000 ^b
1 Residual	24.735	144	0.171		
Total	70.605	145			

a. Dependent Variable: Project implementation

b. Predictors: (Constant), Project planning

Beta Coefficients

Model	Unstandardised Coefficients	Standardised Coefficients	t	Sig.
	B	Std. Error	Beta	
1 (Constant)	2.069	.174	11.881	.000
1 Project planning	.433	.045	.491	.000

a. Dependent Variable: Project implementation

4.9.2 Simple Linear Regression for Project Team Management

The second objective of the study was to assess the relationship between project team management and implementation of county-funded road projects in Uasin Gishu County. The corresponding hypothesis was:

Ho₂: Project team management has no significant influence on implementation of county-funded road projects in Uasin Gishu County.

A univariate analysis was therefore conducted to test the null hypothesis. From the model summary findings in Table 4.17, the r-squared for the relationship between project team management and implementation of county-funded road projects in Uasin Gishu County was 0.269; this is an indication that at 95% confidence interval, 26.9% variation in implementation of county-funded road projects in Uasin Gishu County can be attributed to changes in project team management. Therefore, project team management can be used to explain 26.9% change in the implementation of county-funded road projects in Uasin Gishu County. However, the remaining 73.1% variation in implementation of county-

funded road projects in Uasin Gishu County suggests that factors beyond project team management explain implementation.

Analysis of variance was used to determine whether the regression model provided a good fit for the data. From the analysis of variance (ANOVA) findings in Table 4.17, the study found out that that $\text{Prob} > F_{1,144} = 0.000$ was less than the selected 0.05 level of significance. This suggests that the model as constituted was fit to predict the implementation of county-funded road projects in Uasin Gishu County. Further, the F-calculated (310.05) was greater than the F-critical (3.907) from the f-distribution tables, supporting the finding that project team management can be used to predict the implementation of county-funded road projects in Uasin Gishu County.

From the results in Table 4.17 the following regression model was fitted.

$$Y = 1.792 + 0.497 X_2$$

(X_2 is Project team management)

The coefficient results showed that the constant had a coefficient of 1.792, suggesting that if project team management was held constant at zero, implementation of county-funded road projects in Uasin Gishu County would be at 1.792 units. In addition, results showed that the project team management coefficient was 0.497, indicating that a unit increase in project team management would result in a 0.497 increase in the implementation of county-funded road projects in Uasin Gishu County. It was also noted that the P-value for the information flow coefficient was 0.000, which is less than the set significance level of 0.05, indicating that project team management was significant. Based on these results, the study rejected the null hypothesis and accepted the alternative that project team management significantly positively influences the implementation of county-funded road projects in Uasin Gishu County.

Table 4.17: Simple Linear Regression for Project Team Management

Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate
1	.519 ^a	.269	.267	.68365

a. Predictors: (Constant), Project team management

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	51.159	1	51.159	310.05	.000 ^b
1 Residual	23.817	144	0.165		
Total	74.976	145			

a. Dependent Variable: Project implementation

b. Predictors: (Constant), Project team management

Beta Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.792	.188		9.523	.000
1 project team management	.479	.046	.519	10.462	.000

a. Dependent Variable: Project Implementation

4.9.3 Simple Linear Regression for Project Monitoring and Evaluation

The third objective of the study was to determine the relationship between project monitoring and evaluation and the implementation of county-funded road projects in Uasin Gishu County. The corresponding hypothesis was:

Ho₃ Project monitoring and evaluation has no significant influence on implementation of county-funded road projects in Uasin Gishu County.

A univariate analysis was therefore conducted to test the null hypothesis. From the model summary findings in Table 4.18, the R-squared for the relationship between project monitoring and evaluation and implementation of county-funded road projects in Uasin Gishu County was 0.215; this is an indication that at 95% confidence interval, 21.5% variation in implementation of county-funded road projects in Uasin Gishu County can be attributed to changes in project monitoring and evaluation. Therefore, project monitoring and evaluation can be used to explain 21.5% change in the implementation of county-

funded road projects in Uasin Gishu County. However, the remaining 78.5% variation in implementation of county-funded road projects in Uasin Gishu County suggests that there are other factors other than project monitoring and evaluation that explain the implementation of county-funded road projects in Uasin Gishu County.

Analysis of variance was used to determine whether the regression model provided a good fit for the data. From the analysis of variance (ANOVA) findings in Table 4.18, the study found out that that $\text{Prob} > F_{1,144} = 0.000$ was less than the selected 0.05 level of significance. This suggests that the model as constituted was fit to predict the implementation of county-funded road projects in Uasin Gishu County. Further, the F-calculated, from the table (229.96), was greater than the F-critical, from f-distribution tables (3.907), supporting the findings that project monitoring and evaluation can be used to predict the implementation of county-funded road projects in Uasin Gishu County.

From the results in table 4.18, the following regression model was fitted.

$$Y = 1.808 + 0.469 X_3$$

(X_3 is Project monitoring and evaluation)

The coefficient results showed that the constant had a coefficient of 1.808, suggesting that if project monitoring and evaluation were held constant at zero, implementation of county-funded road projects in Uasin Gishu County would be at 1.808 units. In addition, results showed that the project monitoring and evaluation coefficient was 0.469, indicating that a unit increase in project monitoring and evaluation would yield a 0.469-unit improvement in the implementation of county-funded road projects in Uasin Gishu County. It was also noted that the P-value for project monitoring and evaluation was 0.000, which is less than the set 0.05 significance level, indicating that project monitoring and evaluation was significant. Based on these results, the study rejected the null hypothesis and accepted the

alternative that project monitoring and evaluation has positive significant influence on the implementation of county-funded road projects in Uasin Gishu County.

Table 4.18: Simple Linear Regression for Project Monitoring and Evaluation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.464 ^a	.215	.213	.70838

a. Predictors: (Constant), Project Monitoring and Evaluation

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	40.933	1	40.933	229.96	.000 ^b
Residual	25.602	144	0.178		
Total	66.535	145			

a. Dependent Variable: Project Implementation

b. Predictors: (Constant), Project monitoring and evaluation

Beta Coefficients for Project Monitoring and Evaluation

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.808	.215		8.398	.000
1 project monitoring and evaluation	.469	.052	.464	9.032	.000

a. Dependent Variable: Project Implementation

4.9.4 Simple Linear Regression for Project Stakeholder Involvement

The fourth objective of the study was to find out the relationship between project stakeholder involvement and implementation of county-funded road projects in Uasin Gishu County. The corresponding hypothesis was:

Ho₄: Project stakeholder involvement has no significant influence on implementation of county-funded road projects in Uasin Gishu County

A univariate analysis was therefore conducted to test the null hypothesis. From the model summary findings in Table 4.19, the R-squared for the relationship between project stakeholder involvement and implementation of county-funded road projects in Uasin Gishu County was 0.222; this is an indication that at 95% confidence interval, 22.2%

variation in implementation of county-funded road projects in Uasin Gishu County can be attributed to changes in project stakeholder involvement. Therefore, project stakeholder involvement can be used to explain 22.2% change in the implementation of county-funded road projects in Uasin Gishu County. However, the remaining 77.8% variation in implementation of county-funded road projects in Uasin Gishu County suggests that there are other factors other than project stakeholder involvement that explain implementation of county-funded road projects in Uasin Gishu County

The analysis of variance was used to determine whether the regression model is a good fit for the data. From the analysis of variance (ANOVA) findings in Table 4.19, the study found out that that $\text{Prob} > F_{1,144} = 0.000$ was less than the selected 0.05 level of significance. This suggests that the model as constituted was fit to predict the implementation of county-funded road projects in Uasin Gishu County. Further, the F-calculated, from the table (239.65), was greater than the F-critical, from f-distribution tables (3.907), supporting the findings that Project Stakeholder Involvement can be used to predict the implementation of county-funded road projects in Uasin Gishu County.

From the results in Table 4.19, the following regression model was fitted.

$$Y = 2.142 + 0.411 X_4$$

(X_4 is Project stakeholder involvement)

The coefficient results showed that the constant had a coefficient of 2.142, suggesting that if project stakeholder involvement was held constant at zero, implementation of county-funded road projects in Uasin Gishu County would be at 2.142 units. In addition, results showed that the past strategy coefficient was 0.411, indicating that a unit increase in project stakeholder involvement would result in a 0.411 unit improvement in the implementation of county-funded road projects in Uasin Gishu County. It was also noted that the P-value for the past strategy was 0.000, which is less than the set 0.05 significance

level, indicating that project stakeholder involvement was significant. Based on these results, the study rejected the null hypothesis and accepted the alternative that project stakeholder involvement has a significant positive influence on the implementation of county-funded road projects in Uasin Gishu County.

Table 4.19: Simple Linear Regression for Project Stakeholder Involvement

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.471 ^a	.222	.219	.70542

a. Predictors: (Constant), Project Stakeholder Involvement

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	42.179	1	42.179	239.65	.000 ^b
1 Residual	25.398	144	.176		
Total	67.577	145			

a. Dependent Variable: Project Implementation

b. Predictors: (Constant), Project stakeholder involvement

Beta Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.142	.176		12.185	.000
1 project stakeholder involvement	.411	.045	.471	9.207	.000

a. Dependent Variable: Project Implementation

4.9.5 Simple Linear Regression for Government Regulation

The fifth objective of the study was to determine the moderating effect of government regulation on the implementation of county-funded road projects in Uasin Gishu County. Moderation occurs when the relationship between the dependent variable and the independent variables depends on a third variable (the moderator). The effect that this variable has is termed as interaction as it affects the direction or strength of the relationship between the dependent and independent variable. To achieve the fifth research objective, the study computed a moderating effect regression analysis. This (moderating effect regression analysis) also guided the study in testing the fifth research hypothesis. Government regulation (M) was introduced as the moderating variable.

H₀₅: Government regulation has no significant moderating effect on the influence of implementation of county-funded road projects in Uasin Gishu County.

The study combined all the four variables (project planning, project team management, project monitoring and evaluation and project stakeholder involvement) to form a new variable X. The study then used stepwise regression to establish the moderating effect of government regulation (M) on the relationship between independent variable (X) and implementation of county-funded road projects in Uasin Gishu County (Y).

From the model summary results presented in Table 4.20, the first model, which examined the regression between the implementation of county-funded road projects in Uasin Gishu County (X) without the inclusion of the moderator, government regulation (M), and the interaction effect, recorded an R-squared value of 0.336. This indicates that 33.6% of the variation in the implementation of county-funded road projects in Uasin Gishu County can be explained by changes in project management practices. The p-value for the first model (0.000) was lower than the selected level of significance (0.05), implying that the model was statistically significant. The findings from the second model, which included project management practices, government regulation, and the interaction term (X*M) as predictors of the implementation of county-funded road projects in Uasin Gishu County, produced an R-squared value of 0.568. This suggests that the inclusion of government regulation in the second model resulted in a 0.232 increase in the R-squared value, thereby demonstrating that government regulation positively moderates the implementation of county-funded road projects in Uasin Gishu County.

From the model summary findings in Table 4.20, the F-calculated for the first model was 422.73, and for the second model was 378.80. Since the F-calculated for the two models were more than the F-critical, 3.907 (first model) and 2.668 (second model), the two models were a good fit for the data, and hence they could be used in predicting the moderating effect of government regulation on the implementation of county-funded road projects in Uasin Gishu County.

Further, by substituting the beta values as well as the constant term from the coefficient's findings for the first step regression modelling, the following regression model will be fitted:

$$Y = 1.387 + 0.608 X$$

Where X is project management practices

The findings show that when project management practices are held to a constant zero, implementation of county-funded road projects in Uasin Gishu County will be at a constant value of 1.387. The findings also show that project management practices have a statistically significant effect on the implementation of county-funded road projects in Uasin Gishu County, as shown by a regression coefficient of 0.608 (p-value= .000).

By substituting the beta values as well as the constant term from model 2 emanating from the second step in regression modelling the following regression model was fitted:

$$Y = 3.876 + 0.220 X + 0.325 M + 0.283 X*M$$

Where X is project management practices; M is government regulation and X*M is the interaction term between project management practices and government regulation.

The findings show that when project management practices, government regulation, interaction (X*M) are held to a constant zero, implementation of county-funded road projects in Uasin Gishu County will be at a constant value of 3.876. The model also indicated that project management practices had a positive and statistically significant effect on the implementation of county-funded road projects in Uasin Gishu County, as shown by a regression coefficient of 0.220 (p-value= 0.002). It is also seen that government regulation had a positive and significant effect on implementation of county-funded road projects in Uasin Gishu County as shown by a regression coefficient 0.325. On the other hand, interaction of project management practices and government regulation

(X*M) also had a positive and significant effect on the implementation of county-funded road projects in Uasin Gishu County, as shown by a regression coefficient of 0.283 (p-value= 0.000).

It is therefore seen that project management practices on their own has 22% effect on the implementation of county-funded road projects in Uasin Gishu County. However, when interacting with government regulation, it has an effect of 28.3%. This is a clear indication that the introduction of government regulation as a moderating variable has a positive influence on the implementation of county-funded road projects in Uasin Gishu County. The study therefore rejects the null hypothesis and accepts the alternative that government regulation has significant moderating effect on the relationship between project management practices and implementing county-funded road projects in Uasin Gishu County in Kenya.

Table 4.20: Simple Linear Regression for Government Regulation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.580 ^a	.336	.334	.65170	.336	150.295	1	144	.000
2	.754 ^b	.568	.564	.52727	.232	79.360	3	142	.000

a. Predictors: (Constant), project management practices

b. Predictors: (Constant), project management practices, government regulation, Interaction (X*M)

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	63.832	1	63.832	422.73	.000 ^b
Residual	21.675	144	0.151		
Total	85.507	145			
2 Regression	107.958	3	35.986	378.80	.000 ^c
Residual	13.622	142	0.095		
Total	121.58	145			

a. Dependent Variable: Project Implementation

b. Predictors: (Constant), project management practices

c. Predictors: (Constant), project management practices, government regulation, Interaction

Beta Coefficients

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error			
(Constant)	1.387	.194		7.163	.000
1 project management practices	.608	.050	.580	12.260	.000
(Constant)	3.876	1.009		3.841	.000
project management practices	.220	.067	.782	3.284	.002
2 government regulation	.325	.048	.310	6.748	.000
Interaction (X*M)	.283	.065	1.661	4.357	.000

a. Dependent Variable: Project Implementation

4.10 Discussion of Key Findings

This section discusses the key findings of the study in relation to each specific objective. For each objective, the finding is restated, interpreted through the theory that underpinned the study, and compared with the empirical literature reviewed in Chapter Two, in order

to establish whether the present findings converge with or diverge from prior research and to explain the observed patterns.

4.10.1 Project Planning and Implementation of County-Funded Road Projects

The first objective sought to establish the relationship between project planning and the implementation of county-funded road projects. The study found a strong, positive and statistically significant relationship ($r = 0.836$; $\beta = 0.159$, $p = 0.004$), and the first null hypothesis was therefore rejected. This implies that improvements in project planning — needs assessment, scope definition, risk planning, budgeting and scheduling — are associated with better implementation of road projects. The finding is anchored in the Resource-Based View, which regards planning capability as a valuable and rare organisational resource that translates into superior performance, and it is consistent with the empirical literature reviewed in Chapter Two that links sound planning to project success (Kyalo & Kising'u, 2024; Kabiti & Kikwatha, 2022). It is noteworthy, however, that planning recorded the smallest regression coefficient among the four practices, suggesting that in this devolved-roads context the capacity to execute plans matters more than the plans themselves — a theme developed in the sections that follow.

4.10.2 Project Team Management and Implementation of County-Funded Road Projects

The second objective assessed the relationship between project team management and implementation. A strong, positive and significant relationship was established ($r = 0.845$; $\beta = 0.232$, $p = 0.003$), leading to the rejection of the second null hypothesis. Project team management emerged as the strongest predictor of implementation among the four practices, indicating that a competent, well-coordinated team contributes most to successful delivery. This finding aligns closely with the Resource-Based View, which holds that skilled human capital is a strategic, difficult-to-imitate resource underpinning superior performance, and it echoes prior studies associating team competence with

project success (Wanjau, Namusonge & Lango, 2024). Its practical significance is considerable: the County obtains the greatest marginal return from investing in the competence and management of the people who plan, supervise and deliver the road projects.

4.10.3 Project Monitoring and Evaluation and Implementation of County-Funded Road Projects

The third objective determined the relationship between project monitoring and evaluation and implementation. The study established a strong, positive and significant relationship ($r = 0.854$; $\beta = 0.216$, $p = 0.006$), and the third null hypothesis was rejected. This finding is underpinned by Goal-Setting Theory, which posits that continuous tracking of progress against clearly defined goals sustains effort and directs behaviour toward the desired outcomes. It is consistent with the reviewed literature linking regular progress reporting, supervision and rapid assessment to timely, on-budget and quality delivery (Njeru & Kirui, 2022), and it reinforces the practical point that disciplined monitoring converts good plans and competent teams into results by detecting and correcting deviations early.

4.10.4 Project Stakeholder Involvement and Implementation of County-Funded Road Projects

The fourth objective examined the relationship between project stakeholder involvement and implementation. The findings showed a strong, positive and significant relationship ($r = 0.856$; $\beta = 0.196$, $p = 0.005$), and the fourth null hypothesis was rejected; indeed, stakeholder involvement recorded the strongest zero-order correlation with implementation among the four practices. This result is anchored in Stakeholder Theory, which holds that identifying, engaging and balancing the interests of affected parties enhances legitimacy, cooperation and project outcomes. It is consistent with prior research emphasising community engagement, information-sharing, expectation surveys and joint problem-solving in the delivery of public projects (Julien, Silas & Mutisya, 2025), and it

underscores that road projects delivered with, rather than merely for, their beneficiaries are more likely to succeed.

4.10.5 Moderating Effect of Government Regulation

The fifth objective determined the moderating effect of government regulation on the relationship between project management practices and implementation. The hierarchical regression showed that adding government regulation and the interaction term raised the explained variance from 33.6% to 56.8% — a significant change of 23.2% ($\Delta R^2 = 0.232$; interaction $\beta = 0.283$, $p < 0.001$) — leading to the rejection of the fifth null hypothesis. Government regulation therefore significantly moderates, and strengthens, the relationship between project management practices and successful implementation. Because the interaction is significant while the direct effects also remain significant, the moderation is partial: the practices retain their own influence, but their pay-off is amplified where the regulatory environment — infrastructure financing, government policy and enforced construction standards — is supportive. This finding is anchored in Institutional Theory, and its integration of an internal-resource perspective with an institutional one constitutes the study's principal theoretical contribution, which is developed further in Chapter Five.

Taken together, the findings demonstrate that all four project management practices significantly and positively influence the implementation of county-funded road projects, and that government regulation conditions the strength of this influence. The four practices jointly explain 73.9% of the variation in implementation ($R^2 = 0.739$), a substantially higher explanatory power than that typically reported in single-practice studies, underscoring the value of examining the practices as an integrated set operating within their regulatory environment.

4.11 Hypothesis Testing

Hypothesis testing was conducted to determine whether the independent variables have a statistically significant effect on the dependent variable. The study tested hypotheses derived from the research objectives and theoretical framework using inferential statistical analysis. Specifically, the F-test was employed to assess whether variations in each explanatory variable significantly explain changes in the dependent variable.

The decision rule for hypothesis testing was based on a comparison between the calculated F-statistic (F-calculated) and the critical F-value (F-critical) at the 5 percent level of significance ($\alpha = 0.05$). Where the calculated F-value exceeded the critical F-value, the null hypothesis was rejected, indicating a statistically significant effect. Conversely, where the calculated F-value was less than the critical value, the null hypothesis would fail to be rejected.

Table 4.21: Hypothesis Testing

Hypothesis testing	F-Critical	F-Calculated	Verdict
Project Planning	3.907	268.25	Rejected
Project team management	3.907	310.05	Rejected
Project Monitoring and Evaluation	3.907	229.96	Rejected
Project Stakeholder Involvement	3.907	239.65	Rejected
Government Regulation	3.907	378.80	Rejected

4.12 Optimal Model

From the coefficients in hypothesis testing, the following regression model was fitted;

$$Y = 1.481 + 0.433 X_1 + 0.479 X_2 + 0.469 X_3 + 0.411 X_4$$

Where

Y is implementation of county-funded road projects in Uasin Gishu County;

X_1 is; Project Planning

X_2 is; Project Team Management

X_3 is Project Monitoring and Evaluation;

X_4 is Project Stakeholder Involvement

Since Project Team Management had the highest effect followed by Project Monitoring and Evaluation, Project Planning and Project Stakeholder Involvement, the revised Conceptual framework is as shown below

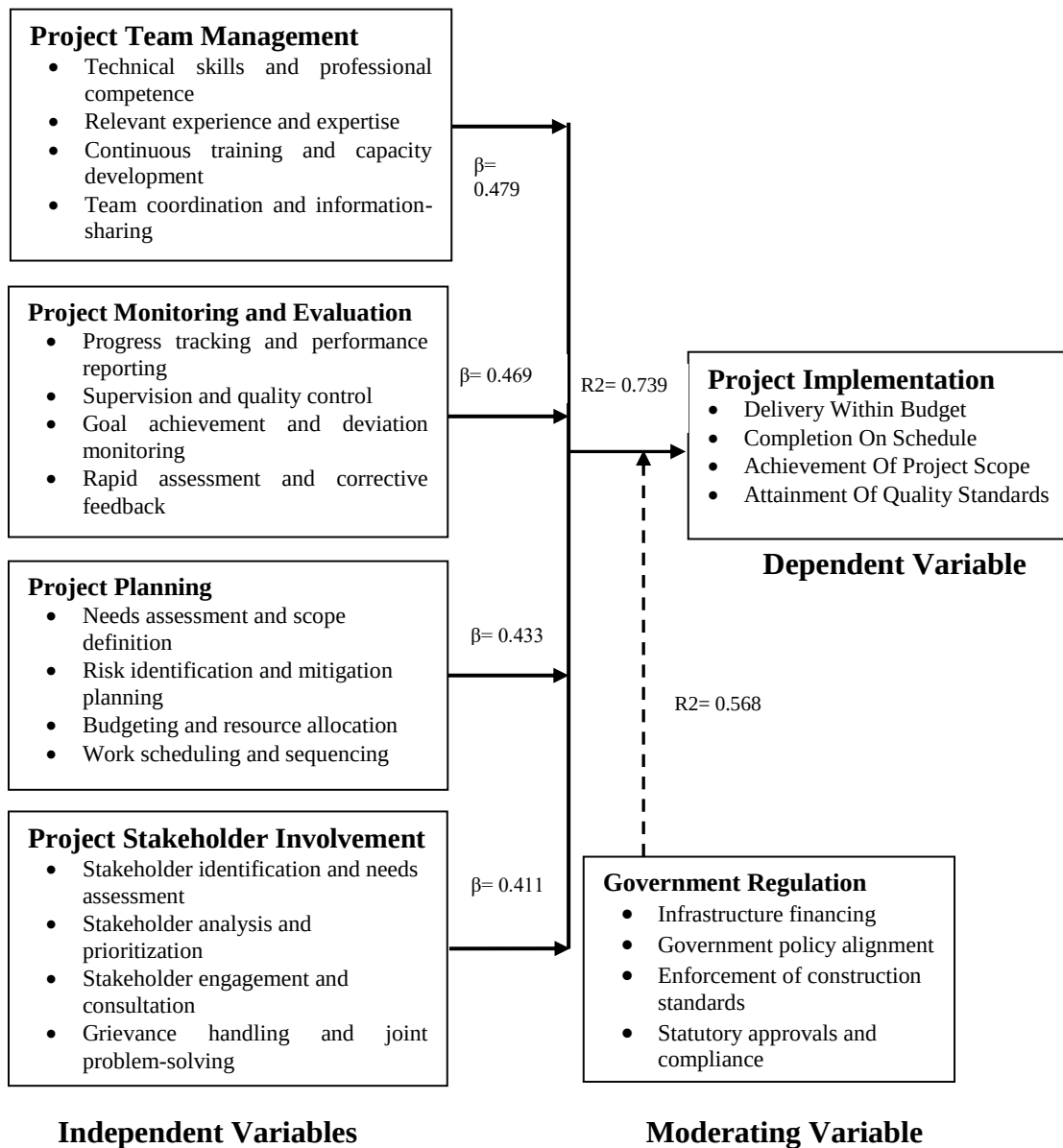


Figure 4.8: Revised Conceptual Framework

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

The chapter presents the summary, conclusion, and recommendations of the study as per the study hypothesis. The general objective of this study was to examine the influence of project management practices in implementing county-funded road projects in Uasin Gishu County in Kenya.

5.2 Summary of Findings

The study presents a summary of the findings based on its specific objectives. The study was guided by the following specific objectives; to establish the relationship between project planning and implementation of county-funded road projects in Uasin Gishu County, to assess the relationship between project team management and implementation of county-funded road projects in Uasin Gishu County, to determine the relationship between project monitoring and evaluation and implementation of county-funded road projects in Uasin Gishu County, to find out the relationship between project stakeholder involvement and implementation of county-funded road projects in Uasin Gishu County and to determine the moderating effect of government regulation on implementation of county-funded road projects in Uasin Gishu County.

5.2.1 Project Planning and Implementation of County-funded Road Projects

The study found that project planning has a positive and significant influence on implementation of county-funded road projects in Uasin Gishu County. The respondents agreed that the project plan defines the beneficiaries clearly and indicates the influence of every stakeholder in project implementation (scope) ($M= 3.992$, $SD= 0.375$). In addition, the respondents agreed that road projects completed in Uasin Gishu County are

implemented by personnel that have the capacity to design, supervise, monitor & evaluate road projects without professional negligence (M= 3.992, SD= 0.375). Further, the respondents agreed that the project plan shows how the risks will be dealt with if they occur (M= 3.899, SD= 0.377). The respondents agreed that conducting a needs assessment is important in ensuring project goals are achieved (M= 3.873, SD= 0.362).

From the results, the respondents agreed that active stakeholder planning and considering communication channels, helps to build and manage stakeholder relationships (M= 3.866, SD= 0.338). In addition, the respondents agreed that the project budget should provide a clear and adequate provision for various project activities (M= 3.787, SD= 0.345). The respondents also approved that preparing a work schedule well has ensured effective project implementation (M= 3.748, SD= 0.361).

5.2.2 Project Team Management and Implementation of Road Projects

The study found that project team management has a positive and significant influence on the implementation of county-funded road projects in Uasin Gishu County. The respondents agreed that project team members take ownership of project goal (M= 3.915, SD= 0.365). In addition, they agreed that involving the project team in planning and designing a project ensures that project tasks are performed within the stipulated time, quality, and within the budget (M= 3.961, SD= 0.406). Further, the respondents agreed that rewarding individual or team accomplishments improves project performance (M= 3.856, SD= 0.421). The respondents agreed that the project team identifies problems that may hinder implementation and finds solutions (M= 3.994, SD= 0.407).

From the results, the respondents agreed that the project clarifies individual responsibility and performance standards (M= 3.955, SD= 0.429). In addition, the respondents agreed that there are clear channels of passing information to project team members (M= 3.836, SD= 0.391). The respondents also agreed that there is free information sharing within project team members (M= 3.994, SD= 0.366).

The respondents concluded that individual talents, experience and skills of team members are used for the benefit of the project ($M = 3.831$, $SD = 0.397$). In addition, they agreed that team members are assigned tasks in areas where they have best knowledge ($M = 3.811$, $SD = 0.871$). Further, the respondents approved that there is free exchange of ideas within the project team ($M = 3.786$, $SD = 0.943$). The respondents agreed that project managers know the application of tools and techniques in performing project activities ($M = 3.754$, $SD = 0.876$).

5.2.3 Project Monitoring, Evaluation, and Implementation of Road Projects

The study established that project monitoring and evaluation have a positive and significant influence on the implementation of county-funded road projects in Uasin Gishu County. The findings indicate that respondents agreed that project coordinators consistently reported project progress to senior management ($M = 3.997$, $SD = 0.337$). Additionally, respondents agreed that supervisors ensured planned County Road project activities were implemented according to schedule ($M = 3.988$, $SD = 0.406$). They further agreed that project managers monitored the achievement of intended goals and objectives and reported any deviations where necessary ($M = 3.975$, $SD = 0.311$).

The respondents agreed that monitoring plans are effectively applied in county road construction activities ($M = 3.961$, $SD = 0.467$). Additionally, they agreed that monitoring practices are used to guide program scheduling ($M = 3.902$, $SD = 0.332$). Further, respondents indicated that rapid assessments are incorporated into monitoring plans applied in project implementation ($M = 3.902$, $SD = 0.332$).

5.2.4 Project Stakeholder Involvement and Implementation of Road Projects

The study established that project stakeholder involvement has a positive and significant influence on the implementation of county-funded road projects in Uasin Gishu County. The findings show that respondents agreed that project managers effectively shared key

information with all stakeholders ($M = 3.961$, $SD = 0.387$). Additionally, respondents agreed that the needs of project beneficiaries were clearly identified to support effective implementation ($M = 3.955$, $SD = 0.319$). They further agreed that actions arising from stakeholder interests were integrated into final decisions ($M = 3.902$, $SD = 0.367$). Finally, respondents indicated that solutions to road project challenges were jointly identified in collaboration with other stakeholders ($M = 3.836$, $SD = 0.325$).

The results indicate that respondents agreed that surveys to determine stakeholder expectations were conducted prior to project implementation ($M = 3.836$, $SD = 0.333$). Additionally, respondents agreed that established mechanisms exist for stakeholders to raise concerns regarding the project ($M = 3.836$, $SD = 0.356$). They also agreed that the community provides full support for the project ($M = 3.830$, $SD = 0.352$). Further, respondents indicated that project managers collaborate with local communities to create opportunities for meaningful participation in project activities ($M = 3.803$, $SD = 0.337$).

5.2.5 Government Regulation and Implementation of Road Projects

The study established that government regulation has a positive and significant moderating effect on the relationship between project management practices and the implementation of county-funded road projects in Uasin Gishu County. The findings indicate that respondents agreed that government policies and regulations play a critical role in supporting the planning and execution of county-funded road projects ($M = 3.921$, $SD = 0.342$). Additionally, respondents agreed that the timely completion of road projects largely depends on the availability of adequate funding ($M = 3.919$, $SD = 0.303$). They further agreed that positive outcomes in road project implementation are associated with well-aligned government policies ($M = 3.902$, $SD = 0.332$). However, respondents also acknowledged that bureaucratic barriers and regulatory complexities may hinder the smooth progress of road projects ($M = 3.888$, $SD = 0.315$).

The results indicate that respondents agreed that quality assurance measures are in place to monitor materials and workmanship in road projects ($M = 3.868$, $SD = 0.316$). Additionally, respondents agreed that promptly addressing deviations from construction standards helps ensure the quality and integrity of road projects ($M = 3.802$, $SD = 0.332$). They further agreed that strict adherence to construction standards positively influences the longevity and performance of road infrastructure ($M = 3.786$, $SD = 0.356$). Finally, respondents indicated that contractors and project teams are expected to possess a thorough understanding of applicable construction standards ($M = 3.751$, $SD = 0.339$).

5.3 Conclusions

The study conclusions were guided by the findings of the study and were presented in line with the objectives of the study.

5.3.1 Project Planning

The first null hypothesis test was ‘Project planning has no significant influence on implementation of county-funded road projects in Uasin Gishu County. The study found that project planning is statistically significant in explaining the implementation of county-funded road projects in Uasin Gishu County. The influence was found to be positive. This means that unit improvements in project planning would lead to greater success in implementing county-funded road projects in Uasin Gishu County. Based on the findings, the study concluded that project planning positively and significantly influences the implementation of county-funded road projects in Uasin Gishu County.

5.3.2 Project Team Management

The second null hypothesis test was ‘project team management has no significant influence on implementation of county-funded road projects in Uasin Gishu County. The study found that project team management is statistically significant in explaining the implementation of county-funded road projects in Uasin Gishu County. The influence was

found to be positive. This means that unit improvement in project team management would lead to an increase in the implementation of county-funded road projects in Uasin Gishu County. Based on the findings, the study concluded that project team management positively and significantly influences the implementation of county-funded road projects in Uasin Gishu County.

5.2.3 Project Monitoring and Evaluation

The third null hypothesis test was ‘project monitoring and evaluation has no significant influence on implementation of county-funded road projects in Uasin Gishu County. The study found that project monitoring and evaluation is statistically significant in explaining the implementation of county-funded road projects in Uasin Gishu County. The influence was found to be positive. This means that unit improvement in project monitoring and evaluation would lead to an increase in the implementation of county-funded road projects in Uasin Gishu County. Based on the findings, the study concluded that project monitoring and evaluation positively and significantly influences implementation of county-funded road projects in Uasin Gishu County.

5.3.4 Project Stakeholder Involvement

The fourth null hypothesis test was ‘project stakeholder involvement has no significant influence on implementation of county-funded road projects in Uasin Gishu County. The study found that project stakeholder involvement is statistically significant in explaining the implementation of county-funded road projects in Uasin Gishu County. The influence was found to be positive. This means that unit improvement in project stakeholder involvement would lead to an increase in the implementation of county-funded road projects in Uasin Gishu County. Based on the findings, the study concluded that project stakeholder involvement positively and significantly influences the implementation of county-funded road projects in Uasin Gishu County.

5.3.5 Government Regulation

The fifth research hypothesis tested was that ‘Government regulation has no significant moderating effect on the influence of implementation of county-funded road projects in Uasin Gishu County. The study revealed that government regulation is statistically significant in explaining the implementation of county-funded road projects in Uasin Gishu County. It was also found that the interaction between Government regulation and project management practices had a positive, statistically significant effect on the implementation of county-funded road projects in Uasin Gishu County. Based on the findings, the study concludes that Government regulation has a significant moderating effect on the influence of implementation of county-funded road projects in Uasin Gishu County.

5.4 Recommendations

5.4.1 Recommendations of Policy and Practice

5.4.1.1 Project Planning

Uasin Gishu County should allocate deliberate resources and effort to strengthening its project-planning methodologies for road projects. This should include structured training programmes for project planners, the adoption of advanced planning tools and technologies, and stronger collaboration among the departments and stakeholders involved at the design stage. The County should institutionalize comprehensive needs assessment, clear scope definition, realistic budgeting and scheduling, and systematic risk planning as standard requirements before any project commences. Because the study found that planning, while significant, recorded the smallest effect among the four practices, the County should pay particular attention to translating plans into action, ensuring that well-prepared plans are matched by the capacity to execute them, so that sound planning consistently yields timely, on-budget and quality delivery.

5.4.1.2 Project Team Management

Uasin Gishu County should prioritise initiatives to build the competence of its project teams, since team management emerged as the strongest predictor of successful implementation in this study. This should involve specialised and continuous training in project planning, risk management, communication and the use of modern project-management tools, as well as competitive recruitment and retention of skilled personnel. The County should foster a collaborative, interdisciplinary approach in which engineers, supervisors and support staff work as a coordinated unit, and should invest in leadership development to nurture future project managers from within. Given that the County obtains the greatest marginal return from investing in its people, allocating resources to team competence and effective team management should be treated as a strategic priority rather than a routine administrative function.

5.4.1.3 Project Monitoring and Evaluation

Uasin Gishu County should develop and implement a standardised monitoring and evaluation system that allows for regular assessment of project progress, early identification of challenges, and timely, evidence-based decision-making. This should include leveraging technology for real-time data collection, instituting periodic project reviews, and ensuring that performance metrics are aligned with project objectives, budgets and timelines. Adequate baseline surveys should be conducted at inception to set realistic expectations for time, cost and quality. The County should further incorporate community engagement and feedback mechanisms into the monitoring process, so that beneficiaries contribute to assessing project impact. By embedding disciplined monitoring and independent evaluation into the project cycle, the County can detect and correct deviations early and convert competent teams and sound plans into completed roads.

5.4.1.4 Project Stakeholder Involvement

Uasin Gishu County should create and formalise channels for effective communication, collaboration and participation among all key stakeholders, including local communities, government agencies, contractors and project beneficiaries. The County should develop a comprehensive stakeholder-engagement plan that identifies and involves relevant parties at every stage of the project, thereby fostering ownership, transparency and shared responsibility. This entails conducting regular consultations, public participation forums and structured feedback sessions to gather input, manage expectations and address concerns before they escalate into disputes or delays. Because stakeholder involvement recorded the strongest correlation with implementation, the County should treat genuine engagement not as a formality but as a core delivery practice, ensuring that road projects are delivered with, rather than merely for, the communities they are intended to serve.

5.4.2 Recommendations for Further Studies

This study was confined to examining the influence of selected project management practices on the implementation of county-funded road projects in Uasin Gishu County, Kenya. While its findings make a clear contribution to knowledge, they also open several avenues that future research could productively pursue.

First, because the study was limited to a single sector, its findings may not be directly generalizable to other types of public projects. Future studies are recommended in sectors such as health, education, water and energy infrastructure, so as to allow cross-sectoral comparison and to establish whether the four practices exert a similar influence where the technical and institutional demands differ. Such comparison would help determine how far the present conclusions extend beyond road construction.

Second, the study was confined to one devolved unit. Comparative, multi-county research covering several county governments would strengthen the external validity of the

findings and reveal whether differences in county capacity, resources and governance shape the practice–implementation relationship. A nationwide study would be especially valuable in generating conclusions that are generalizable across Kenya's forty-seven counties and in informing national policy on devolved project delivery.

Third, the four practices examined here jointly explained 73.9 per cent of the variation in implementation, leaving an unexplained variance of 26.1 per cent. This residual points to other critical factors that future research should investigate, such as project risk management, procurement and contract management, financial management, leadership style, political goodwill and the adoption of project-management technology. Identifying and testing these additional determinants would produce a fuller model of what drives successful implementation of county-funded projects.

Fourth, government regulation was adopted as the sole moderating variable in this study. Subsequent research may consider alternative moderators, for example organizational culture, contractor capacity, stakeholder power or the wider institutional and legal framework, to further illuminate the contextual conditions under which sound management practices translate into delivery. Studies could also explore mediating mechanisms, examining the intervening processes through which the practices produce their effects rather than treating the relationships as purely direct.

Fifth, the study relied principally on a cross-sectional survey and on the perceptions of project personnel gathered at a single point in time. Future research could adopt longitudinal designs that track projects across their life cycle, thereby capturing how the influence of each practice evolves over time and offering stronger evidence on the direction of causality. Complementing self-reported data with objective project records, budgets, completion certificates, audit reports and independent quality assessments, would further enhance the reliability and depth of the evidence.

Sixth, this study was largely quantitative. A mixed-methods approach that combines statistical analysis with qualitative interviews and case studies would add explanatory depth, helping to uncover the practical realities, stakeholder experiences and institutional dynamics that numbers alone cannot fully convey. Broadening the respondent base to include contractors, community beneficiaries and oversight bodies, alongside county technical staff, would also enrich future findings.

Addressing these gaps will not only deepen theoretical understanding of project implementation under devolution but also provide policymakers and practitioners with more comprehensive, context-sensitive insights for improving the effectiveness, sustainability and accountability of county-funded development projects. In this way, future scholarship can build cumulatively on the present study and contribute to more successful delivery of public infrastructure across Kenya's devolved system of government.

5.6 Contribution to Knowledge

The study makes empirical, theoretical and methodological contributions to the body of knowledge on project management and the implementation of county-funded road projects.

5.6.1 Empirical Contribution

Empirically, this study is among the first to test an integrated model of the four project management practices: project planning, project team management, project monitoring and evaluation, and project stakeholder involvement and together with government regulation as a moderating variable, on the implementation of county-funded road projects in Uasin Gishu County. Whereas much prior Kenyan evidence examined the practices individually and in national-agency, donor-funded or private-sector settings, for instance, Kyalo and Kising'u (2024) and Kabiti and Kikwatha (2022) on planning in rural-roads

projects, Wanjau, Namusonge and Lango (2024) on team planning in housing, Njeru and Kirui (2022) on monitoring and evaluation in national highways, and Nyandika and Ngugi (2019) and Julien, Silas and Mutisya (2025) on stakeholder involvement, the present study assessed all four simultaneously within a single devolved-county context. The four practices jointly explained 73.9 per cent of the variation in implementation ($R^2 = 0.739$), a markedly higher explanatory power than that typically reported in single-practice studies, and each emerged as a significant predictor in the fitted model:

$$Y = 1.481 + 0.159X_1 + 0.232X_2 + 0.216X_3 + 0.196X_4$$

where X_1 – X_4 denote planning, team management, monitoring and evaluation, and stakeholder involvement respectively. The results also help reconcile mixed findings: whereas Julien, Silas and Mutisya (2025) reported a positive but non-significant effect of stakeholder involvement, this study found it significant and, indeed, the most strongly correlated practice. By quantifying which practices most strongly drive delivery and by how much, the study extends the empirical base built by Mwanza, Namusonge and Makokha (2020) and Kavishe and Chileshe (2018) to the county-funded roads context.

5.6.2 Theoretical Contribution

Theoretically, the study draws on and advances five complementary theories that underpinned its variables. The Resource-Based View (Wernerfelt, 1984) framed project planning and project team management as valuable, rare organisational resources; Goal-Setting Theory (Locke, 1979) underpinned monitoring and evaluation; Stakeholder Theory (Freeman, 1984) grounded stakeholder involvement; Institutional Theory (Scott, 2004; North, 1990; Williamson, 1985) informed the treatment of government regulation; and Contingency Theory (Lawrence & Lorsch, 1967) provided the logic for moderation, holding that the effectiveness of a management practice is conditional upon its context. The study's principal theoretical contribution is to establish a boundary condition on the central claim of the Resource-Based View. Whereas that perspective holds that internal

resources and capabilities drive performance, the present findings show that such resources are necessary but not sufficient: their pay-off is contingent on the external regulatory environment, as evidenced by the significant moderating effect of government regulation ($\Delta R^2 = 0.232$; interaction $\beta = 0.283$, $p < 0.001$). In demonstrating this, the study bridges the Resource-Based View with Institutional Theory, two perspectives usually treated separately, offering a more complete explanation of project implementation in which internal management practice and the external institutional environment operate together rather than in isolation. Consistent with Contingency Theory, the strength of the practice -implementation relationship was shown to depend on the supportiveness of the regulatory framework, while Goal-Setting and Stakeholder theories were reinforced by situating monitoring and stakeholder engagement within a single, empirically tested model. In so doing, the study responds to calls to combine internal-resource and institutional lenses and contributes a devolved-government, sub-Saharan illustration of how these established management theories operate within a distinct regulatory and administrative setting.

5.6.3 Methodological Contribution

Methodologically, the study makes three contributions. First, conducted within the positivist tradition using a descriptive and correlational survey design, it operationalised each construct through a validated and reliable multi-item instrument covering the four practices, the moderator and implementation in the county-roads context; the instrument's reliability and validity were confirmed prior to analysis, providing a tested measurement tool that future studies of devolved infrastructure can adopt and replicate. Second, the study demonstrates a rigorous sampling and estimation procedure: a stratified random sample was drawn across the county's departments, with the sample size determined using Yamane's (1967) formula, ensuring representativeness and generalisability. Third, and most distinctively, the study contributes a moderated, interaction-based regression approach, rarely applied to county road delivery, that explicitly tests the conditioning role of the regulatory environment. Using hierarchical (stepwise) regression, the four practices

were combined into a composite predictor (X), after which the moderator (M) and the interaction term (X×M) were introduced, yielding the fitted moderated model:

$$Y = 3.876 + 0.220X + 0.325M + 0.283(X \times M)$$

where X is project management practices, M is government regulation and X×M is their interaction. The significant interaction coefficient (0.283), together with the rise in explained variance between the nested models ($\Delta R^2 = 0.232$), provided statistical evidence of moderation. This analytical template, composite predictor, moderator and interaction term tested across nested models, offers subsequent researchers a replicable method for examining not only whether project management practices influence implementation, but the conditions under which that influence is strengthened or weakened, moving the field beyond single-practice, direct-effect designs toward integrated, moderated models.

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APPENDICES

Appendix I: Letter of Introduction

Date.....

Dear Respondent,

RE: VOLUNTARY PARTICIPATION IN RESEARCH DATA COLLECTION

RE: REQUEST TO CONDUCT RESEARCH

My name is Julius Kipketer Leley, a student at Jomo Kenyatta University of Agriculture and Technology, undertaking a PhD in Project Management. I am conducting a study entitled ***“Project Management Practices and Implementation of County-Funded Road Projects in Uasin Gishu County, Kenya.”*** The aim of this survey is to obtain your valued feedback and views on the various strategies in use, or that can be adopted to enhance project performance. The data collected is for research purposes only. All responses received are anonymous and information collected will not be distributed to any other party.

Thank You.

Julius Kipketer Leley,

PhD Student, JKUAT.

Appendix II: Questionnaire

TITLE: Project Management Practices and implementation of county-funded road projects in Uasin Gishu County, Kenya.

Kindly tick the most appropriate answer (s) or fill in the information required. Your response will go a long way in making this study a success. This information will be treated with utmost confidence and will be used for the purposes of research only.

SECTION A: Background Information

Name of the Respondent.....

Level of Education.....

How long have you worked for Uasin Gishu County? Less than 1 Year { } 1-3 years{ }
iii. 4-7 years { } iv. 8-10 years { } v. More than 10 years { }

SECTION B: Project Planning and implementation of Projects

Indicate the extent to which you agree with the following statements in relation to the influence of project planning on implementation of county-funded road projects in Uasin Gishu County. The following scale will be applicable: 5= **Strongly Agree** 4= **Agree** 3= **Neutral** 2= **Disagree** 1= **Strongly Disagree**

No.	Project Planning	1	2	3	4	5
1.	The project plan defines the beneficiaries clearly and indicates the role of every stakeholder in project implementation (scope).					

2.	Road projects completed in Uasin Gishu County are implemented with personnel that has the capacity to design, supervise, monitor & evaluate road projects without professional negligence					
3.	The project plan shows how the risks will be dealt with if they occur					
4.	Carrying out a needs assessment is important in ensuring project goals are achieved					
5.	Active planning for stakeholders through consideration of communication channels help to build and control stakeholder relationships					
6.	The project budget should provide a clear and adequate provision for various project activities					
7.	Preparing work schedule well has ensure effective project implementation					

Other than the above stated factors, advise on other project planning aspects affecting implementation of county-funded road projects in Uasin Gishu County.

- a) _____
- b) _____
- c) _____
- d) _____

SECTION C: Project Team Management and implementation of Projects

Indicate the extent to which you agree with the following statements in relation to the influence of project team management on implementation of county-funded road projects in Uasin Gishu County. The following scale will be applicable: **5= Strongly Agree 4= Agree 3= Neutral 2= Disagree 1= Strongly Disagree**

No.	Project Team Management	1	2	3	4	5
1.	Project team members take ownership of project goal					
2.	Involving the project team in planning and designing of a project ensures that project tasks are performed within the stipulated time, quality and within the budget.					
3.	Rewarding of individual or team accomplishments improves project performance					
4.	The project team identifies the problems that may hinder the implementation and find solutions					
5.	The project clarifies individual responsibility and performance standards					
6.	There are clear channels of passing information to project team members					
7.	There is free information sharing within project team members					
8.	Individual talents, experience and skills of team members are used for the benefit of the project					
9.	Team members are assigned tasks in areas where they have best knowledge					
10.	There is free exchange of ideas within the project team					
11.	Project managers know the application of tools and techniques in performing project activities					

Other than the above stated factors, advise on other project team management aspects affecting implementation of county-funded road projects in Uasin Gishu County.

- a) _____
- b) _____
- c) _____
- d) _____

SECTION D: Project Monitoring and Evaluation and implementation of Projects

Indicate the extent to which you agree with the following statements in relation to the influence of project monitoring and evaluation influence implementation of county-funded road projects in Uasin Gishu County. The following scale will be applicable: 5= Strongly Agree 4= Agree 3= Neutral 2= Disagree 1= Strongly Disagree

No.	Project Monitoring and Evaluation	1	2	3	4	5
1.	The project coordinators regularly report the progress of the project to senior management.					
2.	The supervisors ensured that the planned County Road project activities are all done as per plan					
3.	The project managers ensured that the intended goals and objectives are being achieved and report any deviation.					
4.	Monitoring plans are well applicable in county road construction activities					
5.	Monitoring practices on scheduling the program are used					
6.	Rapid assessment is conducted in monitoring plans used in projects					

Other than the above stated factors, advise on other project monitoring and evaluation aspects affecting implementation of county-funded road projects in Uasin Gishu County.

- a) _____
- b) _____
- c) _____
- d) _____

SECTION E: Project Stakeholder Involvement and implementation of Projects

Indicate the extent to which you agree with the following statements in relation to the influence of project stakeholder involvement on implementation of county-funded road projects in Uasin Gishu County. The following scale will be applicable: **5= Strongly Agree 4= Agree 3= Neutral 2= Disagree 1= Strongly Disagree**

No.	Project Stakeholder Involvement	1	2	3	4	5
1.	Project Manager passes key information to all stakeholders					
2.	The needs of project beneficiaries are clearly identified for the proper implementation					
3.	Changed actions based on interests which occurred were integrated into final actions					
4.	We have jointly with other stakeholders identified solutions of the road project					
5.	Survey to determine stakeholder expectations was done before implementation of the project					
6.	There are established means for stakeholders to raise concerns about the project					
7.	There is total support for the project from the community					

8.	Project managers work with local people to create opportunities for local people to participate meaningfully in project activities					
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Other than the above stated factors, advise on other project stakeholder involvement aspects affecting implementation of county-funded road projects in Uasin Gishu County.

- a) _____
- b) _____
- c) _____
- d) _____

SECTION G: Government Regulations

Indicate the extent to which you agree with the following statements in relation to government regulations and implementation of county-funded road projects in Uasin Gishu County. The following scale will be applicable: 5= **Strongly Agree** 4= **Agree** 3= **Neutral** 2= **Disagree** 1= **Strongly Disagree**

No.	Government Regulations	1	2	3	4	5
1.	Government policies and regulations play a pivotal role in facilitating the planning and execution of county-funded road projects					
2.	Timely completion of road projects significantly relies on the availability of sufficient funding.					
3.	Positive impacts on road project implementation can be attributed to well-aligned government policies.					
4.	Bureaucratic hurdles and regulatory complexities can impede the smooth progress of road projects.					

5.	Quality assurance measures are in place to monitor materials and workmanship in road project					
6.	Addressing deviations from construction standards promptly ensures the quality and integrity of road projects.					
7.	Stricter adherence to construction standards positively impacts the longevity and performance of road infrastructure					
8.	Contractors and project teams are expected to maintain a thorough understanding of relevant construction standards					

Other than the above stated factors, advise on other Government Regulations aspects affecting implementation of county-funded road projects in Uasin Gishu County.

- a) _____
- b) _____
- c) _____

SECTION G: Implementation of Projects

Indicate the extent to which you agree with the following statements in relation to implementation of county-funded road projects in Uasin Gishu County. The following scale will be applicable: 5= **Strongly Agree** 4= **Agree** 3= **Neutral** 2= **Disagree** 1= **Strongly Disagree**

No.	Implementation of Projects	1	2	3	4	5
1.	Our project has achieved its purpose					

2.	Money set aside at the start of our project was used as proposed					
3.	There is improved economic status of the local community					
4.	Projects comply with safety and environmental regulations					
5.	Projects focus on satisfaction of the general public					
6.	Projects are finished within time, cost and quality constraint					
7.	Concluded projects meet the required scope and quality					
8.	Seeking projects feedbacks from stakeholders improves performance					

Appendix III: NACOSTI Approval Permit



REPUBLIC OF KENYA

Ref No: 842111

RESEARCH LICENSE



This is to Certify that Mr. JULIUS LELEY KIPKETER of Jomo Kenyatta University of Agriculture and Technology, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Uasin-Gishu on the topic: **PROJECT MANAGEMENT PRACTICES AND IMPLEMENTATION OF COUNTY FUNDED ROAD PROJECTS IN UASIN GISHU COUNTY, KENYA** for the period ending : 25/August/2024.

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See overleaf for conditions

Appendix IV: List of Roads

Roads	
1. Langas Blocks 2, 3, 4, 5 & 6 (Langas Ward)	2000 - 2024
2. Fortune Road (Kipkenyo Ward)	2000 - Ongoing
3. Weighbridge – Kapsaos Bridge Road (Kipkenyo Ward)	2000 - 2024
4. Berur Estate – Mokombet AIC Road (Kipkenyo Ward)	2000 - Ongoing
5. Kapseret Centre – Vini Resort Road	2000 - Ongoing
6. Simat Centre – Tartar Road (Simat/Kapseret Ward)	2000 - 2024
7. St Catherine Road (Tulwet/Chuiyat Ward)	2000 - 2024
8. Lelmokwo – Lelmolok Road (Tulwet/Chuiyat Ward)	2000 - Ongoing
9. Chepkoiya Primary School – Dip Road (Tulwet/Chuiyat Ward)	2000 - 2024
10. Kesses Dispensary Road (Tulwet/Chuiyat Ward)	2000 - Ongoing
11. Inder – Tuiyo – Mutwot Dip – Simaat Centre Road	2000 - 2024
12. Baraka Drive	2000 - 2024
13. Kuinet/Kapsuswa Ward roads	2000 - Ongoing
14. Newland – Borderlands Road	2000 - 2024
15. Blueberry – Mosombor Road	2000 - 2024
16. Lavington – Siriat Road	2000 - Ongoing
17. St James – Chepkatet – Lobo – Kermetio Road	2000 - 2024