PROJECT FACTORS INFLUENCING COMPLETION OF RURAL ROADS PROJECTS IN KENYA: A CASE OF RUMURUTI-MARALAL ROAD PROJECT IN LAIKIPIA AND SAMBURU COUNTIES

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DECLARATION

This research project report is my original work and has not been presented for an award in any other university.

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This research project report has been submitted for examination with my approval as the University Supervisor.

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DEDICATION

I dedicate this research project to my daughter, Jadyn Daniella Michugu

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ABBREVIATIONS AND ACRONYMS

ARWP	Annual Road Works Programs
CNATIE	China National Aero Technology International Engineering
CSR	Corporate Social Responsibility
CRB	California Bearing Ratio
EPC	Engineering, Procurement and Construction
FIDIC	International federation for Consulting Engineers
GDP	Gross Domestic Product
GOK	Government of Kenya
KeNHA	Kenya National Highways Authority
KERRA	Kenya Rural Roads Authority
KRB	Kenya Roads Board
KM	Kilometers
KURA	Kenya Urban Roads Authority
LATF	Local Authorities Transfer Fund
NACOSTI	National Commission for Science, Technology and Innovation
RMM	Road Maintenance Manual
SD	Standard Deviation
SSRBC	Standard Specification for Road and Bridge Construction
UK	United Kingdom
USA	United States of America
USD	United States Dollars

ABSTRACT

Road transport infrastructural projects are considered successful when delivered within the traditional iron triangle constraints. Nevertheless, the aspect of delay in the completion of roads infrastructure projects has become a critical construction challenge with a global dimension, often leading to time and cost overruns. This has attracted extensive research work to be done on the global phenomenon of construction delays, with research gaps being identified in the various project-based factors that influence completion of road infrastructure projects. The research study therefore sought to investigate Project Factors Influencing Completion of Rural Roads Project in Kenya: A case of Rumuruti - Maralal Road Project in Laikipia and Samburu Counties. The study's objectives were: To determine the influence of Stakeholders' Participation, Project Financing, Contract Management and Project Specifications on Completion of Rural Roads Projects in Kenya. The study was grounded on the Stakeholders' Theory. The study used descriptive survey research design and interviews. The study's target population was the staff of KeNHA, Rumuruti-Maralal Road Project's Contractor, and Consultant making a total of 100 respondents. Due to the study having a case of small number of the target population, the study adopted a census survey and therefore a complete enumeration of the entire 100 respondents was done. This study adopted purposive sampling and stratified random sampling. A semi structured questionnaire and an interview guide were adopted as the research instruments. The quantitative data from the questionnaires was coded by Statistical Packages for Social Scientists tool. Descriptive statistics was analyzed by the use of arithmetic means and standard deviation. Data was presented in frequencies and percentages tables. Qualitative data obtained from the interviews was transcribed content according to themes and constructs aligned to the research objectives, identifying similarities and differences that emerged during the interviews. Secondary data aligned to the research objectives was obtained from published books, scientific dissertations, peer-reviewed journals and other related scholarly publications was augmented with the primary data. Inferential statistics was analyzed by Pearson's Correlation. From the study findings on completion of rural roads projects in Kenya, the composite mean and standard deviation was found to be 3.645 and 3.321 respectively. On the theme of stakeholders' participation, the composite mean and standard deviation was found to be 3.550 and 3.229 respectively. On the theme of project financing, the composite mean and standard deviation was found to be 3.516 and 3.195 respectively. On the theme of contract management, the composite mean and standard deviation was found to be 3.280 and 2.939 respectively. On the theme of project specifications, the composite mean and standard deviation was found to be 3.418 and 3.069 respectively. From the findings the study concluded that stakeholders' participation, project financing, contract management and project specifications influence completion of rural roads projects in Kenya. The study recommended that government should ensure that stakeholders' participation in projects is comprehensive since they substantially influence or are influenced by a decision of another affecting the project activities; adequate funds should be provided to support the execution of a project in order to be successful; the use of creative contracting approached, established as a good practice leading to effective construction process and complete projects and finally, successful management of the crucial and complex interface between design and pre-construction activities should be observed since it is important in the realization of projects completed within quality, cost and timelines. Areas for further research has been given.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Construction of the transport infrastructure network accounts for a substantial portion of the gross domestic product of a country. According to Saraf (2014), the annual global value of the road construction industry is about USD 15 trillion, which represents around 60% of fixed capital creation and constitutes one of the most significant influences in the world economy, accounting for 7% of its overall employment. Road construction industry in the developing world provides a significant source of jobs for the majority of countries' people (Basheka & Tumutegyereize, 2011). Road transportation infrastructure developments are deemed successful when completed in scheduled time, allocated budget and defined quality (Owolabi, 2014). According to Gbadebo and Olalusi (2014), Implementation of road projects is influenced by a number of factors, operations and constraints incorporating scheduled or unplanned events and experiences over their lifespan and evolving stakeholders and processes in rapidly changing environments.

Delays in implementing road infrastructure development has become a critical problem with a global perspective, frequently leading to higher infrastructure costs due to scheduling extension or acceleration and lost productivity, interruption of work, loss of income through litigation between contracting parties and total abandonment of the projects, (Owolabi, 2014). Project delay in road construction is a global problem that needs to be addressed in order to develop and complete road infrastructures with project constraints. Assaf and Al-Hejji (2006) described construction project delay as the time lags beyond the date of completion defined in a contract or beyond the date agreed upon by the parties for the delivery of a construction project. According to Mohamed (2016), time overrun is the amount of time that exceeds the duration of the project's scheduled period and creates a delay in the execution of project objectives and goals. Bhalchandra (2015) argued that time overrun is the gap between the projected length required for a project's implementation and the actual time it takes to complete it. Karim and Marosszeky (2012) noted that construction delays were a matter of great concern in the transportation construction industry. Most infrastructure projects are delayed and exceed the contract amount outlined, therefore their impact on project completion is

quite large, World Bank (2014). Ramanathan, Narayanan and Idrus (2012) noted that the majority of delays in construction projects occur mostly during design process,

often times, and involving unpredictable factors. In Qatar, a 2019 Public Works Study linked delays in completing about one-third of road projects to contractors' incapacities, rise in the prices of building materials, lack of successful management by contractors, deferment of payments due to constant changes in designs and contract mismanagement, (Government of Qatar, 2019). A study was done by Toor and Ogunlana (2014) on factors causing time overruns in road construction projects in Thailand. The findings concluded that government-funded projects in the country are delayed by an average of 42 per cent for each project implementation period. They reasoned that factors such as inadequate financing, project disruption, non-confirmative allocation of resources, unreasonable contract durations slow decision-making processes, design changes, inadequate project preparation, unqualified site workforce and building material shortages have a major impact on the delay in completing road projects. In India, Vaibhav and Ghaitidak (2016) did an analysis of cost elements and schedule overrun in road construction projects and found that time and costs overrun were significant and frequent complains in the construction industry. They concluded that long land acquisition processes, weak contract mobilization and management, slow site release and preparation, project financing constraints, delay in machine and equipment supply, change of design specification scope, slow progress in construction phases and cost escalations are the challenges hindering successful completion of projects.

In Mali, Saraf (2013) noted that lack of participation by stakeholders in project planning and execution, weak site management and resource constraints were major causes of road construction delay or failure. Adnan, Sheriff and Saleh (2009) established that these factors also exist in Tanzania's road projects, emphasizing that weak project management was also a huge contributor to the challenge of road construction delays. While investigating the causes of delays in road construction projects, Aziz and Asmaa (2016) noted that the execution of road construction projects in Egypt were primarily influenced by budgetary factors such as late financial payments, delays in customer acceptance of the project, inadequate contract selection, poor project planning and preparation, on-site geological conditions, Unrealistic rates of project contracts, staffing challenges and main stakeholder quarrels. Otim and Alinaitwe (2015) noted

that majority of road construction projects in Uganda have suffered from changes in size, environmental issues and lack or shortage of resources. Muturi and Oguya (2016) research in project-factors that influence performance of public construction projects' in arid and semi-arid regions concluded that design changes and alignments, incompetence of the contractor and project financing challenges, with 82.7 percent of the

difference in the dependent variable being explained by lack of shareholders' identification, involvement and participation in project implementation phases. In Kenya, the government recognized infrastructure development as among the key drivers of the socio-economic and structural transformation in its vision 2030 agenda for sustainable development, contributing to 19.1 per cent of GDP in 2018, (Kenya Economic Report, 2019). According to Kenya National Bureau of Statistics (2017), transport infrastructure is a major component of infrastructure growth and it's at the top of the funding percentile for growth projects in Kenya, with funding calculated at least 10% of the government's budget. According to Maina (2016), despite continued and heavy expenditure by the Government of Kenya (GOK) in road construction, the problem of delays in completing road construction projects and budget overruns continues to hamper the nation's implementation of roads.

Macharia (2016) carried out a study to determine specific factors affecting the successful execution of public construction project in Nairobi's Embakasi region and listed construction resources, staff expertise and procurement processes as factors that contribute to delays in construction projects. According to Kangema-Gacharage (C70) Road Completion Report (2017), the construction of the road project completed the missing connections between the rural areas of Murang'a County and Thika and Nyeri towns. The project's implementation started in 2013 at contract price of Ksh4.112 billion, with completion set in 2015. Numerous design changes due to the mountainous terrain in the areas, financial, social and stakeholders' issues raised the road's contract price to Ksh5.131 billion, (KeNHA Report, 2017). The projected was completed in 2017, having incurred time and cost over runs.

Rumuruti-Maralal road project is a 65 kilometers (km) stage upgrade to bitumen standard project, that includes construction of box culverts and drainage works. The road project started from the rural region of Rumuruti in Laikipia County, traversing in a northerly direction to Maralal in Samburu county. 28km of the road project is located

in Laikipia county and 37km located in Samburu County. In line with the Government's commitment to provide Kenyans and the region with a stable, reliable and adequate national road network for sustainable socio-economic development; the Kenya National Highways Authority (KeNHA) embarked on the construction of this vital road in April of 2013 and was to be completed in December 2015, at a cost of Ksh2.689 billion, fully financed by Government of Kenya through the KeNHA's development vote, (KeNHA Report, 2017). The project experienced time overruns, failing to be completed within the initially stipulated 2 years of construction. In August of 2016, the project employer (KeNHA) instructed a variation order which varied

the contract price, increasing the project's contract price to Kshs3.248 billion. With 5 extensions of time claims still under investigation, the approved completion time was extended to 21st of May, 2020 (KeNHA Report, 2017). However, by August of 2020 and well past the completion deadline, the road project is still under construction, with Rumuruti- Maralal May 2020 Report indicating the most likely project completion date as June, 2021. According to the road contractor, China National Aero-Technology International Engineering Corporation (CNATIE), construction works delayed due to insecurities along the construction corridor, harsh weather conditions, increase of scope of works from 2.6km to 7.745 km, contract administration issues, pending land acquisition forcing the contractor to skip some sections of work, delayed payment to the contractor leading to suspension of works hence disruption of construction progress, unrests due to competition for the limited employment opportunities by the local communities, change in design scope due to numerous additions of town, spur and various bitumen and gravel access roads and Convid-19 related issues.

Considering the role of roads in the country's socio-economic growth, the government has gradually increased the allocation of budgets to the road sub-sector in the recent past. Nevertheless, implementation of road projects in Kenya continue to experience difficulties of execution, cost overruns and ultimately unsuccessful construction work (Maina, 2013). The researcher, therefore, investigated stakeholders' engagement, project financing, contract management and project design specification as the independent variables in the completion of rural road projects.

1.2 Statement of the Problem

The construction of Rumuruti-Maralal road project started in April of 2013 and was meant to be complemented in December of 2015, at a contract price of Ksh2.689 billion, (KeNHA Report, 2017). According to the same report, a variation order instructed by KeNHA increased the contract price from Ksh2.689 billion to Kshs3.405 billion and revised the approved completion period from December 2015 to May, 2020. In August 2020 and 5 years down the line, the road construction is still underway. CNATIE Report, (2017) cited various project challenges, which include disputes with community group ranches on extraction of construction materials from their land and demanding exorbitant prices for hiring of material sites, increase of scope of works, delayed payments to the contractor, disrupting work progress, among others, that adversely affected the road implementation. With the road project behind completion schedule and completion period still uncertain, it begged for research assessment on how the project stakeholders were engagement during implementation, determined how the project's financing affected its completion, assessed how contract management was handled, and examined how project design specification influenced project completion. Successful execution of road projects within the specified time, efficiency, quality, scope and cost is the product of the project's need to meet its intended purpose and thus recover the investment as intended, (Gbadebo & Olalusi 2014). Various factors influencing completion of roads projects have been researched on but limited studies have dwelt on stakeholders' engagement, project financing, contract management and project design specification in relation to completion of rural roads and specifically, a case of Rumuruti-Maralal road project that traverses 2 counties in Kenya. It is against this background that the researcher hoped that in addressing these factors, the success in completion of road construction projects in rural areas would be greatly enhanced.

1.3 Purpose of the Study

The purpose of the study was to investigate the Project Factors Influencing Completion of Rural Roads Projects in Kenya: A Case of Rumuruti - Maralal road project in Laikipia and Samburu Counties.

1.4 Objectives of the Study

The research study's objectives were:

1. To examine the influence of stakeholders' participation on completion of rural roads projects in Kenya
2. To assess the influence of project financing on completion of rural roads projects in Kenya
3. To determine the influence of contract management on completion of rural roads projects in Kenya
4. To determine the influence of project specifications on completion of rural roads projects in Kenya

1.5 Research Questions

The following research questions were answered by this study:

1. How does stakeholders' participation influence completion of rural roads projects in Kenya?
2. To what extent does project financing influence completion of rural roads projects in Kenya?
3. How does contract management influence completion of rural roads projects in Kenya?
4. To what extent does project specifications influence completion of rural roads projects in Kenya?

1.6 Significance of the Study

The study findings may be useful and of value to the policy makers, in influencing road transport infrastructure policies at both national and county levels. Since Kenya is geared towards massive investment in road transport development guided by the Big Four initiative, the recommendations of this study hope to contribute to the success of an efficient and extensive road transport network that connects Kenya across the counties and with the rest of African region.

It's hoped that the study findings may benefit project managers, architects, financial advisors, engineers, project developers, quantity surveyors and other construction professionals by implementing the outcomes of the findings when carrying out development projects for road transport in rural areas and contributing to sustainable transportation sector in Kenya.

The study report would be made available in all libraries, repositories and online search engines in order to add knowledge to governments, academicians, professionals, corporate bodies, NGOs and individuals in areas of road transport project planning and design, implementation, management and sustainability of local, regional, national and international

1.7 Limitations of the Study

The Covid-19 state in the country has affected and even changed organizations' operations for most government and private institutions, whereby officials and staff are working in shifts or from home. This applied to the potential respondents of this study. In order to mitigate the situation and enhance questionnaires return rate, the researcher administered questionnaires early, both physically and through emails and make prior calls before the scheduled interviews, as a reminder to and confirmation from the interviewee of the arranged data collection exercise.

Due to the many stakeholders involved in road project implementation such as Engineers, Surveyors, Architects, Project Managers, Financial Analysts and Contract Administrators and other professionals, it was hard to collect data from each and every one of them. The researcher collected data from a sample size that was believed to be representative of the entire target population of the study.

1.8 Delimitation of the Study

The research study was on the Project Factors Influencing Completion of Rural Roads Projects in Kenya: A Case of Rumuruti - Maralal road project in Laikipia and Samburu Counties. The researcher measured the relationship between stakeholders' participation, project financing contract management and project specification in relation to completion of rural roads projects in Kenya. Qualitative and quantitative research design were used for data collection. The study respondents were the staff from KeNHA, Rumuruti-Maralal road contractor and consultants and other stakeholders, making a total of 100. The study adopted a census survey and therefore a complete enumeration of the entire 100 respondents was done. Data collection instruments adopted by the study were semi-structured questionnaires and interviews. Data was coded by SPSS tool and statistical analysis done using arithmetic mean and

standard deviations. Frequencies and percentages tables were used to present the study's findings.

1.9 Basic Assumptions of the Study

The researcher made assumptions that the respondents would be available and willing to take part in the study and they would respond to the research questionnaires by giving the right and honest information. The researcher also assumed that data would be collected, analyzed and reported within the stipulated research period and finally, the study would find bearing in terms of research.

1.10 Definition of Significant Terms

Contract Management	It's the management of the general conditions of the agreement between the project employer, project contractor and any other party involved as per the provisions under clauses of agreement in relation to the implementation and completion of Rumuruti- Maralal road construction project
Project Specifications	It's the construction plan in accordance with the drawings and standard specifications, starting from Rumuruti (km0+000) to 9km35 + 000) section and the design alignment deviating from the existing road at around km9 + 700 and joins at around km42 + 750. It is also the construction design of bitumen standards of the existing road beyond km9 + 700 up to Maundu Meri market, approximately 10km from Rumuruti town.
Project Financing	It's the funding of road projects in rural areas, which are typically infrastructure heavy, capital-intensive and of public use. The sources of project financing can be the government, private parties or a combination of both.

Rural Roads	It's the road corridor that involves major works being undertaken, that includes works such as site clearance, earthworks, construction of reinforced concrete bridges, culverts and other drainage works, protection works using methods such as pitching and gabions, provision of road furniture which includes road markings and traffic signs, landscaping including top soiling and grassing.
Stakeholders' Participation	It is the process by which the road projects construction contractor, project employer and the project consultant involves people affected by the decisions made concerning the road, affecting completion of the road construction either positively or negatively.

1.11 Organization of the Study

The study has five chapters; Chapter one is the Introduction and has the following sub titles: Background of the Study; Statement of the Problem; Purpose of the Study; Objectives of the Study; Research Questions; Significance of the Study; Basic Assumptions of the Study; Limitations of the Study; Delimitation of the Study and Definitions of Significant Terms. Chapter two covers Literature Review and contains: Introduction; Theme of completion of rural roads projects in Kenya; Themes of stakeholders' participation, project financing; contract management and project specification; Theoretical Framework; Conceptual Framework; Summary of Literature Review and Knowledge Gaps Matrix. Chapter three contains the Research Methodology, consisting of an Introduction; Research Designs; Target Population; Sample Size; Sampling Procedures; Research Instruments; Data Collection Procedures; Data Analysis Techniques; Ethical Considerations and Operationalization of Variables. Chapter four has: Data Analysis, Presentation and Interpretation, with an Introduction, Questionnaire Return Rate; Demographic Profile of the Respondents and Data Presentation. Finally, Chapter five has an Introduction; Summary of findings; Discussion on findings; Conclusions; Recommendations and Suggestions for Further Studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter gives a comprehensive review of the relevant literature on the project factors influencing completion of road projects in rural areas. It consists of literature review on themes of completion of road project in rural areas and the independent variables' themes on stakeholders' participation, project financing entity, contract management and project design and specification. It has the theoretical framework which provides a theoretical foundation underpinning the study variables, conceptual framework which indicates the variables' relationship, a summary of literature review and finally, the knowledge gaps.

2.2 Completion of Rural Roads Projects in Kenya

Delays in the completion of infrastructure facilities is a critical problem with a global dimension, frequently leading to loss of production, disruption of work, loss of revenue through legal proceedings between contracting parties and abandonment of projects. Road transport projects are deemed successful when completed in scheduled time, allocated budget and defined quality (Albalate, 2014). Completion of road projects in rural areas is affected by many factors, with the challenges having far reaching effects on all stakeholders involved. Chism and Armstrong (2010) did a study in U.S.A and averred that Project companies scale down capital-building projects due to lack of resources, cost volatility and worries about possible delays that could affect the project feasibility basis. A study conducted in the UK by Fisher and Smith (2017) reported that there are contradictions in road construction between the stated objectives of the projects in terms of cost time appropriateness and quality. Turner (2018), referring to the sense of the application of the EPC contract, the value of a contractor providing a complete facility at a guaranteed price, on a guaranteed date and at the required level of performance was emphasized. The researcher further noted that failure to attain this normally results in monetary liabilities incurred by the contractor. Kilaka and Omwega (2015) noted that delayed payments to contractors for road infrastructure projects affected project execution due to problems related to the cash flow. Usually, the

contractor has a restricted right to demand additional money and is restricted to the situations in which the

project manager has postponed the contractor or ordered the job variance (Turner, 2018). Adelback and Johansson (2016) claimed in a study conducted in the Florida State that delays in construction projects are indeed a common phenomenon, almost always followed by cost and time overruns. Chen (2014) indicated that timely delivery of road projects within the budget and to the quality level defined by the customer is an index of efficient delivery of projects. Hussin and Omran (2011) lamented that the rising rate of delay in project delivery is a major criticism facing the road construction industry in Malaysia. He describes the traditional approach to handling the additional costs to include the amount of project costs in the pre-contract budget as contingency. Nabil, Zydoun and Hesham (2017) did a study on success factors influencing completion of rural roads construction in India and observed that the projects' implementation under study were not encouraging owing to time and cost overruns. Ramanathan, Narayanan and Idrus (2012) analyzed 41 analyses conducted worldwide on delays in road construction and concluded that there was an exponential rise in the amount of road projects experiencing delays in execution resulting in excess of initial cost budget and time schedules.

Continental territories have different methods from which to predetermine the criteria used for construction. The European standards are commonly used in setting highway and bridge design standards, Indian standards are a benchmark in India and American standards are used in the U.S (Schoon, 2015). International practice for implementing infrastructure projects demands that various road elements be constructed on the basis of specific specifications as a basis for uniformity and as a guide for engineers to practice, (World Bank, 2015). The criteria used in a dominant region will shape the special requirements used to establish contracts and deal with road projects executing contractors (Great Britain Transport Department, 2016). In Europe, the basis for contract oversight and management is the International Federation for Consulting Engineers (FIDIC) or the red book. The contract specifies the process for the civil and engineering works involved in a road project module of service and implementation. International procedures for carrying out road projects include: preparation, procurement, traffic survey, material review, geotechnical reporting, hydrology survey,

engineering survey, publication of preliminary drawings, establishment, construction, monitoring & assessment and post-examination of implemented road projects (Politis, 2013). There are limiting factors in each road construction process which will influence overall road infrastructure project performance and implementation. The European Transport Roads and Research Laboratory outlines the minimum standard of materials to be used in road congestion when taking design

methodology into account (Albalate, 2014). Project design and requirements are a significant aspect of infrastructure building as they influence the consistency and strength of the road surface built. In America, road projects must be developed to ensure the gravel materials used in design methods surpass the California bearing ratio (CRB) of 160 per cent (Hicks, 2017). (CBR) is a standard test used to determine the resistance of gravel used in road base layer construction. British requirements in Europe demand that the gravel used in the design approach should achieve a compressive strength of concrete of more than 1600 kilo Newton per square meter (Baker, 2015). Roads projects which have failed to meet the minimum design requirements have proven impractical and fragile to withstand motor vehicle launching. Fisher and Smith, (2017) noted that in Virginia, United States, Appalachia road segment I-81 failed from bottom to top surfaces triggering fracturing on the pavement structure as it couldn't withstand the high load force. Failure to consider the specifications of materials and tests contributes to cracking and degradation of road surface, before or after completion of the project.

In Africa the construction of road infrastructure is seen as the key to bridging the continent's current economic gap. Although the problem of delayed payment is partly related to the delay of national government funds and revenue collection shortfall, Ouko (2015) noted that stakeholders' participation remains key in accounting for the increased number of unfinished and abandoned road projects. A research by Ernest and Young (2014) on the introduction of government infrastructure programs in Africa found that the private sector's stakeholders had invested over USD 174.8 billion dollars for implementation of road infrastructure projects in the Sub Saharan region only. Owing to the high capital nature of the rail transport projects, the need to construct new transport infrastructures, rehabilitate old facilities and bridge the infrastructures financing gaps, funding for the project comes from multiple sources including states,

multilateral and multinational organizations, PPP corporations and through Official Development Assistance (Ernest & Young, 2014). The investing agencies determine how to carry out and execute the hard infrastructure projects. Tunisia borrowed USD $300 million from the European Investment Bank, intended to upgrade its roads and bridges, with the condition of the financier dictating the design methodology to be implemented attached to the funding (World Bank, 2015). Awoyinfa (2012), noted that roads in Nigeria fail to be completed since execution do not conform to design plans for construction, resulting in frequent changes in design that could result in incorrect project designs. Significant factors affecting completion of road infrastructure projects in remote regions frequently arise from

delayed transactions. The issue of project delay begs the need for timely payment and curb cash flow issues to ensure that projects get implemented within stipulated schedules, (Chism and Armstrong, 2010). Failure to observe the release of construction funds shortcut steps implemented by contractors tend to be cost-cutting methods that contribute to non-compliance with the construction requirements laid down (Barasa, 2014). As part of the planning process, the need for cost control by project funders and state road entities is emphasized in an attempt to ensure that people in rural areas get value for money, safe and productive roads. Investments in infrastructures are the path towards socio and economic development in Kenya, hence the massive budget allocation that has been passed to finance road projects and open transport network connections (Mubila, 2014). In its Vision 2030 agenda, the Kenyan government described improving road infrastructure as being amongst key factors of the nation's economic transition. Though the Kenyan Government has vowed to keep investing in infrastructure development, the problem of road building's time and cost overruns threatens to impede the country's rapid expansion of roads.

The increasing rate of unfinished road infrastructure funded through the Local Authorities Transfer Fund (LATF) has been attributed to insufficient contract management expertise, limited participation of stakeholders, political intervention, delayed payment, weak project design and specifications. This was according to Okero (2015). Makajuma (2017) advocates for the eminent need to involve the communities during inception of road projects in rural areas as one of the aspects that would improve efforts towards project completion as well as increase the feeling of joint ownership of

the projects by the stakeholders. If that is not the case, the community dissociates itself from the projects right from inception, which ends us affecting project completion negatively (Okero, 2011). A survey by Kilaka and Omwega (2015) on factors affecting PPP funding for infrastructure development projects undertaken by the (KURA) suggested that there was a lack of project financing's accountability and transparency and the extent of contract management involvement affected the efficiency, quality and expense of road infrastructure projects being implemented and completed.

2.3 Stakeholders' Participation and Completion of Rural Roads Projects in Kenya

A stakeholder is someone who substantially influences or is influenced by a decision of another affecting the project activities. Project stakeholders includes but not limited to financiers, suppliers, consultants, clients, communities and governments. In the last decade, projects have changed internationally, as globalization introduces a diverse collaborative road project phases and processes of construction, (Chevalier, 2010). A study by Toor and Ogunlana (2010) on PPP's major public infrastructures perception on large scale government development's key indicators researched beyond iron triangle's conventional method, to an understanding that a project's success is tagged to its stakeholders' being satisfied. According to Chinyio and Olomolaiye (2019), many global initiatives are actually being carried out in organizations with entirely different cultures, working together to achieve project success. This extra ordinary and valuable phenomenon is composed of various stakeholders who participate from different viewpoints as well as the global project itself (Annon, 2010). Stakeholders have to be recognized as essential to success in the global setting because they can assist in the design and selection of suitable infrastructure projects.

Project participants have different positions and influence over a venture and therefore the need for a contractor to recognize such parties. Influential qualities of stakeholders, their awareness, successful use has been established as the key criteria to a project's success. Studies by McKinsey (2012) on stakeholders' analysis in project execution indicate high levels of project problems and delays due to mismanagement by stakeholders. Such failures and major disappointments are also the focus of transport growth and implementation projects (Lavagnon, 2013). Beringer, Jonas and Kock (2013) agreed that problems in the stakeholder community are mainly linked to

stakeholders' powerful characteristics and attitudes and their awareness and management, requiring systematic review, wider expertise and inclusive management strategies, techniques and resources to be assessed effectively. Mohamed (2012) noted the need to involve the project stakeholders because the stakeholders are persons or group of persons affected or impacted by another party 's decision, and therefore the host community and government agencies may be involved in a road construction project. The researchers found that the needs of the stakeholders in a road construction project have to be considered for successful project implementation. According to the Institute for Project Management (2014), failure to recognize the relevant parties will likely generate major problems for a project. An understanding of the fact that stakeholders may have either positive or negative impact over a project is also important.

Stakeholders opposed to a project are often overlooked, and the success of a project may be counterproductive to that. Atkin and Skitmore (2012) emphasized on the need to gain support from the negative parties whenever possible in order to improve a project's chances of success. Therefore, project managers should strive to ensure that all stakeholder interests are accommodated for and collaborations made to at least fulfill the minimum specifications. Manowong and Ogunlana (2010) indicated there is need for successful implementation and completion of a road construction project, calling for inclusion and consideration of the interest of the project stakeholders. Given the substantial environmental effects of such constructions and the destruction of other social infrastructure such as power lines and public water pipes, ensuring stakeholders are involved is crucial. Maina (2013) analyzed the impact of stakeholder participation on the economic stimulus project's performance, and noted that community involvement is important in road developments, through a constructive approach. The results of the study showed that the use of reactive strategy where stakeholders are involved is likely to be detrimental when project challenges and issues arise. This happens mostly when stakeholders are not involved or are uninterested in project dynamic or complex circumstances which have far-reaching impacts. In that kind of a project situation, a project is likely to face delays while the issues are being resolved. If consultations are conducted during the course of the project, this kind of a situation can be avoided. A road contractor is better positioned to predict challenges in construction projects and schedule stakeholders consultations

accordingly, ensuring that the project activities and implementation run smoothly, increasing project completion success.

With dissatisfaction being experienced by the main stakeholders, there is always minimal scope for the success of a project. Davis (2014) surveyed project stakeholders that included stakeholder groups of senior management, project team and project recipients. The big challenge that was found to influence the projects was lack of consensus among stakeholders on the success factors of the project that resulted in discontinuity of the project support. Zhang, Wu, Shen, and Skitmore (2014) did a study on road projects' sustainability and noted the social implications of a project, which have to be addressed long before beginning of a venture. For example, the effect of projects on amenities and services such as water and electricity need to be explained. The researchers determined that most of the time, critical services would be disrupted for a construction to be undertaken and therefore the need to involve the party concerned in order to discuss elements of the project such as scheduling. The study suggested that the project contractors should bear the costs of shifting the public services and rehabilitating the affected area once the project has been completed. Macharia (2016) did a research project on construction projects in Embakasi, Kenya. The researcher found that when the parties are involved during inception of a road development project, a suitable impact analysis is likely to be carried out. During the project planning process, interests of all stakeholders should be addressed and therefore prevent potential collisions throughout implementation. Sallinen, Ruuskaand Ahola (2013) examined the influence of stakeholder involvement in large nuclear power plant projects. A case study descriptive approach was used and data collected from 18 interviews. Ministry and company officials were interviewed using a semi-structured key informants interview guide on the influence of stakeholder involvement. Analysis of the interview responses established that regulations and laws influences level of involvement of government stakeholders. The authors revealed that government stakeholders either enable or restrain projects. Enabling of projects according to the authors refers to the project managers adhering to the set standards and regulation code.

A descriptive research study conducted by Njogu (2016) on the Automobile industry by examining the project performance from the sphere of stakeholder participation. Through stratified sampling technique, data was collected from 125 respondents who

consisted of quality control personnel, project managers, supervisors and operational managers. The study findings established that stakeholder participation has critical implications on the environmental conservancy such as emissions. The study findings pointed out that automobile emission control could be achieved by encouraging stakeholder participation. Bal, Bryde, Fearonand and Ochieng (2013) through an exploratory study investigated sustainability of the road construction industry through stakeholder involvement. The authors linked achievement of sustainability targets to successful engagement of stakeholders from project inception to completion, in the construction sector. The researchers mentioned that project stakeholders are classified into the important and less important. They however indicated that lack of inclusion and participation by the less important stakeholders may result in failure to achieve the project goals. In this context, the authors concluded that decision-making in projects was meant to include all stakeholders as a way of achieving project success and sustainability. The study's results indicated that recognizing the agenda of specific stakeholders and gaging the specified their agenda against implementation phase performance indicators results are essential approaches to achieving project-related goals that lead to successful road projects.

2.4 Project Financing and Completion of Rural Roads Projects in Kenya

Projects are strategic initiatives undertaken to build economic benefit and competitive edge. Financing of construction projects like roads, railway, port harbors and many more is expected to be economic investments (Olatunji, 2010). Roads construction industry in a country helps create wealth, job opportunities and increase a country’s GDP, Olatunji (2010). It assists in developing and/or extending public infrastructures, promoting the services and spurring economic growth across the board. Chiocha (2011) defines project financing as obtaining capital to finance a commercially viable and sustainable capital investment project, with the sponsers mainly looking at the investment cash streams as a source of funds to serve the loans and generate returns on project expenses. Matesehe (2013) defines project financing as funding for a specific economic entity in which the lender is prepared to look primarily at the economic entity's investment gains and profits as the source of the money by which the loan is to be recovered, and the properties of the business unit as security for loans. According to Bundi (2011), the transport infrastructure industry plays a crucial role in the growth of

every nation. Therefore, it is essential to increase implementation and, most importantly, to complete road projects.

Sustainability is key to financing road projects in rural areas. Chen (2017) indicated that adequate funds should be provided to support the execution of a project in order to be successful. Jackson (2018) noted that accessibility of project funds is an important factor which influences project execution. Late or slow release of funds, particularly during the first phase of the project, is a significant barrier to effective project execution, especially when project team and staff have to be recruited and field supplies obtained for project kick off operations need to be pre-required. Equity and debt have become the main sources of financing for transport infrastructure. Innovative methods of funding ventures have arisen in the recent past. However, and these include special project funds and venture capital. Multilateral institutions and international governments also provide financial support for implementation of public infrastructure projects (Wambugu,2013). Transport agencies of the government give priority to investments in construction projects such as roads and other transport projects not just to stimulate economic growth, but the wider associated benefits should reach the citizens.

Road building ventures typically include a developer, who sponsors and maintains projects. Project's investors are typically broad institutions such as county government, multilateral institutions among others. Karim and Marosszeky (2019) noted that most of the public investments go to transport infrastructure projects, with the government being the world's leading supplier of public infrastructure services, accounting for 78% of the spending in the year between 1984 and 2003. The funders engage respective project companies and consultants in designing, supervision and management of projects through procurement strategy and contract documents. Jackson (2008) noted that funding for the project is well outlined in the contract documents. Lam, Wang, Lee and Tsang (2007) reported that FIDIC (Federation Internationale Des Ingenieurs Conseils) and New Engineering Contracts are the governors of major construction contracts worldwide. According to World Bank (2012) report on the state of rehabilitation of major urban roads in the Tennessee Valley USA following the deadly Tsunamis, two main factors were central to the completion of the road rehabilitation period, namely project time and project funding.

The meaning of a construction contract can be specified with the given construction time and finances. For a specified amount of money, for example, road construction contractor would be expected to deliver a facility within the specified time limit (Chism & Armstrong, 2010). According to Dissanayaka & Kumaraswamy (2009), Once a project investor enters into a building project, an immense amount of money is spent in a specified period and it expects the investment to repay itself. As such the prompt completion of the project means that the costs incurred are the required expense of the project. Any delay leads to cost overruns which increase the cost of the project. A study on implication of non-completion projects in Malaysia by Hussin and Omran (2012) concluded that 70% of projects suspended in Malaysian transport construction projects were mainly due to budgetary inadequacies, developer issues, contractors, local and national governments, sponsors and many others. Piper (2011) carried out a study in Madagascar. He found out that between 2008 to 2018 up to 71% of the roads infrastructure construction projects, irrespective of their location, delayed for completion as a result of poor financial allocation and the contractual agreements that were not practical. The same study cited that the repair of the road linking the major international airport in Madagascar and the capital city's central business district experienced time overruns due to limited financial resources and the island's political unrests.

In East Africa, 45% of the road projects that link Kenya, Tanzania, Uganda and by extension Burundi in 2011 experienced rehabilitation delays due to inadequate project finances and poor financial management. This was According to GOK (2012) report on road construction in East Africa. Inadequate funding to complete road projects in rural areas or any delays by project owners or customers' payment of the services lead to major problems (Hussin & Omran, 2012). Complex and dynamic nature of road projects in rural areas result in difficulties to schedule, predict, monitor and control the construction processes of the project (Ganiyu & Zubairu, 2010). Therefore, as construction projects are capital investment that should ultimately be economically meaningful, there is a need for project managers to offer meaningful solutions to overcome delays in construction projects caused by inadequate project funding. Contributions to delays of road infrastructure projects emanating from the government is mostly as a result of late release of funds to the contractor the ability of contractors to ensure the continued supply of construction materials (Chepkoech, 2012). The

government financial entities and positions greatly affects rural areas roads projects financing status, which influence infrastructure construction projects' implementation and completion. Olatunji (2010) noted that the funding of projects is one of the obstacles beyond the direct control of the contracting parties, but also affects the smooth flow of scheduled operations. With slow payment of project financing, the contractor may start committing less resources to the construction project which may prolong the stipulated implementation time, causing eventual overruns of costs.

Roads in the rural areas of Kericho which were to be completed by the year 2012 took relatively longer and was completed in mid 2015. This was according to Chepkoech (2012), findings indicated that it was due to the political circumstances, wherein funds allocated to the project implementation was used for political and other purposes. A similar case whereby among other reasons, road construction funds were diverted for political interests was noted by Desai (2013), in the study of construction and maintenance of five roads projects in rural areas of the Kenyan coast region, under the Kenya National Highways Authority (KeNHA), which develops, operates, rehabilitates and maintains all national roads of various classifications of national roads. Other cited roads under the same study and which experienced the same financial challenges by the same study were the periodic maintenance works of Mtito Andei-Voi Road, periodic maintenance of Mombasa- Miritini Road, rehabilitation and upgrading to bitumen standards of Mariakani-Kilifi. Other studies done by Oraro (2012) and O'shea (2013) indicated that (KeNHA) suffered delayed project construction finances from the national government, constrained budgets, donor's withdrawal due to heated political alignments, poor contractual agreements, lack of proper expertise and technology. Lack of completion and delayment of roads construction and rehabilitation has affected KeNHA's regular operations of KeNHA in the coastal region (World Bank, 2015). A study done by Thugge, Heller and Kiringai (2016) on execution of transport projects revealed that absorption of development budgets is a serious concern for a number of government agencies since it leads to a condition in which funds that would have been used to stimulate the economy are diverted to unnecessary activities instead of implementation of infrastructure projects. Wafula (2017) noted that part of the financial resources allocated by (GOK) for the maintenance of urban roads in the country in 2015 are mostly misappropriated and where the funds are used appropriately, slow disbursement of the construction finances hinder the pace of

infrastructure development as well as rate of a country's growth. Quality of roads in rural areas is also affected by delays of construction finances or diversion of funds which mean that road reconstruction has become more regular than it ought to be.

Major road development projects in the East African region were examined. GoK (2012) noted that in Uganda and Kenya, most of the road projects had been financially affected in one way or another. The survey indicated that at least 45 percent of the urban road construction projects either were abandoned or faced major delays in beating the stipulated completion period. Some of the issues the report revealed included inefficiencies in system monitoring and evaluation, and poor financial resource management. Kagai (2017) observed that Thika Super Highway in Kenya was completed in 2013, with its original completion date was July 2011. However, the implementation cost escalated to 31 billion Kenya Shillings from the initial estimate of 27 billion Kenya Shillings. According to Mbogo (2014), delays in the contractors' payment by (GOK) were a major contributor to the failure to meet the timeline for the project. The financial challenges faced by the contractors on the Thika Road forced the private party to outsource funds to complete the road construction.

Road construction projects often take a long time to complete, when financial problems arise and are not resolved in time. World Bank (2014) noted that road construction progress payments are expected from the financial institution, the majority of cases from a government agency, investor or private party in a private public partnership. In Kenya, Kenya Roads Board (KRB), Kenya Urban Roads Authority (KURA), and KeNHA oversee most of the urban road development projects. Such organizations will make on-going payments to road contractors. Gaba (2013) observed that it was very challenging to have a good picture of the public construction projects from the beginning to the end and thus the danger of undertaking a road construction project is high. The problem is compounded by the fact that the government's financial budget lasts for one financial cycle, although it will take longer than this time for most road building projects (Hamzah, 2012). Therefore, constraints are likely to be encountered in having effective financing plans for road construction projects. Laryea (2015) noted that this results in delays in disbursing funds to road developers, and sometimes also lack of funding to finance and maintain projects. Callinicos (2018) indicated that a cohesive approach to transformation, quality improvement and innovative approaches

can be developed through the introduction of models for financial performance management, transport infrastructure and construction organizations. Gyula (2018) noted that development of urban roads has started to implement up-to-date financial information technology, data processing and customer systems. Davis, Schoorman and Donaldson (2017) identified among other variables, the integration of project financial knowledge into project practice has made a significant contribution to good decision-making on the project financing perspective, reflecting in return the successful execution of transport infrastructure projects.

2.5 Contract Management and Completion of Rural Roads Projects in Kenya

Contract management activity covers all tasks involved in drawing up, updating, reviewing and evaluating contracts and introducing processes and using software to improve the effective recording and record keeping of contractual terms and conditions. The road project client enters into contractual arrangement with a second party in the contract documents, (Cherotich, 2014). The legally binding arrangements include provisions Guarantee that the other contracting party pays towards finishing the road building project which the contractor would like to see completed. The Road building agreements clearly stipulates contract management. It also defines the scope of work to be executed in the project specifications and requirements and also includes capital expenditure in the quantity bills (Republic of Kenya, 2015). According to Basheka (2011), the aspects of time, cost and quality are main provisions in any construction contract. Francois (2015) conducted a research on five causes of project delays and cost overrun, and their mitigating initiatives, and observed that contract management is associated with 57% of project failures in developing countries, while it's associated with 35.3% of project failures in the United States. Albalate (2014) Promotes the idea that an optimal contract length exists whereby the consumer earns the best price. He further asserted that the owner pays a premium for the acceleration if the facility is required in less than optimum time.

If the project owner allows the contracting company longer than the maximum period, the facilities will be paid extra costs in terms of lost income, obstruction of usage by the constructed facility and additional maintenance costs. Baker (2015) identified use of creative contracting approaches was established as a good practice leading to effective construction process and complete projects. According to Hussin and Omran

(2012), Creating contract management is a primary determinant of whether the project will be successfully completed or not. As many scholars have observed, the significance of the topic of contract management and administration in construction projects keeps coming up because it brings the key aspect of quality, in urban road construction projects, Matesehe (2013). This is because fulfillment of the project specifications and standards is amongst the many dimensions of quality product or service from the customer's point of view. Toor and Ogunlana (2014) did a study on challenges causing delays in major construction projects in Thailand and found out that, there were major delays in construction projects where there were unclear regulations and legal bindings that govern the processes of awarding and shifting contracts.

When a project fails in its completion, then the expectations and requirements of the customers in terms of construction costs are clearly not met. Godfrey, Pross and Alex (2016) did a study on contract management and performance of road maintenance projects in Arua Municipality in USA and the relationship between contract administration, contract management and contract closure and maintenance project performance was found to be significant. The study findings indicated that improved payment processes, regulated contract variations and conflict management increase the time and cost efficiency of projects. Cherotich (2014) conducted a survey on contract management practices and operational performances of state-owned corporations in Kenya and found that contract management practices have impacts on completion of state-owned corporations in Kenya. Contract management thus establishes customers' time expectations on the rewards of construction projects. The study also revealed that conditional acceptance to the possibility of potential contract delay is often accepted in the contractual agreement, where such delays are allowed on notice to the contractor due to very many unforeseen factors. However, any additional contract extension beyond these delays is deemed inexcusable.

In rural roads project contracts, the contractors are expected to notify the project client, within the defined dates, of any anticipated contract delay. According to Ahmed, Azhar, Castillo, and Kapagantulla (2014) the seemingly ‘small delays’ are often ignored before the accumulated consequences are financially evident. In Kuwait, an analysis of construction contract delays by Koushki, Al-Rashid and Kartam (2015) found that 64 per cent of owners had levied fines for any contract delay. According to Ayudhya

(2011), contractual dispute caused delays and cost overruns. Rodrigue (2012) stated that only one-fifth of the government contracts were delivered within the set deadline and that the average construction contracts had exceeded 40%. Contract disputes in the early stages of construction may lead to both delays and cost overruns. Contract disputes in the early stages of construction may lead to unforeseen delays. Changes in contracts and cost overruns lead to significant changes in proportion of contract price. Guarantee-priced contracts are often used to transfer risks and liabilities of to the contractors, whereas fixed period contracts guarantee that, if the project fails, the contractor can incur liquidated losses regularly (Oraro,2012). Without proper contracts management, most contract figures turn out to double the initial tender price due to uncertainty at the start of the project.

2.6 Project Specifications and Completion of Rural Roads Projects in Kenya

Road projects are planned and built in rural areas to satisfy users, consumers and society's demands. Project criteria are presented as functional and practical requirements by drawing up codes, standards which are highly regulated, (Coogan, 2014). Successful management of the crucial and complex interface between design and pre-construction activities is particularly becoming increasingly important in the realization of projects completed within quality, cost and timelines. Inadequate and deficient design, specifications and documentation negatively affects the efficiency of the construction process, with design defects decreasing project quality and increases in overall project costs result (NCHRP, 2010). Changes in project design arise from defective, inadequate quality control in the design process, or contradictory aspects of building designs and requirements (Dosumu & Clinton 2017). Road project design errors and omissions, construction plans with incomplete specifications or errors that can reach well beyond the production of project designs and specifications.

Failure to meet planned time and budget costs, frequent designer adjustments or mistakes lead to numerous adverse effects on the life cycle of the projects, causing construction delays in road infrastructure projects. In order to understand the successful completion of road building projects it is important to remember that the building of a road takes a number of steps (Siraw,2014). The traditional process for implementing road infrastructure projects starts with project preparation, which includes carrying out

a design feasibility analysis in order to create a project plan (Macharia, 2016). Before a road construction project is launched, specific goals must be set which, according to Mohammed (2012), is part of the project's justification. Economic feasibility analysis includes determining the traffic limits for the road project that is being planned (Rodrigue, 2012). Technical feasibility for project justification or dismissal could be dependent on the sum of traffic limits. Secondly, the project design process is implemented, assuming the project attains evaluation of the technical justification, material and topographical survey to produce preliminary road construction designs (Kagai, 2017). The road architecture must include geometry for ease of driving (Schoon, 2010). A pavement structure for the construction is chosen based on the road's material investigation and traffic class (Sambasivan & Soon, 2017). The final phase involves carrying out the road construction project which involves simply implementing the designs using the allocated resources and maintaining the project scope and schedule.

Karim and Marosszeky (2012) researched on the process management for reengineering processes using main performance metrics investigated the ex-post evaluation of European Investment Bank transport projects that addressed transport projects in central and eastern Europe. The results findings showed that project designs were prepared by the designers, assisted in some cases by foreign consultants, sent to the financiers, reviewed critically and suggested improvements, recommendations and provisions made before the final design was accepted with some changes incorporated. Design changes resulted in an inefficient design; shortened service life and increased both damage to the pavement and maintenance cost. Detailed plans, reliable materials and breakdowns of labor costs were not available for assessment, so possible project components were approved on a case-by-case basis after analysis by the bank. Deviations from the project schedule may result either in project completion delays or cost overruns. Construction instability and dynamic nature of road projects increases the degree of complexity involved in the planning and execution phases. Road construction work has historically isolated design and planning from building methods, resulting in some scale and design changes during implementation, (Dosumu & Clinton, 2017). Separating design and construction has resulted in serious problems where designs are made without consideration for constructability or sustainable environments, thus adversely affecting project efficiency (Austin, Andrew & John,

2012) The consequence of these changes has resulted in cost overrun issues, scheduling delays and loss of productivity. The aforementioned combination has an adverse impact on the total cost of the project.

Changes in design specifications may have a significant effect on costs in the range from 2.1 to 21.5 percent of overall construction costs. Results of a system dynamics model analysis by Han, Sangwon, and Feniosky (2013) to determine the impacts of design errors in construction projects showed that design errors resulted in some reworks in construction projects and increased project costs by 5 to 20 per cent. Cost overrun phenomena attributable to design errors and modifications in nature are common, therefore nearly every country is experiencing the unfavorable impact of changes in design on project cost efficiency (Chang,2016). Numerous studies have been carried out to identify the causes of design changes, which depend on project type and regional demography. Design changes generally occur due to interconnected actions of owners, consultants and contractors (Abdul, Chen & Jeffrey, 2017). Few researchers considered clients to be the primary force behind changes in design while others accused consultants for constant changes. Nevertheless, contractors have also been described as the leading players in generating events that lead to the shift in design changes.

Project financier advertises for the road construction works and invites bidders to tender for the jobs. However, there must be enough proof in the book of votes to enable the proposal to be introduced. The design approach essentially shapes the requirements for the successful execution of road projects (Coogan, 2014). If the award has been notified, contractors are given notice of award and start letters to execute the contracts for which the employer officially hands over the site by writing. The contactors operate within the defined time limit, mutually agreed by the two parties (Rodrigue, 2012). According to Koskei (2012), the contractor is permitted to raise certificates for payment monthly, depending on the contract's stipulations and requirements. As the presumption is that the contractor has project budget for the road projects, the funds will be released to ensure that the projects are finished on time. After the road building programs have been implemented, the contractor is entitled to request a significant completion awaiting the liability duration for defects. According to NCHRP (2010), the period of liability for defects offers the employer time to check for defects and request

remedy from the contractor. In the end, a taking-over-certificate is given to the contactor as well as defects liability certificate, upon which they the retention monies can be claimed. The client issues a completion certificate after ensuring that the maintenance monies are passed to the contractor, which fully exempts the project contractor from all responsibilities and liabilities and signifies the end of the project. Ideally, the process is controlled and guided by the FIDIC, Conditions of Contract for works of Civil Engineering Construction, Federation International des Ingenieurs-Conseils.

The following manuals are used for supervision to ensure proper implementation of the works: 1986's Basic Specification for Road and Bridge Building (SSRBC), 2010's Road Maintenance Manual (RMM), 2010's Contract Management Manual, 2010's Traffic Agencies Planning Manual for the Preparation of Annual Road Works Programs (ARWP), 2010's Kenya Roads Board. The traditional procedure is implemented in accordance with E.U requirements and is intended to ensure enforcement and control. Decision-makers have, however, largely overlooked the process leading to higher road building costs.

2.7 Theoretical Framework

This research study will be underpinned on the Stakeholders' Theory.

2.7.1 Stakeholders' Theory

Edward Freeman described the stakeholders' theory in 1847. The theory suggested shareholders are merely one of several corporate stakeholders. The environment of stakeholders includes everyone who has invested in or influenced the company: workers, suppliers, activists, investors, contractors, environmentalists near the plants, vendors, government agencies, and more. Freeman's theory implies that the actual success of a company lies in pleasing all of its stakeholders, not just those that would benefit from its products. The attributes of strength, importance and validity of statements characterize stakeholder organization and need to be addressed if project managers are to represent the legal and moral interests of relevant parties. The stakeholder theory includes strategies to identify and control project stakeholders and the proportional impact of different stakeholders.

A stakeholder community mainly consists of shareholders and creditors, staff, consumers, vendors, public or government agencies, trade unions, and environmental organizations. From the theory presented, it can be argued that sector can be described as a dynamic setting with multiple stakeholders who often have different, undefined and divergent objectives. Nevertheless, there was no clear evidence that the transition of working concepts, strategies and hypotheses from the private sector to the public sector were categorically impeded. Nevertheless, the probability of these transfers being successful is considered to be due to the degree of change to match the requirements of the target context. Key theory points include recognizing that every institution or project is influenced by a number of stakeholders and may affect the organization or project. Therefore, knowing the interests of key stakeholders is critical for maneuvering an entity or initiative with minimal conflicts arising. Stakeholder analysis is especially useful when mapping a project's primary stakeholders and defining their respective project interests. The stakeholder analysis thus seems to be a suitable candidate solution as a strategic management method for the complexity-related problems of a balanced scorecard. The stakeholder theory predisposes businesses to participate in corporate social initiatives and then consider the effect on the various stakeholder groups on all of its constituents. The view postulates that the financial success of a firm depends on its ability to devise and implement corporate strategy which effectively manages its relationships with stakeholders. Rural roads project management views any community of stakeholders in a normative, or instrumental manner. The normative point of view suggests that the company should treat the needs of the whole community of stakeholders equally and not only of the consumers or shareholders. In this context, a firm must lay the foundations for a comprehensive CSR initiative in a manner that appeals universally to all stakeholders. The instrumental point of view supports a firm's emphasis on enhancing economic efficiency, claiming that corporate growth is the company's main target. To this end, it is proposed that companies should only lay emphasis those CSR attributes that specifically boost economic output should be emphasized by the firm.

Stakeholders theory thus helps in considering the role of stakeholders in the execution of road infrastructure development projects. The philosophy of stakeholder management has ethics and cooperative capitalism as a basis for social cooperation and value-production. A philosophy is to represent clients to ensure positive returns. It

opposes the notion of trade between powerful and weak stakeholders involved and their expectations as well as interests. The purpose of road infrastructure projects is to provide value; they are an organization's strategic component that impacts a variety of concerns and should be managed and integrated with corporate policy and stakeholder governance principles. Transport infrastructure projects such as Rumuruti-Maralal road infrastructure development should therefore encourage the satisfaction of the stakeholders involved; calling for no trade between parties and actively promoting communication, engagement, participation and empowerment of the stakeholders, and also suggesting continual assessment and improvement of processes leading to greater successes and efficiency of transport projects because management system for stakeholders facilitates greater results through more responsible management and governance.

Other theories related to the research study are the theory of constraints and institutional theory. The theory of constraints opines that organizations face challenges in performance as a result of poor management practices coupled with lack of necessary intervention mechanisms. It also states that all systems operate in an environment of cause and effect. The institutional theory emphasizes need for institutions to have systems and processes which direct the achievement of goals and objectives set. They can be applied by project implementers, who can make use of their expertise to establish correct procedures for carrying out a project in a way that ensures smooth execution and success completion of rural road projects.

2.8 Conceptual Framework

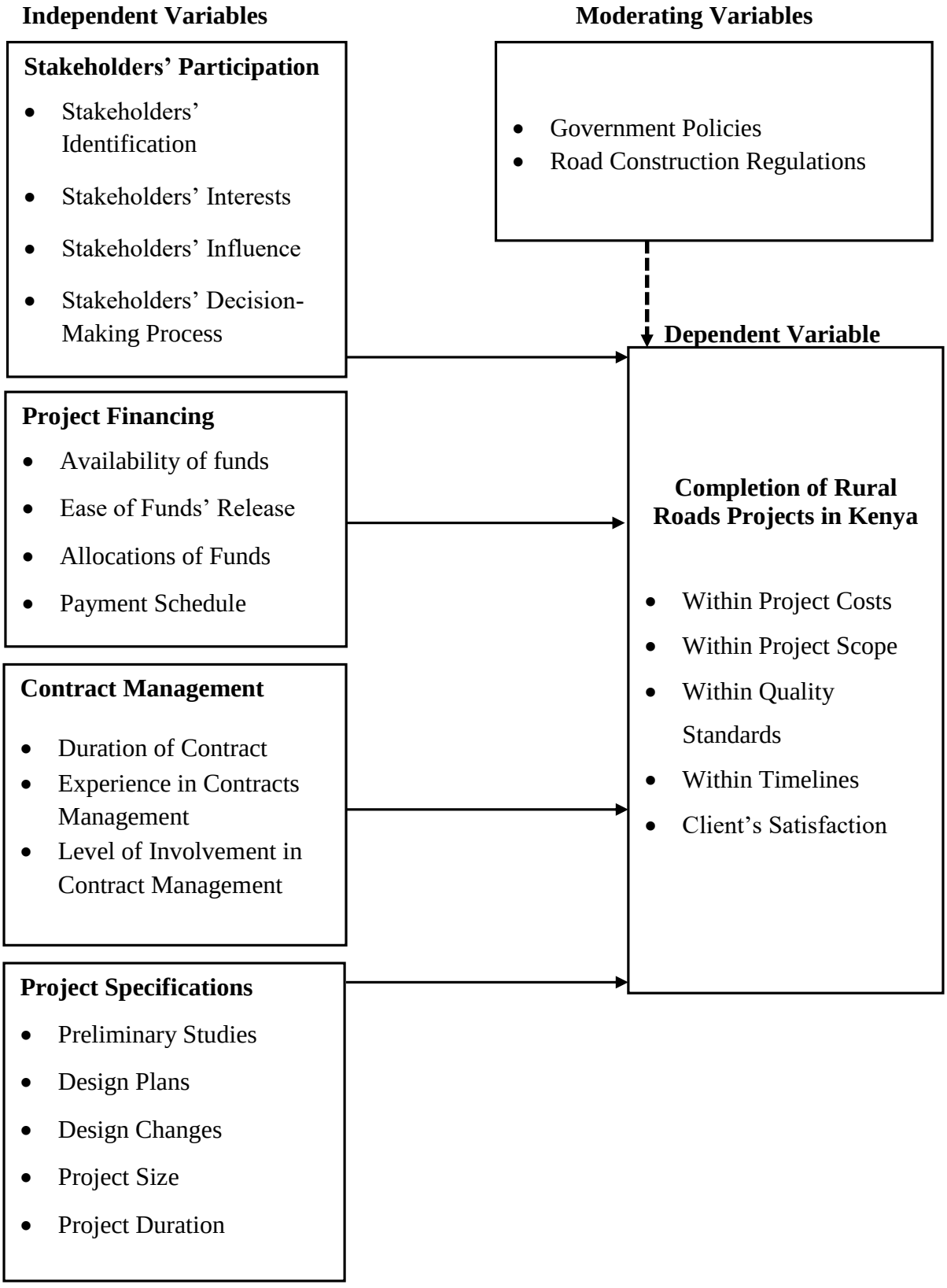

Figure 1 - Conceptual framework

The conceptual framework is a graphical mapping of the interrelationship between various variables. The independent variable is a factor that determines the behavior or result of another variable while the dependent variable is a factor that is capable of determining the effect of the independent variable if observed over time and measured. In this research study, the independent variables investigated were stakeholders' participation project financing contract management and project specifications while the dependent variable was completion of rural roads projects in Kenya. The study's moderating variables were government policies and road construction regulations. The research study aimed at finding out if there was a correlation between the independent and dependent variables

2.9 Summary of Literature Review

The chapter addresses an in-depth literature review that involves the theoretical review and empirical results from previous research done by other scholars and researchers with regard to factors influencing completion of rural roads projects in Kenya. Findings and theories have shown that execution of road projects in remote regions depend on time and cost over runs, affecting the scope of a project, implementing costs, client's satisfaction and project quality. Road projects and development of infrastructure which are delivered on time, on schedule and within allocated funds are extremely important for social and economic development and for promoting structural growth. Inadequate and incomplete road infrastructure interferes with economic growth and international competitive advantage in a country.

2.10 Knowledge Gap

Table 2.1 Knowledge Gap Matrix

Variables	Author(s) & Year	Focus of Study	Findings	Knowledge Gaps
Influence of Project Specifications on Completion of Rural Roads Projects in Kenya	Karim and Marosszeky (2012)	Process management to re-engineer processes using main performance measures	Changes in design contributed to inadequate design; reduced expected lifespan and increased pavement damage as well as servicing costs.	The study focused on Eastern and Central European countries only. It was not clear if the same research findings can apply in project design in Urban Roads project in developing countries.
	Han, Sangwonan and Feniosky (2013)	Dynamic systems model for evaluating the effects of design errors in building projects	Project design failures resulted in some reworks in construction projects and change in the project timeline by 5-20 percent	The research study didn't point if the 5-20% phenomena of cost overrun due to design changes is universal. Further studies can be done to evaluate if there is a standard percentage on the cost overruns due to design changes

Variables	Author(s) & Year	Focus of Study	Findings	Knowledge Gaps
Influence of Project Financing on Completion of Rural Roads Projects in Kenya	Hussin and Omran (2012) Chepkoech (2012)	Implication of non-completion projects in Malaysia Road Provision by Kenya Urban Roads Authority	Projects not been completed because of insufficiency of the finances as well as inadequacy of contractors Completion of Kericho-Kisumu delayed because project funds were rerouted for political reasons	The study did not elaborate on the financial and contractor's inadequacy factor, leaving a broad knowledge gap to be studied Other factors that caused delay of the Kericho Kisumu road were not investigated and can be researched on.
Influence of Contract Management on Completion of Rural Roads Projects in Kenya	Godfrey, Pross and Alex (2016)	Managing contracts and executing road repair work	There is a relationship between construction contracts, process improvement and contract closure and the maintenance project performance	The study failed to define the kind of construction projects that were researched on and if 30% of the projects completed on time includes urban roads projects.

Variables	Author(s) & Year	Focus of Study	Findings	Knowledge Gaps
	Koushki, Al-Rashid and Kartam (2015)	Construction contract delays	64% of project owners had set certain contract delay penalties	Project delays and failures are due to a combination of factors. The factors contributing to the delays can be investigated
Influence of Stakeholders' Participation on Completion of Rural Roads Projects in Kenya	Njogu (2016)	Automobile industry	Construction delays and failures are attributable to stakeholder mismanagement.	The study exhibits knowledge gaps because it focusses on the automobile industry, while the current study seeks to delineate the influence of stakeholder engagement on completion of road projects in rural areas. on project performance.
	Toor and Ogunlana (2010)	PPP's public sector infrastructure projects	The expectations and satisfaction of the stakeholders are essential to the success of a project.	The study failed to capture other stakeholders' identification, involvement and managements which can contribute to a project's success

Variables	Author(s) & Year	Focus of Study	Findings	Knowledge Gaps
Completion of Rural Roads Projects in Kenya	Nabil, Zydoun and Hesham (2017)	Success factors influencing completion of rural roads construction projects in India	Implementation of the projects was not promising due to time and cost overruns	The study variables were not captured and therefore creating a knowledge gap of variables researched on
	Kilaka and Omwega (2015)	Factors influencing PPP funding initiatives related to transport systems implemented by KURA	The lack of accountability in project financing and the level of participation in construction contracts affected the quality, timing and cost of road project completion	The research failed to investigate determinants such as stakeholders' engagement and project design specifications and their influence on completion of road projects in rural areas

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research methodology that was used in conducting the research. It consists of the research design, target population, sample size and sampling procedures, research instruments, data collection procedures, data analysis techniques, ethical considerations and operationalization of the variables.

3.2 Research Design

The study adopted descriptive survey research design. It involved collection of data from one or more populations at a given point in time in order to explain the current characteristics of a population. The strength of a descriptive survey is its ability to produce sample population data collection methods that are fast, inexpensive, effective and reliable (Cooper and Schindler, 2006). The researcher also collected qualitative data through performing interviews. This is a naturalistic inquiry that collects data without manipulating the phenomena.

3.3 Target Population

The target population of this study comprised of four categories, namely the staff working for KeNHA, Rumuruti-Maralal road contractor and consultants and other stakeholders, making a total of 100 respondents. These respondents formed the target population of this study owing to their rich understanding and knowledge on the research topic, having been involved in the design and implementation of Rumuruti-Maralal road project. Respondents had experience that is directly related to the study.

Table 3.1: Target Population

Categories	**Target Population (N)**
Staff working for KeNHA	30
Staff working for Rumuruti-Maralal Road Contractor	30
Staff working for Rumuruti-Maralal Road Consultant	30
Other Stakeholders	10
TOTAL	**N=100**

Source: Rumuruti-Maralal Road Contractor's Report (2020)

3.4 Sample Size and Sampling Procedures

Kothari (2004) indicated sampling as the process of obtaining information about the entire population by examining its sample. Purposive sampling technique and stratified random sampling were adopted for this research study due to the heterogeneous nature of the target population.

3.4.1 Sample Size

Due to the study having a case of small number of the target population, the study adopted a census survey and therefore a complete enumeration of the entire 100 respondents was done.

Table 3.2 Sample Size

Categories	Sample Size (n)	Percentage (N /n) * 100
Project Engineers	16	16
Quantity Surveyor	14	14
Contract Managers	16	16
Design Managers	11	11
Liaison Officers	11	11
Civil Engineers	16	16
Financial Advisers	9	9
Project Developers	7	7
TOTAL	**n=100**	**N=100**

Source: As derived using census survey

3.4.2 Sampling Procedures

Due to the heterogeneous existence of the target population, stratified random sampling technique was employed in the study. Participants were chosen in each stratum according to their suitability to participate in the study. Samples are obtained randomly from each sampling unit such that each respondent from the population has an equal opportunity to be selected (Creswell, 2009). The number of elements from each sample of the population is according to the proportion of the population under study (Faridullah,2010). Purposive sampling technique was used to collect qualitative data

from KeNHA's project manager, Contractor's Team Leader and Consultant's Deputy Project Manager. Interview participants are determined by the researcher's judgement (Taiwo, 2013).

3.5 Research Instruments

In this study, a semi-structured questionnaire was used to collect quantitative data. A semi-structured questionnaire was appropriate for this research study because the questions were easy to ask, quick to answer and easy to analyze data. It's a flexible way to collect data from a large group of respondents within a short period of time (Gay, 1996). The questionnaire collected quantitative data from Rumuruti - Maralal road project implementers who were engineers, quantity surveyors, contract managers, design managers, civil engineers, risk managers, financial advisors and project developers. The questionnaire had an introductory note explaining the purpose of the research study, it was prepared in the English and clear, simple and concise instructions were given for completing the questionnaires. The questionnaire was divided into six sections that were in line with the study objectives, namely: Section A: demographic characteristics of respondents; Section B: completion of rural roads projects in Kenya; Section C: stakeholders' participation; Section D: project financing; Section E: contract management and finally, Section F: project specification. A Likert scale approach using a five-point scale was used to collect research data. Objectives' statements were marked by selecting each category with a corresponding numerical score. The respondents were asked to place themselves on an attitude continuum ranging from Strongly Agree = 1, Agree = 2, Undecided = 3, Disagree= 4 and Strongly Disagree =5. An interview guide which had questions in line with the study objectives was used to collect qualitative data. Respondents who were interviewed were KeNHA's project manager, Contractor's Team Leader and Consultant's Deputy Project Manager.

3.5.1 Piloting of the Instruments

Questionnaire's pilot testing was done through randomly selecting 5 respondents from a population that did not participate in the real study. The selection of the piloting respondents is informed by Mugenda and Mugenda (2003) theory. The pilot testing was carried out on Gacharage road project which is in Murang'a County, because the population of the road project shared similar characteristics with that of Rumuruti-Maralal Road. According to McDaniel & Gates (1996) the pilot testing questionnaire

are designed as open-ended questions that identify other research items that can be included in the questionnaire. The questionnaires were administered by the researcher, allowing clarification of queries as deemed necessary and assessed the respondents' comprehension of the questions of research. The questionnaires were drawn to incorporate the feedback from the pilot respondents so as to eliminate ambiguity, inconsistency or redundancy. The researcher involved three experts who were the researcher's supervisor, lead project engineer and lead contract manager, to check the piloted instruments until such a time that they approved the questionnaires were capable of solicitating the required data.

3.5.2 Validity of the Instruments

Validity is the meaningfulness, accuracy and usefulness of evidence that is used to support the interpretations of research data (Cooper & Schindler, 2003). The questionnaire was pilot tested to ensure content validity. According to Best and Kahn (1999), content validity is meant to yield logical judgement whether the research instrument measures what it's supposed to measure. According to research experts, before administering a research instrument, it's good to ensure it clearly defines what's to be measured and checked by a panel of experts, pretested and contains open-ended questions in order to identify other contents that can be included in the study (McDaniel & Gates, 1996). To ensure content validity, the researcher requested the academic supervisor and three experts in the field of roads transport projects who are road project lead engineer, lead contract manager and lead designer to critically examine the questionnaire for their representativeness. They had sufficient experience and knowledge concerning the study and therefore, made valid observations, suggestions, recording procedures and any other item of concern in the research instrument. Upon receiving the questionnaires from the experts, variables' statements were rephrased and reconstructed according to the suggestions given and the questionnaires given back to the experts to ensure that they measure exactly what they were intended to measure. Once all the changes were incorporated and approved by the experts, the researcher administered the questionnaires for data collection. The study used interview guide to collect qualitative data. Triangulation of sources was used to further enhance the validity of the interview, with the line questions being drawn from the study objectives in order to give an in-depth view of all the study variables.

3.5.3 Reliability of the Instruments

Reliability refers to the extent in which results from a study are consistent over a certain period of time and their accurate representation of the population under the research study (Juppe, 2000). It indicates the stability and consistency with which the data collection instruments measure the concepts. To estimate reliability, repeated measurements were used, with administration of an alternative form method. According to Berg (2001), the structured and concise line of inquiries is intended for the reliability and potential study replication. Cronbach's alpha values are determined to test the reliability of internal accuracy in the questionnaires, for multipoint scaled items. The alpha values for Cronbach range from 0 to 1, with the accuracy of the data sets defined by high values near 1. The acceptable criterion for the reliability of the scale in the social sciences is a reliability coefficient with a score of 0.7 (Gay, 1996). The measured Cronbach values on the line statements ranged from 0.738 to 0.869, indicating that the questionnaire' s internal accuracy had a high reliability, as shown in table 3.3

Table 3.3 Reliability Co-efficient

Multipoint Statements' Scale	Cronbach's Alpha Value
Stakeholders' Participation	0.801
Project Financing	0.738
Contract Management	0.869
Project Specifications	0.854

3.6 Data Collection Procedures

The researcher obtained a letter of introduction from The University of Nairobi. A research permit from NACOSTI was applied for and granted. To ensure research autonomy, a survey kit was prepared for each respondent, containing a cover letter of introduction and a copy of the questionnaire. The researcher contacted all respondents through a preliminary telephone call or text message, requesting for their participation in the research study before the questionnaires are administered. This greatly enhance the questionnaire return rate. The researcher and the research assistant administered the research instruments to the respondents. The interviews were conducted face to face but a telephone interview option was made available for respondents who were not

available for a face to face meeting. Secondary data was obtained from dissertations, theses, published books, peer reviewed journals and other related scholarly publications.

3.7 Data Analysis Techniques

Qualitative and quantitative data was collected in this research study. The quantitative data collected was analyzed using descriptive statistics. Data was thoroughly screened for completeness, accuracy and uniformity, keyed into and coded by Statistical Package for Social Sciences software tool, and analyzed using arithmetic mean, standard deviation, percentages and frequencies in tables. Qualitative data gathered from the interviews was evaluated based on definitions consistent with the study objectives. Content analysis identifying similarities and differences that emerged during the interviews was identified and the primary data augmented with the secondary data.

3.8 Ethical Consideration

Ethical standards were observed while administering questionnaires, in order to promote collaborative work, create accountability, trust, fairness and mutual respect between the respondents and the researcher. Authority letter to collect the study data was sought from and granted by NACOSTI. All questionnaires had a cover letter seeking permission from the respondents and signed individually. Respondents were assured of their confidentiality. Belmont Report (1979) outlines the four well known ethical principles that constitute the basis for ethics in research study and which the researcher ensured that they were duly observed in the course of the study. The principle of non-maleficence, stating that the research must not cause any harm to the respondents or people in general; The principle of beneficence, stating that the work of research should make positive contribution towards people's welfare; The principle of autonomy, stating that the research must respect, protect the rights and dignity of the respondents and finally, the principle of justice, stating that research benefits and risks should be distributed fairly among people.

3.9 Operationalization of Variables

Table 3.3 Operationalization of Variables

Objectives of the study	Variables	Indicators	Scale of Measurement	Data Analysis Techniques	Tools of Analysis
To examine the influence of stakeholders' participation on completion of rural roads projects in Kenya	**Independent Variable** Stakeholders' Participation	• Stakeholders' Identification • Stakeholders' Interests • Stakeholders' Influence • Stakeholders' decision-making process	Ordinal Interval	Descriptive Statistics Inferential Statistics Content Analysis	Mean S.D Frequencies Percentages Pearson Correlation
To assess the influence of project financing on completion of rural roads projects in Kenya	**Independent Variable** Project Financing	• Availability of funds • Release of Funds • Allocations of Funds • Payment Schedule	Ordinal Interval	Descriptive Statistics Inferential Statistics Content Analysis	Mean S.D Frequencies Percentages Pearson Correlation
To establish the influence of contract management on completion of rural roads projects in Kenya	**Independent Variable** Contract Management	• Contract Duration • Experience in Contract Management • Level of Involvement in Contract Management	Ordinal Interval	Descriptive Statistics Inferential Statistics Content Analysis	Mean S.D Frequencies Percentages Pearson Correlation

Objectives of the study	Variables	Indicators	Scale of Measurement	Data Analysis Techniques	Tools of Analysis
To determine the influence of project specifications on completion of rural roads projects in Kenya	**Independent Variable** Project Specifications	• Preliminary Studies • Design Plans • Design Changes • Project Size and Scope • Project Duration	Ordinal Interval	Descriptive Statistics Inferential Statistics Content Analysis	Mean S.D Frequencies Percentages Pearson Correlation
	Dependent Variable Completion of rural roads projects in Kenya	• Within Project Costs • Within Project Scope • Within Quality Standards • Within Timelines • Client's Satisfaction	Ordinal Interval	Descriptive Statistics Inferential Statistics Content Analysis	Mean S.D Frequencies Percentages Pearson Correlation

CHAPTER FOUR

DATA ANALYSIS, PRESENTATIONS AND INTERPRETATIONS

4.1 Introduction

This chapter contains data analysis, presentations and interpretation of the research findings. The sub themes covered are: introduction, questionnaire return rate, general characteristics of the respondent, data presentation and the chapter's summary. The independent variables investigated by the study were stakeholders' participation, project financing, contract management and project specifications. The dependent variable was completion of rural roads projects in Kenya. Quantitative data was coded using the SPSS analytical tool and analyzed using arithmetic mean, standard deviation, frequencies and percentages and presented in tables. Qualitative data obtained from interviews was analyzed using content analysis and reported as direct responses to the questions concerning the study objectives.

4.2 Questionnaire Return Rate

The quantitative data was obtained using closed-ended questionnaires. The research study's sample size was one hundred, and therefore one hundred questionnaires were administered. Seventy-nine questionnaires were completed and returned, achieving a return rate of 79%. A response rate of 50 per cent is satisfactory, 60 per cent is good, 70 per cent is really good, 80% and above is excellent, (Mugenda and Mugenda, 2003). Questionnaire return rate of 79% was excellent and therefore appropriate for the study's data analysis and reporting. The findings are set out in Table 4.1

Table 4.1 Questionnaire Return Rate

Research Instrument	Sample Size	Percentage
Questionnaires returned	79	79
Questionnaires not returned	21	21
Total	**100**	**100**

4.3 General Personal Information of the Respondents

The respondents were requested to indicate the following personal information: The organization they work in; their highest academic qualifications; number of years of service in the organization and the position held in the organization.

4.3.1 Respondents' Organization

The research sought to determine the respondents' place of employment. The study findings are as indicated in Table 4.2

Table 4.2 Respondents' Organization

Name of the Organization	Frequency	Percentage
KeNHA	28	35.44
Rumuruti-Maralal Road Consultant	26	32.91
Rumuruti-Maralal Road Contractor	21	26.58
Others	4	5.06
Total	**79**	**100**

According to the findings, 35.44% of the respondents worked for KeNHA, 32.91% worked for the Rumuruti-Maralal road consultant and 26.58% worked for the Rumuruti-Maralal contractor and 5.06% of the respondents worked in other organizations. The percentage represented in each stratum was good for data collection.

4.3.2 Respondents' Highest Academic Qualification

The study sought to determine the highest educational qualifications of the respondents. The study results are as set out in Table 4.3

Table 4.3: Respondents' Highest Academic Qualification

Highest Academic Qualification	Frequency	Percentage
PhD	3	3.79
Masters	13	16.46
Undergraduate	53	69.09
Diploma	7	8.86
Certificate	3	3.79
Total	**79**	**100**

From the research findings, more than half of the respondents had gone to college, with 69.09% of the respondents having an undergraduate degree, 16.46% had a master's degree, 8.85% were diploma holders, 3.79 were PhD degree holders and 3.79 had studied up to the certificate level. This depicted that the respondents were knowledgeable, understood and filled the questionnaires adequately, collecting the right information

4.3.3 Respondents' Years of Service in the Organization

The research assessed the number of years the respondents had served within their organization. The study results are as indicated in Table 4.4

Table 4.4 Respondents' Years of Service in the Organization

No. of Years of Service	Frequency	Percentages
1 - 3 years	20	25.31
4 -6 years	30	37.97
7 - 9 years	18	22.78
10 - 12 years	5	6.33
Above 12 years	3	3.79
Total	**79**	**100**

From the study findings, 37.97% of the respondents had 4 to 6 years of work service in their organization, 25.31% had 1 to 3 years of work service, 22.78% had 7 to 9 years

of work service, 6.33% had 10 to 12 years of work service and the least was above 12 years of work service with 3.79%. 63.28% of the respondents had between 1 to 6 years of experience in their organization, falling within the 7 years of implementation of the Rumuruti-Maralal road project. This meant that the majority of the respondents had the experience and vast information regarding the implementation of the project, which contributed to deduction of research opinion and to this research finding a bearing.

4.3.4 Respondents' Position in their Organization

The study sought to establish the respondents' position in their organization. The study findings are as presented in Table 4.5

Table 4.5: Respondents' Position in the Organization

Position in the Organization	Frequency	Percentage
Project Engineer	11	13.92
Quantity Surveyor	10	12.66
Contract Manager	16	20.25
Design Manager	9	11.39
Liaison Officers	10	12.66
Civil Engineer	12	15.19
Financial Advisor	3	3.79
Project Developers	4	5.06
Any Other	4	5.06
Total	**79**	**100**

From the findings, 20.25% of respondents were contract managers, 13.92% were project engineers, 15.19% were civil engineers, 12.66% were liaison officers, 12.66% were quantity surveyors, 11.39% were design managers, 5.06% were project developers and 5.06% were respondents holding other positions in the organizations. This indicated that all the positions targeted for the study were covered and the therefore the findings were adequate to draw conclusions from. The respondents had a technical

background in construction and held major roles in the implementation and management of the Rumuruti - Maralal road project.

4.4 Completion of Rural Roads Projects in Kenya

The study was conducted to determine the extent to which the respondents agreed with statements relating to completion of rural roads projects in Kenya. The participants were requested to indicate with: Strongly Disagree = 1; Disagree =2; Neutral =3; Agree =4; Strongly Agree =5. The study results are as shown in Table 4.6, with the percentages indicated in brackets.

Table 4.6: Completion of Rural Roads Projects in Kenya

Statements	1	2	3	4	5	Mean	S. D
Projects should be implemented within stipulated timelines	2 (2.53)	5 (6.33)	3 (3.79)	23 (29.11)	46 (58.23)	**4.401**	**4.011**
Time overruns are common in rural roads projects	2 (2.53)	1 (1.27)	7 (8.86)	6 (7.59)	63 (79.74)	**4.720**	**3.999**
Budget over runs can be controlled by proper project planning	13 (16.46)	12 (15.19)	30 (37.97)	9 (11.39)	18 (22.78)	**3.123**	**2.916**
Project quality is affected by unclear evaluation standards	36 (45.57)	12 (15.19)	7 (8.86)	9 (11.39)	15 (18.99)	**2.242**	**2.267**
Project budget does not affect duration of a project	10 (12.66)	27 (34.18)	18 (22.78)	11 (13.92)	13 (16.46)	**3.005**	**2.593**
Clients' demands affect timely completion of road projects	23 (29.11)	16 (20.25)	16 (20.25)	15 (18.99)	11 (13.92)	**2.693**	**2.506**
Inadequate project budget does not cause project delays	56 (70.89)	11 (13.92)	5 (6.33)	3 (3.79)	4 (5.06)	**1.595**	**1.624**
Undefined project scope contributes to unsuccessful project	15 (18.99)	9 (11.39)	35 (44.31)	17 (21.52)	3 (3.79)	**2.747**	**2.442**
Project scope means creating all project deliverables	1 (1.27)	2 (2.53)	2 (2.53)	13 (16.46)	61 (77.22)	**4.636**	**4.210**
Composite Mean and Standard Deviation						**3.645**	**3.321**

The results in Table 4.6 indicated that 46(58.23%) strongly agreed that projects should be implemented within stipulated timelines, 23(29.11%) agreed, 3(3.79%) had a neutral attitude, 5(6.33%) disagreed and 2(2.53%) strongly disagreed. The line statement attained a mean score of 4.401 and standard deviation of 4.011 which was higher that the composite mean of 3.645 and standard deviation of 3.321, implying that the line positively influenced Completion of Rural Roads Projects in Kenya

Regarding the statement that time overruns are common in road projects in rural areas, 63(79.74%) strongly agreed with the statement, 6(7.59%) agreed, 7(8.86%) had a neutral attitude, 1(1.27%) disagreed and 2(2.53%) strongly disagreed. The line statement had a mean score of 4.720 and standard deviation of 3.999, higher than composite mean of 4.245 and standard deviation of 0.932, implying that the line item positively influenced Completion of Rural Roads Projects in Kenya

On the statement that budget overruns can be controlled by proper project planning, 18(22.78%) strongly agreed with the statement, 9(11.39%) agreed, 30(37.97%) had a neutral attitude, 12(15.19%) disagreed and 13(16.46%) strongly disagreed. The line statement had a mean score of 3.123 and standard deviation of 2.916, which is lower than composite mean of 3.645 and standard deviation of 3.321, implying that the line item negatively influenced Completion of Rural Roads Projects in Kenya

On the statement that project quality is affected by unclear evaluation standards, 15(18.99%) strongly agreed with the statement, 9(11.39%) agreed, 7(8.86%) had a neutral attitude, 12(15.19%) disagreed and 39(45.57%) strongly disagreed. The line statement had a mean score of 2.242 and standard deviation of 2.267, which is lower than composite mean of 4.245 and standard deviation of 0.932, implying that the line item negatively influenced completion of rural roads projects in Kenya.

On the statement that project budget does not affect duration of a project, 13(16.46%) strongly agreed with the statement, 11(13.92%) agreed, 18(22.17%) had a neutral attitude, 27(34.18%) disagreed and 10(12.66%) strongly disagreed. The line statement had a mean score of 3.005 and standard deviation of 2.593, which is lower than composite mean of 3.645 and standard deviation of 3.321, implying that the line item negatively influenced completion of rural roads projects in Kenya.

On the statement that clients' demands affect timely completion of road projects, 11(13.92%) strongly agreed with the statement, 15(18.99%) agreed, 16(20.25%) had a neutral attitude, 16(20.25%) disagreed and 23(29.11%) strongly disagreed. The line statement had a mean score of 2.693 and standard deviation of 2.505, which is lower than composite mean of 3.645 and standard deviation of 3.321, implying that the line item influenced completion of rural roads projects in Kenya negatively.

On the statement that inadequate project budget does not cause project delays, 4(5.06%) strongly agreed with the statement, 3(3.79%) agreed, 5(6.33%) had a neutral attitude, 11(13.92%) disagreed and 56(70.89%) strongly disagreed. The line statement had a mean score of 1.595 and standard deviation of 1.624, which is lower than composite mean of 3.645 and standard deviation of 3.321, implying that the line item influenced completion of rural roads projects in Kenya negatively.

On the statement that undefined project scope contributes to unsuccessful project, 3(3.79%) strongly agreed with the statement, 17(21.52%) agreed, 35(44.31%) had a neutral attitude, 9(11.39%) disagreed and 15(18.99%) strongly disagreed. The line statement had a mean score of 2.747 and standard deviation of 2.442 which is lower than composite mean of 3.645 and standard deviation of 3.321, implying that the line item negatively influenced completion of rural roads projects in Kenya.

On the statement that project scope means creating all project deliverables, 61(77.22%) strongly agreed with the statement, 13(16.46%) agreed, 2(2.53%) had a neutral attitude, 2(2.53%) disagreed and 1(1.27%) strongly disagreed. The line statement had a mean score of 4.636 and standard deviation of 4.210 which is higher than composite mean of 3.645 and standard deviation of 3.321, implying that the line item influenced completion of rural roads projects in Kenya positively.

During the interview session, an interviewee was asked if undefined project scope contributes to unsuccessful implementation of road transport projects. The response given was:

> *" That is a definite yes. Undefined road construction project scope means there are contradictions between the stated objectives, project cost, implementation time and even project appropriateness becomes questionable, which eventually result in unsuccessful or delayed delivery of the facilities"*

4.5 Stakeholders' Participation and Completion of Rural Roads Projects in Kenya

The study sought to determine Stakeholders' Participation and Completion of Rural Roads Projects in Kenya.

4.5.1 Respondents' Opinion if Stakeholders' Participation Influence Completion of Rural Roads Projects in Kenya

The study sought to determine the respondents' opinion if stakeholders' participation influenced completion of rural roads projects in Kenya. The findings are as indicated in table 4.7

Table 4.7: Respondents' Opinion if Stakeholders' Participation Influence Completion of Rural Roads Projects in Kenya

Responses	Frequency	Percentage (%)
Yes	76	96.20
No	3	3.80
Total	**79**	**100**

The study findings showed that 96.20% of the respondents opined that stakeholders' participation influences completion of rural roads projects in Kenya, while 3.80 % had a contrary opinion on the same. There were no reasons given as to why respondents indicated that stakeholders' participation does not influence completion of rural roads projects in Kenya.

4.5.2 Statements on Stakeholders' Participation

The study sought to determine the extent to which the respondents agreed with statements relating to Stakeholders' Participation. The participants were requested to indicate with: Strongly Disagree = 1; Disagree =2; Neutral =3; Agree =4; Strongly Agree =5; The study findings are as shown in Table 4.8, with the percentages indicated in brackets.

Table 4.8: Statements on Stakeholders' Participation

Statements	1	2	3	4	5	Mean	S. D
Stakeholders should be identified in the initial project phase	5 (6.33)	6 (7.59)	3 (3.79)	17 (21.52)	48 (60.76)	**4.423**	**4.020**
Stakeholders should be involved in the entire project phase	8 (10.13)	2 (2.53)	24 (30.38)	12 (15.19)	33 (41.77)	**3.701**	**3.353**
Stakeholders involvement creates understanding of project goals	1 (1.27)	1 (1.27)	5 (6.33)	26 (32.91)	46 (58.23)	**4.394**	**3.838**
Stakeholders' interests cause project delays	21 (26.58)	11 (13.92)	15 (18.98)	19 (24.05)	13 (16.46)	**2.953**	**2.736**
Stakeholders with high influence are not necessary in road projects	26 (32.91)	9 (11.32)	16 (20.25)	9 (11.39)	15 (18.98)	**2.637**	**2.519**
Stakeholders participation leads to joint ownership of projects	4 (5.06)	1 (1.26)	2 (2.53)	7 (8.86)	65 (82.27)	**4.589**	**4.251**
Consultation with all stakeholders leads to slow decision making	9 (11.39)	10 (12.66)	44 (55.70)	12 (15.19)	4 (5.06)	**2.880**	**2.612**
Stakeholders' condition of works can derail construction process	14 (17.72)	25 (31.65)	19 (24.05)	13 (16.46)	8 (10.13)	**2.899**	**2.503**
Composite Mean and Standard Deviation						**3.560**	**3.229**

The results in Table 4.8 indicated that 48(60.76%) strongly agreed that stakeholders should be identified in the initial project phase, 17(21.52%) agreed, 3(3.79%) had a neutral attitude, 6(7.59%) disagreed and 5(6.33%) strongly disagreed. The line statement had a mean score of 4.423 and standard deviation of 4.020 which was higher that the composite mean of 3.560 and standard deviation of 3.229, implying that the line influenced completion of rural roads projects in Kenya positively.

On the statement that stakeholders should be involved in the entire project phase, 33(41.77%) strongly agreed with the statement, 12(15.19%) agreed, 24(30.38%) had a neutral attitude, 2(2.53%) disagreed and 8(10.13%) strongly disagreed. The line statement had a mean score of 3.701 and standard deviation of 3.353 which is higher than composite mean of 3.560 and standard deviation of 3.229, implying that the line item influenced completion of rural roads projects in Kenya positively.

On the statement that stakeholders' involvement creates understanding of project goals, 46(58.23%) strongly agreed with the statement, 26(32.91%) agreed, 5(6.33%) were neutral, 1(1.27%) disagreed and 1(1.27%) strongly disagreed. The line statement had a mean score of 4.394 and standard deviation of 3.838 which is higher than composite mean of 3.560 and standard deviation of 3.229, implying that the line item influenced completion of rural roads projects in Kenya positively.

On the statement that stakeholders' interests cause project delays, 13(16.46%) strongly agreed with the statement, 19(24.05%) agreed, 15(18.98%) had a neutral attitude 11(13.92%) disagreed and 21(26.58%) strongly disagreed. The line statement had a mean score of 2.953 and standard deviation of 2.736 which is lower than composite mean of 3.560 and standard deviation of 3.229, implying that the line item influenced completion of rural roads projects in Kenya negatively.

On the statement that stakeholders with high influence are not necessary in road projects, 15(18.98%) strongly agreed with the statement, 9(11.39%) agreed, 16(20.25%) had a neutral attitude, 9(11.32%) disagreed and 26(32.91%) strongly disagreed. The line statement had a mean score of 2.637 and standard deviation of 2.519 which is lower than composite mean of 3.560 and standard deviation of 3.229, implying that the line item influenced completion of rural roads projects in Kenya negatively.

On the statement that stakeholders' participation leads to joint ownership of projects, 65(82.27%) strongly agreed with the statement, 7(8.86%) agreed, 2(2.53%) had a neutral attitude, 1(1.26%) disagreed and 4(5.06%) strongly disagreed. The line statement had a mean score of 4.589 and standard deviation of 4.251 which is higher than composite mean of 3.560 and standard deviation of 3.229, implying that the line item influenced completion of rural roads projects in Kenya positively.

On the statement that consultation with all stakeholders leads to slow decision making, 4(5.06%) strongly agreed, 9(11.39%) agreed with the statement, 44(55.70%) had a neutral attitude, 10(12.66%) disagreed and 9(11.39%) strongly disagreed. The line statement had a mean score of 2.880 and standard deviation of 2.612 which is lower than composite mean of 3.560 and standard deviation of 3.229, implying that the line item influenced completion of rural roads projects in Kenya negatively.

On the statement that stakeholders' condition of works can derail construction process, 8(10.34%) strongly agreed with the statement, 13(16.46%) agreed, 19(24.05%) had a neutral attitude, 25(31.65%) disagreed and 14(17.72%) strongly disagreed. The line statement had a mean score of 2.899 and standard deviation of 2.503 which is lower than composite mean of 3.560 and standard deviation of 3.229, implying that the line item negatively influenced completion of rural roads projects in Kenya.

In the interview session, an interviewee was asked what happened to projects when there lacks an understanding of which stakeholders to be involved in the project. The response given was:

> *" Failure to recognize the relevant parties will likely generate major problems for a project. An understanding of the fact that stakeholders may have either positive or negative impact over a project is also important. Although stakeholders opposed to a project are often overlooked, the success of a project may be counterproductive to that."*

4.6 Project Financing and Completion of Rural Roads Projects in Kenya

The study sought to determine Project Financing and Completion of Rural Roads Projects in Kenya.

4.6.1 Respondents' Opinion if Project Financing Influence Completion of Rural Roads Projects in Kenya

The study sought to determine the respondents' opinion if project financing influenced completion of rural roads projects in Kenya. The findings are as indicated in table 4.9

Table 4.9: Respondents' Opinion if Project Financing Influence Completion of Rural Roads Projects in Kenya

Responses	Frequency	Percentage (%)
Yes	79	79
No	0	0
Total	**79**	**100**

The study findings showed that 100% of the respondents opined that project financing influences completion of rural roads projects in Kenya.

4.6.2 Statements on Project Financing and Completion of Rural Roads Projects in Kenya

The study sought to determine the extent to which the respondents agreed with statements relating to project financing. The participants were requested to indicate with: Strongly Disagree = 1; Disagree =2; Neutral =3; Agree =4; Strongly Agree =5; The study results are as presented in Table 4.10, with the percentages indicated in brackets.

Table 4.10: Statements on Project Financing

Statements	1	2	3	4	5	Mean	S. D
Completion of roads depend on availability of funds	4 (5.06)	16 (20.25)	3 (3.79)	19 (24.05)	39 (49.37)	**3.788**	**3.743**
Available road project funds from the government is limited	6 (7.59)	2 (2.53)	9 (11.39)	9 (11.39)	53 (67.09)	**4.420**	**3.987**
Finance management is not important in projects	33 (41.77)	18 (22.78)	6 (7.59)	17 (21.52)	5 (6.33)	**2.157**	**2.152**
Cost variation are common during project implementation	3 (3.79)	4 (5.06)	10 (12.66)	20 (25.32)	42 (53.16)	**4.364**	**3.648**
Project funds should be released by the client on time	8 (10.53)	14 (17.03)	0 (0.00)	28 (35.44)	29 (36.71)	**3.951**	**3.646**
Funds for road projects are constantly diverted to other projects	16 (20.25)	8 (10.13)	27 (34.18)	10 (12.66)	18 (22.78)	**3.113**	**2.782**
Contractor's payment is equal to the construction work done	40 (50.63)	23 (29.11)	7 (8.86)	6 (7.59)	3 (3.79)	**1.901**	**1.572**
Contractor should be paid in instalments for the project duration	9 (11.39)	4 (5.06)	2 (2.53)	11 (13.92)	53 (69.08)	**4.432**	**4.010**
Composite Mean and Standard Deviation						**3.516**	**3.195**

The results in Table 4.10 indicated that 39(49.37%) strongly agreed that completion of roads depend on availability of funds, 19(24.05%) agreed, 3(3.79%) had a neutral attitude, 16(20.25%) disagreed and 4(5.06%) strongly disagreed. The line statement had a mean score of 3.788 and standard deviation of 3.743 which was higher that the composite mean of 3.516 and standard deviation of 3.195, implying that the line influenced completion of rural roads projects in Kenya, positively.

On the statement that available road project funds from the government is limited, 53(67.09%) strongly agreed with the statement, 9(11.39%) agreed, 9(11.39%) had a neutral attitude, 2(2.53%) disagreed and 6(7.59%) strongly disagreed. The line statement had a mean score of 4.420 and standard deviation of 3.987 which is higher than composite mean of 3.516 and standard deviation of 3.195, implying that the line item influenced completion of rural roads projects in Kenya positively.

On the statement that finance management is not important in projects, 5(6.33%) strongly agreed with the statement, 17(21.52%) agreed, 6(7.59%) had a neutral attitude, 18(22.78%) disagreed and 33(41.77%) strongly disagreed. The line statement had a mean score of 3.757 and standard deviation of 0.717 which is lower than composite mean of 2.157 and standard deviation of 2.152, implying that the line item influenced completion of rural roads projects in Kenya negatively.

On the statement that cost variation are common during project implementation, 42(53.16%) strongly agreed with the statement, 20(25.32%) agreed, 10(12.66%) had a neutral attitude, 4(5.06%) disagreed and 3(3.79%) strongly disagreed. The line statement had a mean score of 4.364 and standard deviation of 3.648 which is higher than composite mean of 3.516 and standard deviation of 3.195, implying that the line item influenced completion of rural roads projects in Kenya positively.

On the statement that project funds should be released by the client on time, 29(36.71%) strongly agreed with the statement, 28(35.44%) agreed, 0(0.00%) had a neutral attitude, 14(17.03%) disagreed and 8(10.53%) strongly disagreed. The line statement had a mean score of 3.951 and standard deviation of 3.646 which is higher than composite mean of 3.516 and standard deviation of 3.195, implying that the line item influenced completion of rural roads projects in Kenya positively.

On the statement that funds for road projects are constantly diverted to other projects, 18(22.78%) strongly agreed with the statement, 10(12.66%) agreed, 27(34.18%) had a neutral attitude, 8(10.13%) disagreed and 16(20.25%) strongly disagreed. The line statement had a mean score of 3.113and standard deviation of 2.782 which is lower than composite mean of 3.516 and standard deviation of 3.195, implying that the line item negatively influenced completion of rural roads projects in Kenya.

On the statement that contractor's payment is equal to the construction work done, 3(3.79%) strongly agreed with the statement, 6(7.59%) agreed, 7(8.86%) were neutral, 23(29.11%) disagreed and 43(50.63%) strongly disagreed. The line statement had a mean score of 1.901 and standard deviation of 1.572 which is lower than composite mean of 3.516 and standard deviation of 3.195, implying that the line item influenced completion of rural roads projects in Kenya negatively.

On the statement that contractor should be paid in instalments for the project duration, 53(69.08%) strongly agreed with the statement, 11(13.92%) agreed, 2(2.53%) had a neutral attitude, 4(5.06%) disagreed and 9(11.39%) strongly disagreed. The line statement had a mean score of 4.432 and standard deviation of 4.010 which is higher than composite mean of 3.516 and standard deviation of 3.195, implying that the line item influenced completion of rural roads projects in Kenya positively.

When asked if delays in payment by government entities was a major contributor to the failure to meet the timeline for the Rumuruti-Maralal project, an interviewee answered:

> " *It's very challenging to have a good picture of the public construction projects from the beginning to the end and thus delays due to financial challenges a road construction project is high. The problem is compounded by the fact that the government's financial budget lasts for one financial cycle, although it will take longer than this time for most road projects. Constraints are likely to be encountered in having effective financing plans for road construction projects"*

4.7 Contract Management and Completion of Rural Roads Projects in Kenya

The study sought to determine Contract Management and Completion of Rural Roads Projects in Kenya.

4.7.1 Respondents' Opinion if Contract Management Influence Completion of Rural Roads Projects in Kenya

The study sought to determine the respondents' opinion if contract management influenced completion of rural roads projects in Kenya. The findings are as indicated in table 4.1,

Table 4.11: Respondents' Opinion if Contract Management Influence Completion of Rural Roads Projects in Kenya

Responses	Frequency	Percentage (%)
Yes	71	89.87
No	8	10.13
Total	**79**	**100**

The study findings showed that 89.87% of the respondents indicated that contract management influences completion of rural roads projects in Kenya. 10.13% of the respondents indicated that contract management does not influence completion of rural roads projects in Kenya. The only reason given to justify the opinion was that contracts are legal abiding documents and have stipulated project construction period and therefore, all project activities are aligned to the duration it takes to complete a project.

4.7.2 Statements on Contract Management

The study sought to determine the degree to which the respondents agreed with statements relating to the contract management. The participants were requested to indicate with: Strongly Disagree = 1; Disagree =2; Neutral =3; Agree =4; Strongly Agree =5; The results are as set out in Table 4.12, with the percentages indicated in brackets.

Table 4.12: Statements on Contract Management

Statements	1	2	3	4	5	Mean	S. D
Project client should have experience in contract management	9 (11.39)	20 (25.32)	20 (25.32)	16 (20.53)	14 (17.72)	**3.162**	**2.803**
Client's decisions in contract management can lead to project delays	3 (3.79)	1 (1.26)	4 (5.06)	26 (32.91)	45 (59.96)	**4.404**	**3.721**
Contract duration may affect the project quality	10 (12.66)	12 (15.19)	10 (12.66)	31 (39.24)	16 (20.25)	**3.633**	**3.239**
Contractors with project experience are not preferred	49 (62.01)	19 (24.05)	10 (12.66)	0 (0.00)	1 (1.26)	**1.614**	**1.480**
Guidelines on road contract's level of involvement are unclear	17 (21.52)	12 (15.19)	41 (51.90)	3 (3.79)	6 (7.32)	**2.677**	**2.483**
Contract type determines the involvement of the project team	9 (11.39)	17 (21.52)	33 (41.77)	8 (10.13)	12 (15.19)	**3.116**	**2.618**
Contract extension period affects project cost	10 (12.66)	2 (2.53)	9 (11.39)	23 (29.11)	25 (31.65)	**4.731**	**4.157**
Lack of contract management does not cause time overruns	16 (20.25)	18 (22.78)	11 (13.92)	18 (22.78)	16 (20.25)	**2.899**	**3.008**
Composite Mean and Standard Deviation						**3.280**	**2.939**

The results in Table 4.12 indicated that 14(17.72%) strongly agreed that a project client should have experience in contract management, 16(20.53%) agreed, 20(25.32%) had a neutral attitude, 20(25.32%) disagreed and 9(11.39%) strongly disagreed. The line statement had a mean score of 3.162 and standard deviation of 2.803 which was lower that the composite mean of 3.280 and standard deviation of 2.939, implying that the line influenced completion of rural roads projects in Kenya.

On the statement that client's decisions in contract management can lead to project delays, 16(20.25%) strongly agreed with the statement, 31(39.24%) agreed, 10(12.66%) had a neutral attitude, 12(15.19%) disagreed and 10(12.66%) strongly disagreed. The line statement had a mean score of 3.633 and standard deviation of 3.239 which is higher than composite mean of 3.280 and standard deviation of 2.939, implying that the line item influenced completion of rural roads projects in Kenya positively.

On the statement that contract duration may affect the project quality, 16(20.25%) strongly agreed with the statement, 31(39.24%) agreed, 10(12.66%) had a neutral attitude, 12(15.19%) disagreed and 10(12.66%) strongly disagreed. The line statement had a mean score of 3.633 and standard deviation of 3.239 which is higher than composite mean of 3.280 and standard deviation of 2.939, implying that the line item influenced completion of rural roads projects in Kenya positively.

On the statement that contractors with project experience are not preferred, 1(1.26%) strongly agreed with the statement, 0(0.00%) agreed, 10(12.20%) had a neutral attitude, 19(24.05%) disagreed and 49(62.01%) strongly disagreed. The line statement had a mean score of 1.614 and standard deviation of 1.480 which is lower than composite mean of 3.280 and standard deviation of 2.939, implying that the line item influenced completion of rural roads projects in Kenya negatively.

On the statement that guidelines on road contract's level of involvement are unclear, 6(7.32%) strongly agreed with the statement, 3(3.79%) agreed, 41(51.90%) had a neutral attitude, 12(15.19%) disagreed and 17(21.52%) strongly disagreed. The line statement had a mean score of 2.677 and standard deviation of 2.483 which is lower than composite mean of 3.280 and standard deviation of 2.939, implying that the line item influenced completion of rural roads projects in Kenya negatively.

On the statement that contract type determines the involvement of the project team, 12(15.19%) strongly agreed with the statement, 8(10.13%) agreed, 33(41.77%) had a neutral attitude, 17(21.52%) disagreed and 9(11.39%) strongly disagreed. The line statement had a mean score of 3.116 and standard deviation of 2.618 which is lower than composite mean of 3.280 and standard deviation of 2.939, implying that the line item influenced completion of rural roads projects in Kenya negatively.

On the statement that contract extension period affects project cost, 25(31.65%) strongly agreed with the statement, 23(29.11%) agreed, 9(11.39%) had a neutral attitude, 2(2.53%) disagreed and 10(12.66%) strongly disagreed. The line statement had a mean score of 4.731 and standard deviation of 4.157 which is higher than composite mean of 3.280 and standard deviation of 2.939, implying that the line item influenced completion of rural roads projects positively.

On the statement that lack of contract management does not cause time overruns, 16(20.25%) strongly agreed with the statement, 18(22.78%) agreed, 11(13.92%) had a neutral attitude, 18(22.78%) disagreed and 16(20.25%) strongly disagreed. The line statement had a mean score of 2.899 and standard deviation of 3.008 which is lower than composite mean of 3.280 and standard deviation of 2.939, implying that the line item influenced completion of rural roads projects in Kenya negatively.

The researcher sought to establish if contract variation experience in Rumuruti-Maralal road had effects on completion of the road project and an interviewee responded:

> *" Definitely yes. Changes in contracts and cost overruns lead to significant changes in proportion of contract price. In other cases, unclear regulations and legal bindings that govern the processes of awarding and shifting contracts lead to project delays. To counter the challenges, it's good to have improved payment processes, regulated contract variations and conflict management, which increases the time and cost efficiency of projects"*

4.8 Project Specifications and Completion of Rural Roads Projects in Kenya

The study sought to determine Project Specifications and Completion of Rural Roads Projects in Kenya.

4.8.1 Respondents' Opinion if Project Specifications Influence Completion of Rural Roads Projects in Kenya

The study sought to determine the respondents' opinion if project specifications influenced completion of rural roads projects in Kenya. The findings are as indicated in table 4.13

Table 4.13: Respondents' Opinion if Project Specifications Influence Completion of Rural Roads Projects in Kenya

Responses	Frequency	Percentage (%)
Yes	78	98.73
No	1	1.27
Total	**79**	**100**

The study findings showed that 98.73% of the respondents thought that project specifications influence completion of rural roads projects in Kenya. No reason was given as to why project specifications does not influence completion of rural roads projects in Kenya.

4.8.2 Statements on Design Specifications

The study sought to determine the extent to which the respondents agreed with statements relating to project specifications. The participants were requested to indicate with: Strongly Disagree = 1; Disagree =2; Neutral =3; Agree =4; Strongly Agree =5. The results are as indicated in Table 4.14, with the percentages indicated in brackets.

Table 4.14: Statements on Design Specifications

Statements	1	2	3	4	5	Mean	S. D
Project scope is affected by design changes	1 (1.27)	8 (10.13)	2 (2.53)	28 (35.44)	40 (50.63)	**4.398**	**3.785**
Projects fail to be completed even with preliminary studies undertaken	5 (6.22)	21 (26.58)	16 (20.25)	12 (15.19)	25 (31.64)	**3.379**	**3.313**
Design specifications do not influence completion of projects	21 (26.58)	20 (23.31)	33 (41.77)	3 (3.79)	2 (2.53)	**2.406**	**2.141**
Not all stakeholders are involved in project preliminary design	4 (5.06)	11 (13.92)	18 (22.78)	31 (39.24)	15 (19.99)	**3.704**	**3.332**
Design changes are inevitable in roads construction projects	5 (6.22)	1 (1.27)	11 (13.92)	42 (53.16)	18 (22.78)	**3.985**	**3.459**
Design changes is a major factor that contribute to project delays	9 (11.39)	13 (16.46)	30 (37.97)	20 (25.32)	7 (8.86)	**2.490**	**2.347**
Project feasibility studies determines if a project is attainable	3 (3.79)	8 (10.13)	4 (5.06)	22 (27.85)	42 (53.16)	**4.258**	**3.743**
Project duration is determined by the project size	23 (29.11)	21 (36.21)	12 (15.19)	13 (16.46)	10 (12.66)	**2.723**	**2.432**
Composite Mean and Standard Deviation						**3.418**	**3.069**

The results in Table 4.14 indicated that,40(50.63%) respondent strongly agreed project scope is affected by design changes, 28(35.45%) agreed, 2(2.53%) indicated a neutral

attitude, 8(10.13%) disagreed and 1(1.27%) strongly disagreed. The line statement had a mean score of 4.398 and standard deviation of 3.785 which was higher that the composite mean of 3.418 and standard deviation of 3.069, implying that the line positively influenced completion of rural roads projects in Kenya.

On the statement that projects fail to be completed even with preliminary studies undertaken, 25(31.64%) strongly agreed, 12(15.19%) agreed, indicated a neutral attitude, 16(20.25%) indicated a neutral attitude, 21(26.58%) disagreed and 5(6.22%) strongly disagreed. The line statement had a mean score of 3.379 and standard deviation of 3.313 which is lower than composite mean of 3.418 and standard deviation of 3.069, implying that the line item influenced completion of rural roads projects in Kenya negatively.

On the statement that design specifications do not influence completion of projects, 2(2.53%) strongly agreed with the statement, 3(3.79%) agreed, 33(41.77%) indicated a neutral attitude, 20(23.31%) disagreed and 21(26.58%) strongly disagreed. The line statement had a mean score of 2.406 and standard deviation of 2.141 which is lower than composite mean of 3.418 and standard deviation of 3.069, implying that the line item influenced completion of rural roads projects in Kenya negatively.

On the statement that not all stakeholders are involved in project preliminary design, 15(19.99%) strongly agreed with the statement, 31(39.24%) agreed, 18(22.78%) indicated a neutral attitude, 11(13.92%) disagreed and 4(5.06%) strongly disagreed. The line statement got a mean score of 3.704 and standard deviation of 3.332 which is higher than composite mean of 3.418 and standard deviation of 3.069, implying that the line item influenced completion of rural roads projects in Kenya positively.

On the statement that Design changes are inevitable in roads construction projects, 18(22.78%) strongly agreed with the statement, 42(53.16%) agreed, 11(13.92%) indicated a neutral attitude, 1(1.27%) disagreed and 5(6.22%) strongly disagreed. The line statement attained a mean score of 3.985 and standard deviation of 3.459 which is higher than composite mean of 3.418 and standard deviation of 3.069, implying that the line item influenced completion of rural roads projects in Kenya positively.

On the statement that design changes is a major factor that contribute to project delays, 7(8.86%) of the respondents strongly agreed with the statement, 20(25.32%) agreed,

30(37.97%) were neutral, 13(16.46%) disagreed and 9(11.39%) strongly disagreed. The line statement had a mean score of 2.490 and standard deviation of 2.347 which is lower than composite mean of 3.418 and standard deviation of 3.069, implying that the line item influenced completion of rural roads projects in Kenya negatively.

On the statement that project feasibility studies determine if a project is attainable, 42(53.16%) strongly agreed with the statement, 22(27.85%) agreed, 4(5.06%) indicated a neutral attitude, 8(10.13%) disagreed and 3(3.79%) strongly disagreed. The line statement achieved a mean score of 4.258 and standard deviation of 3.743 which is higher than composite mean of 3.418 and standard deviation of 3.069, implying that the line item influenced completion of rural roads projects in Kenya positively.

On the statement that project duration is determined by the project size, 10(12.66%) strongly agreed with the statement, 13(16.46%) agreed, 12(15.19%) indicated a neutral attitude, 21(36.21%) disagreed and 23(29.11%) strongly disagreed. The line statement got a mean score of 2.723 and a standard deviation of 2.432 which is lower than composite mean of 3.418 and standard deviation of 3.069, implying that the line item influenced completion of rural roads projects in Kenya negatively

When asked if project delays attributable to design changes and errors are common, an interview had this to say:

> ” *Yes. Cost overrun phenomena attributable to design errors and modifications in nature are common, therefore nearly every country is experiencing the unfavorable impact of changes in design on project cost efficiency. The causes of design changes depend on project type and regional demography. Overall, most design changes generally occur due to interconnected actions of owners, consultants and contractors”*

4.9 Inferential Analysis - Pearson Correlation Co-Efficient

The data on the independent variables, that is, stakeholders’ participation, project financing, contract management and project specifications on the dependent variable, completion of rural roads projects, were analyzed using Pearson Correlation Co-efficient and averages for each factor calculated into single variables. The was performed at a confidence interval of 95% and a 2-tailed confidence level of 5% significance. Results are as indicated in the correlation matrix between the factors and completion of rural roads projects in Kenya.

Table 4.15 Correlation Matrix

Variables / Values / P. Values		Completion of rural roads projects in Kenya	Stakeholders' Participation	Project Financing	Contract Management	Project Specifications
Completion of rural roads projects in Kenya.	Pearson's (R) Sig. (2tailed)	1				
Stakeholders' Participation	Pearson's (R) Sig. (2tailed)	.876 .026	1			
Project Financing	Pearson's (R) Sig. (2tailed)	.771 .028	.873 .019	1		
Contract Management	Pearson's (R) Sig. (2tailed)	.824 .022	.731 .021	.645 0.19	1	
Project Specifications	Pearson's (R) Sig. (2tailed)	.730 .024	.793 .033	.704 .031	.753 .016	1

The results on table 4.15 indicated that there was a strong positive correlation between stakeholders' participation (co-efficient of 0.876 and p-value of 0.26), project financing (co-efficient of 0.771 and p-value of 0.28), contract management (co-efficient of 0.824 and p-value of 0.22) and project specifications (co-efficient of 0.730 and p-value of 0.24). A positive relationship implies there is correlation between these factors and completion of rural roads projects in Kenya, with stakeholders' participation having the highest influence on completion of rural roads projects, followed by contract management, project financing and project specifications having the lowest influence on the completion of rural roads projects in Kenya. Pearson Correlation Coefficient indicated that the study variables were strongly positively correlated.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter contains the following: summary of findings, discussions, conclusions and recommendations obtained from the analysis of the study data, driven by research objectives. It also outlines the suggestions for further research, in line with the study's outcomes.

5.2 Summary of Findings

The following is the summary of findings on stakeholders' participation, project financing, contract management, project specifications on completion of rural roads projects in Kenya.

5.2.1 Completion of Rural Roads Projects in Kenya

With regards to the completion of rural roads projects in Kenya, the study sought to determine indicators of project completion namely: time, quality, client's satisfaction and schedule. Respondents strongly agreed that time overruns are common in road projects (77.74%); project scope is important in road projects in terms of the achieving the milestones (77.22%) and rural roads projects should be implemented within given timelines (58.23%); Regarding inadequate project budget not causing project delays, 70.89% strongly disagreed with the statement. These indicators attained a higher mean than the composite mean of 3.645 and standard deviation and 3.321, implying that they are positive indicators of the completion of road project in rural areas. 44.31% had a neutral ground on that undefined project scope contributes to unsuccessful project while 20.25% disagreed that clients' demands affect timely completion of road projects. The two statement had means and standard deviation lower than the composite mean and standard deviation of 3.645 and 3.321 respectively, implying that they had a negative influence to the completion of rural roads projects in Kenya.

5.2.2 Stakeholders' Participation and Completion of Rural Roads Projects in Kenya

On the objective on determining the influence of stakeholders' participation on completion of rural roads projects in Kenya, the study findings indicated that respondents strongly agreed that: stakeholders participation leads to joint ownership of projects (82.27%); stakeholders should be identified in the initial project phase (60.76%); stakeholders involvement creates understanding of project goals (58.28%); and stakeholders should be involved in the entire project phase (41.77%). On the statement about consultation with all stakeholders leads to slow decision making, respondent (55.70%) had a neutral attitude on the line statement. Respondents strongly disagreed with the following statements: stakeholders with high influence are not necessary in road projects (32.91%); and stakeholders' interests cause project delays (26.58%). The calculated mean and standard deviation of the majority of line statements is higher than the composite mean of 3.560 and standard deviation of 3.229, indicating that stakeholders' participation influence completion of rural roads projects in Kenya positively.

5.2.3 Project Financing and Completion of Rural Roads Projects in Kenya

Concerning the objective on determining the influence of project financing on completion of rural roads projects in Kenya, the findings indicated the respondents strongly agreed that: contractor should be paid in instalments for the project duration (69.08%); available road project funds from the government is limited (67.09%); cost variation are common during project implementation (53.16%); and completion of roads depend on availability of funds (49.37%); 35.44% agreed that project funds should be released by the client on time Majority of the respondents strongly disagreed with the following statements: contractor's payment is equal to the construction work done (50.63%); and finance management is not important in projects (41.77%) while 34.18% of the respondents were neutral on the statement that funds for road projects are constantly diverted to other projects. The calculated mean and standard deviation of line statements is higher than the composite mean of 3.516 and standard deviation of 3.195, indicating the project financing influenced completion of rural roads projects in Kenya positively.

5.2.4 Contract Management and Completion of Rural Roads Projects in Kenya

Regarding the objective on determining the influence of contract management on completion of rural roads projects in Kenya, the findings indicated that respondent (59.96%) strongly disagreed that contractors with project experience are not preferred. Respondents, 62.01% and 20.25%, strongly agreed that client's decisions in contract management can lead to project delays and contract extension period affects project cost, respectively. Respondents agreed with the following statements: contract duration may affect the project quality (39.24%); and lack of contract management does not cause time overruns (22.78%). On the statement about contract type determines the involvement of the project team, (41.77%) of the respondents had a neutral attitude. The calculated means and standard deviation of majority of statements is higher than the composite mean of 3.280 and standard deviation of 2.939, indicating that contract management influences completion of rural roads projects in Kenya positively.

5.2.5 Project Specifications and Completion of Rural Roads Projects in Kenya

Regarding the objective on determining the influence of project specification on completion of rural roads projects in Kenya, the study findings indicated the respondents strongly agreed that: project feasibility studies determines if a project is attainable (53.63%) followed by project scope is affected by design changes (50.63%) and projects fail to be completed even with preliminary studies undertaken (31.64%). Respondents strongly disagreed that project duration is determined by the project size (29.11%). Respondents agreed that design changes are inevitable in roads construction projects (53.16%); and that not all stakeholders are involved in project preliminary design (39.24%). Respondents were neutral on the statements that design specifications do not influence completion of projects (41.77%) and design changes is a major factor that contribute to project delays (37.97%). The calculated mean and standard deviation of majority of the line statements is lower than the composite mean of 3.481 and standard deviation of 3.069, indicating that the statements have a negative influence on completion of rural roads projects in Kenya.

5.3 Discussion of Findings

The following is the discussion of the study findings, on the objectives of stakeholders' participation, project financing, contract management, project specifications on completion of rural roads projects in Kenya

5.3.1 Completion of Rural Roads Projects in Kenya

The study findings revealed that 56.10% of the respondents strongly agreed road projects should be implemented within stipulated timelines. These findings concur with the views of Albate (2014), who stated that the road transport projects are deemed successful when completed in scheduled time, allocated budget and defined quality, because they are the key element of a country's economy's supply side potential and a crucial contribution to productivity and competitiveness, reflecting economic growth in the region. The study revealed that time overruns are common in road projects in rural areas (80.49%). The findings agree with the statement by World Bank (2015), that delays in the completion of infrastructure facilities is a critical problem with a global dimension, frequently leading to loss of production, disruption of work, loss of revenue through legal proceedings between contracting parties and abandonment of projects and project scope. 68.29% of the respondents strongly disagreed that inadequate project budget does not cause project delays. These findings concur with the observation of Chen (2017), who indicated that adequate funds should be provided to support the execution of a project in order to be successful. Pearson correlation was measured on the independent variables against the dependent variables. It was established that there was a positive coefficient between stakeholders' participation (co-efficient of 0.876 and p-value of 0.26), project financing (co-efficient of 0.771 and p-value of 0.28), contract management (co-efficient of 0.824 and p-value of 0.22) and project specification (co-efficient of 0.730 and p-value of 0.24). The co-efficient indicated that stakeholders' participation had the highest influence on completion of rural roads projects, followed by contract management, project financing and project specification having the lowest influence on the completion of rural roads projects in Kenya. During the interview session, an interviewee was asked if undefined project scope contributes to unsuccessful implementation of road transport projects. The response given was undefined road construction project scope means there are contradictions between the stated objectives, project cost, implementation time and even project appropriateness becomes questionable, which eventually result in unsuccessful or delayed delivery of

the facilities. The statement supports the quantitative findings as well as an observation by Levin and Chism and Armstrong (2010), that around the globe, project companies scale down capital road projects due to changes in project scope, lack of resources and cost volatility, which all affect timely completion of infrastructure projects.

5.3.2 Stakeholders' Participation on Completion of Rural Roads Projects in Kenya

In relation to the objective of assessing the influence of stakeholders' participation on completion of rural roads projects in Kenya, most respondents strongly agreed that stakeholders' participation leads to joint ownership of projects (82.27%) and stakeholders should be identified in the initial project phase (60.76%). This is an affirmation of a statement by Manowong and Ogunlana (2010), who indicated that stakeholder interests are accommodated for and collaborations made to at least fulfill the minimum specifications, leading to a sense of ownership of the projects. The studies also revealed that stakeholders should be involved in the entire project phase (41.77%). This is in support of the views of Harris & Vellutini (2012), that stakeholders have to be recognized as essential to success in the global setting because they can assist in the design and selection of suitable infrastructure projects, can assist during project implementation and even in evaluation during post execution period. Majority of line statements' means and standard deviations were higher than the composite mean of 3.560 and standard deviation of 3.229, indicating that stakeholders' participation influences completion of rural roads projects in Kenya. Pearson Correlation test done on project financing revealed a 0. 876 positive correlation with a p-value of 0.26, indicating there is a strong correlation between stakeholders' participation and completion of rural roads projects in Kenya. The study findings support the observation of Asian Development Bank (2012), that the stakeholders in a road construction project have to be considered for successful project implementation. In the interview session, an interviewee was asked what happened to projects when there lacks an understanding of which stakeholders to be involved in the project. The response given was that failure to recognize the relevant parties will likely generate major problems for a project. An understanding of the fact that stakeholders may have either positive or negative impact over a project is also important. Although stakeholders opposed to a project are often overlooked, the success of a project may be counterproductive to that. The statement

echoes the views of Atkin and Skitmore (2012), who emphasized that the need to gain support from the negative parties whenever possible in order to improve a project's chances of success.

5.3.3 Project Financing on Completion of Rural Roads Projects in Kenya

As concerning the objective of determining the influence of influence of project financing on completion of rural roads projects in Kenya, majority of the respondents (69.08%) strongly agreed that contractor should be paid in instalments for the project duration, cost variation is common during project implementation (53.16%) and completion of roads depend on availability of funds (49.37%). This resonates with the statement by Chen (2017), that that adequate funds should be provided to support the execution of a project in order to be successful. Jackson (2018) also agrees that accessibility of project funds is an important factor which influences project execution, and that late or slow release of project fund instalments particularly during the first phase of the project, is a significant barrier to effective project execution. 41.77% of the respondents disagreed that finance management is not important in projects. This is a contrary study finding to that of Wafula (2017), who noted that part of the financial resources allocated by governments for the maintenance roads projects are mostly misappropriated and where the funds are used appropriately, slow disbursement of the construction finances hinder the pace of infrastructure development, thus calling for proper financial management plans. The line statements relating to project financing had means and standard deviations that were higher than the composite mean of 3.516 and standard deviation of 3.195, indicating that project financing influences completion of rural roads projects in Kenya. Pearson Correlation test done on project financing revealed a 0.771 positive correlation with a p-value of 0.28, indicating there is a strong correlation project financing and the completion of rural roads projects in Kenya. When asked if delays in payment by government entities was a major contributor to the failure to meet the timeline for the Rumuruti-Maralal project, an interviewee answered that It was very challenging to have a good picture of the public construction projects from the beginning to the end and thus delays due to financial challenges a road construction project is high. The problem was compounded by the fact that the government's financial budget lasts for one financial cycle, although it will take longer than this time for most road projects. Constraints are likely to be encountered in having effective financing plans for road construction projects The findings are in line with the findings of a study

carried out by Hamzah (2012), who established that road construction projects often take a long time to complete, when financial problems arise and are not resolved in time.

5.3.4 Contract Management on Completion of Rural Roads Projects in Kenya

Concerning the objective of determining the influence of contract management on completion of rural roads projects in Kenya, study findings revealed that 59.96% of the respondents strongly disagreed that contractors with project experience are not preferred. This concurs with Kaming (2012) observation that inadequacy of competent and experienced contractors in most of the less developed countries necessitated outsourcing of external experts mainly from China, Israel and Japan in more than 85 percent of the road construction projects. The findings also revealed that 59.96% of the respondents strongly disagreed that client's decisions in contract management can lead to project delays. The study findings are in line with the conclusion drawn by Fapohunda and Stephenson (2015), that experienced contractors, clients and contract managers are able to foresee possible challenges that might be encountered in a project and thereby undertake necessary plans to proactively deal with such. 22.78% of the respondents indicated that lack of contract management does not cause time overruns. The findings differ with the views of Hussin and Omran (2012), who opines that contract management is a primary determinant of whether the project will be successfully completed or not, as contractual disputes cause project delays and cost overruns. Majority of the line statements relating to contract management had means and standard deviations that were higher than the composite mean of 3.280 and standard deviation of 2.939, indicating contract management positively influenced completion of rural roads projects in Kenya. Pearson Correlation test done on the variable of contract management against the dependent variable revealed a 0.824 positive correlation with a p-value of 0.22, indicating there is a strong correlation between contract management and completion of rural roads projects in Kenya. The researcher sought to establish if contract variation experience in Rumuruti-Maralal road had effects on completion of the road project and an interviewee responded changes in contracts and cost overruns lead to significant changes in proportion of contract price. In other cases, unclear regulations and legal bindings that govern the processes of awarding and shifting contracts lead to project delays. To counter the challenges, it was established that it's good to have improved payment processes, regulated contract variations and conflict management, which increases the time and cost efficiency of

projects. The response given agreed with the views of Godfrey, Pross and Alex (2016), who noted that there is a significant relationship between contract management and contract variations and project completion.

5.3.5 Project Specifications on Completion of Rural Roads Projects in Kenya

In relation to the objective of determining the influence of project specifications on completion of rural roads projects in Kenya, the study findings revealed that project feasibility studies determine if a project is attainable (53.16%). The study findings concur with the research by Macharia, (2016) that in practice, process for implementing road infrastructure projects starts with project preparation, which includes carrying out a design feasibility analysis in order to create a project plan. Respondents strongly agreed project scope is affected by design changes (50.63%) and design changes are inevitable in roads construction projects (53.16%). The findings concur with those of Dosumu and Clinton, (2017 who concluded that road construction work has historically isolated design and planning from building methods, resulting in some scale and design changes during implementation. Austin, Andrew and John, (2012) indicated that separating design and construction has resulted in serious problems where designs are made without consideration for constructability or sustainable environments, thus adversely affecting project efficiency. 37.97% of the respondents were neutral on the statement that design changes are a major factor that contribute to project delays. However, Chang (2016) observed that the reality is that some consequences of design changes are cost overrun issues, scheduling delays and loss of productivity, causing an adverse impact on the total cost of the project. The researcher further added that changes in design may have a significant effect on costs in the range from 10 to 25% percent of overall construction costs. The line statements relating to project specification had means and standard deviations that were higher than the composite mean of 3.418 and standard deviation of 3.069, indicating that project specification influences completion of rural roads projects in Kenya positively. Pearson Correlation test done on project specification revealed a 0.730 correlation with a p-value of 0.24, indicating there is a strong correlation between project specifications and completion of rural roads projects in Kenya. When asked if project delays attributable to design changes and errors are common, an interviewee said that cost overrun phenomena attributable to design errors and modifications in nature are common, therefore nearly every country is experiencing the unfavorable impact of changes in design on project cost efficiency. The causes of

design changes depended on project type and regional demography. It was added that most design changes generally occur due to interconnected actions of owners, consultants and contractors. The study findings concur with the views of Koskei (2012), that researchers consider clients to be the primary force behind changes in design while others accused consultants for constant changes. Nevertheless, contractors have also been described as the leading players in generating events that lead to the shift in design changes.

5.4 Conclusions

The study concluded that stakeholders' participation influence completion of rural roads projects in Kenya. This was established through identifying stakeholders in the initial project phase, involving stakeholders in the entire project phase so as to create understanding of project goals, considering the interests of all stakeholders, project managers being aware of stakeholders with high influence and that are necessary in road projects, understanding that stakeholders' consultations and participation leads to joint ownership of road projects.

The study finding helped to draw conclusion that project financing influence completion of rural roads projects in Kenya. The study revealed that completion of rural roads projects in Kenya depends on availability of funds, available road project funds from the government is limited, project funds should be released by the client on time, funds for road projects are should not be diverted to other projects, cost variation should be avoided or kept at bare minimum during project implementation and finally, the aspect of finance management should be embraced because its important in road projects.

The research findings concluded that contract management influence completion of rural roads projects in Kenya. Aspects of contract management that have positive influence are; project client should have experience in contract management; client's decisions in contract management can lead to project delays; contractors with project experience are preferred and contract extension period should not affect project cost and lack of contract management does cause time overruns.

Finally, the study concluded that project specification influence completion of rural roads projects in Kenya. The findings revealed that project scope is affected by design

changes, preliminary studies undertaken during the project inception period plays a big role in completion of road project, project feasibility studies determines if a project is attainable design specifications influence completion of projects, design changes are inevitable in roads construction projects and design changes are a major factor that contribute to project delays.

5.5 Recommendations

Based on research findings and conclusions, the study recommends that due to the high capital nature of the road transport projects, the need to construct new transport infrastructures and rehabilitate old facilities, government should ensure that stakeholders' participation in projects is comprehensive since they substantially influence or are influenced by a decision of another affecting the project activities. Understanding that a project's success is tagged to its stakeholders' being satisfied is a critical factor to be incorporated in rural roads projects in Kenya.

Transport infrastructure industry plays a crucial role in the growth of every nation. The study findings recommended that adequate funds should be provided to support the execution of a project in order to be successful. The findings also recommend the use of innovative methods of funding such as PPP ventures, which have arisen in the recent past. Financial sustainability is key to financing rural roads projects in Kenya.

The research study finding recommends that contract management activity should covers all tasks involved in drawing up, updating, reviewing and evaluating contracts and introducing processes and using software to improve the effective recording and record keeping of contractual terms and conditions. Further recommendation is made on the use of creative contracting approached, established as a good practice leading to effective construction process and complete projects.

Finally, from the study finding, it was established that design changes are inevitable in roads construction projects and design changes are a major factor that contribute to project delays. It's therefore recommended that successful management of the crucial and complex interface between design and pre-construction activities should be observed since it is important in the realization of projects completed within quality, cost and timelines.

5.6 Suggestions for Further Research

Areas for further research were suggested as follows:

1. The study having limited itself to the completion of rural roads projects in Kenya. A replication of the studies can be done on completion of other road projects such as county government road projects, donor funded road projects, CDF funded roads, PPP scheme roads and urban road projects.
2. Consultation taking place with all project stakeholders in relation to project decision making process as well as stakeholders' condition of works can derail construction process can be explored further.
3. Contractor's payment being equal to the construction work done has created a research gap. Contractors' payment in instalments during the project duration attained a neutral attitude from the respondents. Further research on the same can be pursued.
4. The relationship between contract duration and project quality can be studied. The influence of policies on road contract's level of involvement can also be researched on.
5. Finally, the influence of the contract type and involvement of the project team can be researched.

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APPENDICES

Appendix I: The University of Nairobi Introduction Letter

UNIVERSITY OF NAIROBI
OPEN, DISTANCE AND e-LEARNING CAMPUS
SCHOOL OF OPEN AND DISTANCE LEARNING
DEPARTMENT OF OPEN LEARNING
NAIROBI LEARNING CAMPUS

Your Ref:

Our Ref:

Telephone: 318262 Ext. 120

Main Campus
Gandhi Wing, Ground Floor
P.O. Box 30197
N A I R O B I

REF: UON/ODeL/NLC/32/251

29th October, 2020

TO WHOM IT MAY CONCERN

RE: JAMES KARANJA MICHUGU - REG NO: L50/71499/2014

This is to confirm that the above named is a student at the University of Nairobi, Open Distance and e-Learning Campus, School of Open and Distance Learning , Department of Open Learning pursuing Masters of Art in Project Planning and Management.

He is proceeding for research entitled ***"Factors Influencing Completion of Rural Roads Projects in Kenya: A case of Rumuruti-Maralal Road Project in Laikipia and Samburu Counties"***.

Any assistance given to him will be highly appreciated.

UNIVERSITY OF NAIROBI ODEL CAMPUS P. O. Box 30197, 29 OCT 2020 NAIROBI NAIROBI LEARNING CENTRE

CAREN AWILLY
CENTRE ORGANIZER
NAIROBI LEARNING CENTRE

Appendix II: NACOSTI PERMIT

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR
SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **231719**

Date of Issue: **06/November/2020**

RESEARCH LICENSE

This is to Certify that Mr.. James Michugu Karanja of University of Nairobi, has been licensed to conduct research in Laikipia, Samburu on the topic: Factors Influencing Completion of Rural Roads Projects in Kenya: A case of Rumuruti-Maralal Road Project in Laikipia and Samburu Counties for the period ending : 06/November/2021.

License No: **BAHAMAS ABS/P/20/7480**

231719

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR
SCIENCE,TECHNOLOGY &
INNOVATION

Verification QR Code

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APPENDEX III: Letter of Transmittal of Research Instruments

JAMES KARANJA MICHUGU
TEL: +254722757165
NAIROBI, KENYA
EMAIL: jkmichugu@yahoo.com

Dear Respondent,

RE: REQUEST FOR YOUR PARTICIPATION IN A RESEARCH STUDY

I am a graduate student undertaking a degree in Master of Arts in Project Planning and Management at the University of Nairobi. I am conducting a research on **Factors Influencing Completion of Rural Roads Projects in Kenya: A Case of Rumuruti - Maralal Road Project in Laikipia and Samburu Counties**. You have been selected to assist in providing the required information for this research study because your views are considered valuable to this study. I am therefore requesting you to fill this questionnaire. Please note that any information given will be used for research purpose only and your identity will be treated with utmost confidentiality.

Yours Faithfully,

James Karanja Michugu

APPENDIX IV: Questionnaire for the Staff of KeNHA, Rumuruti - Maralal's Consultant and Contractor

The purpose of this study is to investigate **Factors Influencing Completion of Rural Roads Projects in Kenya: A Case of Rumuruti - Maralal Road Project in Laikipia and Samburu Counties**

This questionnaire is completely anonymous. Your answers will be treated with strict confidentiality.

Instructions: Please answer the following questions by placing a tick (√) in the appropriate box spaces provided or by writing your answers in the spaces provided.

SECTION A: DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Kindly put a tick [√] to answer the following questions:

1. Which organization are you working in?

KeNHA [ ] Contractor [ ] Consultant [ ]

2. What is your highest academic qualification?

PhD [ ] Masters [ ] Undergraduate [ ] Diploma [ ] Certificate [ ]

3. For how long have you been working in this organization?

1 to 3 years [ ] 4 to 6 years [ ] 7 to 9 years [ ] 10 to 12 years [ ] Over 12 years [ ]

4. Indicate the position you hold in your institution.

Project Developers [ ] Project Engineer [ ] Financial advisor [ ] Designer [ ]

Contract Managers [ ] Risk Managers [ ] Surveyor [ ] Architects [ ]

Any other (specify).....

SECTION B: COMPLETION OF RURAL ROADS PROJECTS IN KENYA

To what extent do you agree with the following statements that relate to Completion of Rural Roads Projects in Kenya?

Indicate with: **Strongly disagree=1; Disagree=2; Neutral=3; Agree=4; Strongly Agree =5**

Statements	**1**	**2**	**3**	**4**	**5**
Projects should be implemented within stipulated timelines					
Time overruns are common in road projects in rural areas					
Inadequate project budget does not cause project delays					
Budget over runs can be controlled by proper project planning					
Project quality is affected by unclear evaluation standards					
Project budget does not affect duration of a project					
Clients' demands affect timely completion of road projects					
Project success depends on the client's satisfaction					
Project scope means creating all project deliverables					

SECTION C: STAKEHOLDERS' PARTICIPATION

1. In your opinion, does stakeholders' participation influence rural roads project completion?

Yes [ ] No [ ]

If No, Kindly

explain……..

.……

……

……

2. To what extent do you agree with the following statements that relate to stakeholders' Participation?

Indicate with: **Strongly disagree=1; Disagree=2; Neutral=3; Agree=4; Strongly Agree =5**

Statements	**1**	**2**	**3**	**4**	**5**
Stakeholders should be identified in the initial project phase					
Stakeholders should be involved in the entire project phase					
Stakeholders involvement creates understanding of project goals					
Stakeholders' interests cause project delays					
Stakeholders with high influence are not necessary in road projects					
Stakeholders participation leads to joint ownership of projects					
Consultation with all stakeholders leads to slow decision making					
Stakeholders' condition of works can derail construction process					

SECTION D: PROJECT FINANCING

1. In your opinion, does project financing influence rural roads project completion?

Yes [ ] No [ ]

If No, Kindly

explain……..

……

……

……

2. To what extent do you agree with the following statements that relate to Project Financing?

Indicate with: **Strongly disagree=1; Disagree=2; Neutral=3; Agree=4; Strongly Agree =5**

Statements	**1**	**2**	**3**	**4**	**5**
Completion of roads depend on availability of funds					
Available road project funds from the government is limited					
Finance management is not important in projects					
Cost variation are common during project implementation					
Project funds should be released by the client on time					
Funds for road projects are constantly diverted to other projects					
Contractor's payment is equal to the construction work done					
Contractor should be paid in instalments for the project duration					

SECTION E: CONTRACT MANAGEMENT

1. In your opinion do contract management influence rural roads project completion?

Yes [ ] No [ ]

If No, Kindly

explain……..

……

2.To what extent do you agree with the following statements that relate to Contract Management?

Indicate with: **Strongly disagree=1; Disagree=2; Neutral=3; Agree=4; Strongly Agree =5**

Statements	**1**	**2**	**3**	**4**	**5**
Project client should have experience in contract management					
Client's decisions in contract management can lead to project delays					
Contract duration may affect the project quality					
Contractors with project experience are not preferred					
Guidelines on road contract's level of involvement are unclear					
Contract type determines the involvement of the project team					
Contract extension period affects project cost					
Lack of contract management does not cause time overruns					

SECTION F: PROJECT SPECIFICATIONS

2. In your opinion do project specifications influence rural roads project completion?

Yes [ ] No [ ]

If No, Kindly

explain……..

……

……

……

2. To what extent do you agree with the following statements that relate to Project Specifications?

Indicate with **Strongly disagree=1; Disagree=2; Neutral=3; Agree=4; Strongly Agree =5**

Statements	**1**	**2**	**3**	**4**	**5**
Project scope is not affected by design changes					
Projects fail to be completed even with preliminary studies undertaken					
Design specifications influence completion of projects					
Not all stakeholders are involved in project preliminary design					
Design changes are inevitable in roads construction projects					
Design changes is a major factor that contribute to project delays					
Project feasibility studies determines if a project is attainable					

Project duration is determined by the project size					

Appendix V: Interview Guide for KeNHA's project manager, Rumuruti-Maralal Contractor's Team Leader and Consultant's Deputy Project Manager

1. According to your expertise, is time overruns common in road projects in rural areas?
2. Do you think that undefined project scope contributes to unsuccessful project?
3. Rumuruti-Maralal road was not implemented within stipulated timelines. What were the challenges?
4. Road construction has various stakeholders. At what stage should project stakeholders be identified?
5. Do you agree with the notion that stakeholders should be involved in the initial project phase?
6. Are stakeholders with high influence necessary in road projects in rural areas?
7. Were cost variation experienced during the road project implementation?
8. For this road project, were funds released by the client on time?
9. Are there guidelines on the level of involvement in contract management?
10. It said that contract extension period affects project cost. Is that the case?
11. What are your thoughts on design specifications influencing completion of road projects?
12. Project feasibility studies determines if a project is attainable or not. Do you agree?
13. Do you think there is a relationship between project scope and project duration?
14. Are design changes is a factor that contribute to project delays? Kindly explain.