STAKEHOLDER PARTICIPATION IN PROJECT LIFE CYCLE MANAGEMENT, RISK MANAGEMENT PRACTICES AND COMPLETION OF URBAN ROADS TRANSPORT INFRASTRUCTURE PROJECTS IN KENYA

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DECLARATION

This thesis is my original work and has not been submitted for the academic award in any other University.

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DEDICATION

This thesis is dedicated to my lovely wife Esther Nyabera Matu, and my children Maureen Nduta, Joel Matu and Faith Muthoni, my daughter-in-law Esther Lilian, my grandchildren, Victoria and Joy and my brother Wilfred Muriithi.

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ABBREVIATIONS AND ACRONYMS

AfDB	African Development Bank
AIDI	African Infrastructure Development Index
ANOVA	Analysis of Variance
ANP	Analytic Network Process
CBA	Case-Based Reasoning
CDF	Constituency Development Fund
CSF	Critical Success Factors
EPC	Engineering Procurement and Construction
ERS	Economic Recovery Strategy
FST	Fuzzy Set Theory
FTA	Fault Tree Analysis
GDCF	Gross Domestic Capital Formation
GDP	Gross Domestic Product
GNP	Gross National Product
GoK	Government of Kenya
IAPP	International Association for Public Participation
IDIs	International Development Institutions
IQ	Intelligence Quotient
ISO	International Organization for Standardization
KAA	Kenya Airports Authority
KARA	Kenya Alliance of Resident Association
KeNHA	Kenya National Highways Authority
KPA	Kenya Ports Authority
KPIs	Key Performance Indicators
KPLC	Kenya Power & Lighting Company
KPMG	Klynveld Peat Marwick Goerdeler
KRB	Kenya Roads Board
KURA	Kenya Urban Roads Authority
LCM	Life Cycle Management
LDC	Least Developed Countries
M&E	Monitoring & Evaluation

MPCU	Municipal Planning and Cooridinating Unit
NACOSTI	National Commission of Science, Technology, and Innovation
NLC	National Land Commission
NTSA	National Transport and Safety Authority
PAPs	Project Affected Persons
PLS-SEM	Partial Least Squares Structured Equation Modeling
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
PWC	Price Water Coopers
QDF	Quality Development Functioning
REPARED	Regional Partnership for Resource Development
SACCO	Savings and Credit Cooperative
SDGs	Sustainable Development Goals
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TOPSIS	Techniques of Preference by Similarity of Idea Solution
UN	United Nation
UNHCS	United Nations Centre for Human Settlements
WBS	Work Breakdown Structure

ABSTRACT

The focus of this study was to establish the influence of stakeholder participation in project lifecycle management, risk management practices, on completion of urban road transport infrastructure projects in Kenya. The unit of analysis was the road projects implemented by Kenya Urban Roads Authority. The study objectives were; to determine the influence of participation in project initiation, design, construction and project closure on the completion of urban road transport infrastructure projects. Pragmatic research paradigm was chosen for this study to facilitate mixed research methods. The study adopted a descriptive survey and correlational research design. The target population was 1593 comprising of Kenya Urban Roads Authority (KURA) Project Implementation teams' members (375), KURA project planners and Directors (23), Road contractor's project management teams (781), Consultants construction supervision teams (85), Representatives of Project Affected Persons (213), and Complimentary service providers (116). The total sample size of the study was 309 respondents. The sampling procedure was purposive and simple random sampling. A five-point Likert type scale questionnaire was used to collect quantitative data while interview guides were used to collect qualitative data. The statistical tools of analysis that were used for quantitative data were frequencies, percentages, arithmetic means and standard deviation while statistical tools that were used for inferential statistics were Pearson's Product Moment Correlation, Linear Regression, and Multiple Regression. Fisher (F) was used to test the null hypotheses. The study found that stakeholder participation in project initiation had a positive and significant influence on completion of urban road transport infrastructure projects in Kenya ($r = 0.859$, $R^2 = 0.737$, $F (4, 209) = 146.501$, $p<0.001<0.05$). The findings helped to establish that stakeholder participation in project planning had a positive and significant influence on the completion of urban road transport infrastructure projects in Kenya ($r = 0.838$, $R^2 = 0.703$, $F (4, 209) = 123.43$, $p<0.001<0.05$). According to the findings, stakeholder participation in project execution had a positive and significant influence on completion of urban road transport infrastructure projects in Kenya ($r = 0.796$, $R^{2 =}$ 0.634, $F (4, 209) = 90.503$ and $p<0.000<0.05$). The findings from the study further revealed that stakeholder participation in project closure had a positive and significant influence on the completion of urban road transport infrastructure projects in Kenya ($r = 0.855$, $R^{2 =}$ 0.730, $F (4, 209) = 141.597$ and $p<0.000<0.05$) and that combined stakeholder participation in Project Life Cycle Management significantly influence completion of urban road transport infrastructure projects in Kenya. The results were ($r = 0.849$, $R^2 = 0.721$, $F (4, 209) = 134.785$ and $p<0.000<0.05$). In respect to risk management practices, the findings show that it had a positive and significant influence on completion of urban road transport infrastructure projects in Kenya ($r = 0.895$, $R^2 =80$, $F (4, 209) = 211.128$ and $p<0.000<0.05$) and that significant relationship between Combined Stakeholder participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya depends on risk management practices ($R^2 = 0.863$, $R^2\Delta = 0.142$, $F (5,208) =106.341$, $p<0.001<0.05$). In general, the seven hypotheses which had been stated in null form were tested and rejected leading to the acceptance of alternate hypotheses. The study concluded that stakeholder identification had the greatest influence on completion of urban road transport infrastructure projects in Kenya followed by needs assessment, setting of goals and objectives and feasibility studies; that, there was a positive influence of stakeholder participation in project planning on completion of urban road transport infrastructure projects in Kenya and there is need for key stakeholders to have the necessary qualification and experience in developing a work breakdown structure for the project. The study recommends development of a policy framework in the urban road transport infrastructure projects to be enacted to sensitize stakeholders on their participation in the entire project life cycle management stages. The study recommends that Governments should develop a framework to sensitize potential developers or their representatives, a mandatory structured pre-construction investment seminar with the aim of sensitizing them on the significance of every stage of a project lifecycle management.

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Road transport infrastructure network is often seen as the arteries through which a country's economy survives since roads are expected to link economic entities such as markets, employees to workplaces, students to learning institutions, and other socio-economic activities. Buchan and Pharoah (2014) opines that a resilient economy and contemporary society depend on a multifaceted and strong transport infrastructure that allows movement of business and people. Yet much of the developing world, Africa in included, lacks satisfactory transportation infrastructure (Ali, Barra, Berg, Damania & Nash, 2015). Accordingly, the study noted that investment in transportation is a crucial strategy for development. In Sub-Saharan Africa, approximately $6.8 billion is expended annually on bulding roads, which is a large sum when compared to other segments of the economy. Ali, *et al*., (2015) adds that in spite of this kind of expenditure on transportation, valuations aimed at establishing the impact of these significant investments in terms of positive or negative outcomes have not been carried out and the policies for assessing which road projects to fund have been disorganized and unreliable

Globally, cost overrun and delays are major impediments for project completion in the road construction industry. Battaineh (2006) noted that in Jordan, the usual rate of actual project completion duration to planned duration was 160.5% for road projects. Research conducted in Jordan, United States, Palestine, Saudi Arabia and Hong Kong respectively found that a big percentage of road projects do not meet their objectives and the rate of completion of road projects was an average of 30% with average budget overruns of 10-30% (UNCTAD, 2017; UNRWA, 2017); Sambasivan & Soon, 2017); Chan & Kumaraswamy, 2017).

Urban centres concentrate 80% of the world's economic output, as they are main hubs of production and consumption, and nodes of international trade and commerce (Government of Kenya, 2008). In Kenya, many urban centres exist and many more are upcoming due to the concept of devolution, which created 47 counties. Therefore, ensuring proper management of roads especially in existing and upcoming urban centres holds key to the realization of the Kenya Vision 2030 dream. In Kenya, the government through its vision 2030 goals has realized the need for quality road network since the road transport is very important in the transportation sector as it carters for over 93% of all freight and passenger traffic in the country. The Kenya Urban Roads Authority (KURA) is mandated to manage, develop, maintain and rehabilitate all public roads within towns and cities. However, KURA has faced problems emanating from the 2010 constitution, road reserves encroachments, inadequate finances, inadequate capacity to execute numerous projects that are demanded within the 47 counties in Kenya (KURA, 2017). Therefore, there is need to address the problem of unpredictable successful road project completion in terms of time of delivery, the cost, and the expected quality.

Road infrastructure construction in urban areas is faced with various challenges arising from high population densities that occupy most of the land leaving little room for the provision of basic amenities like roads, water supply and sanitation, power and other services (KURA, 2017). The challenge is further exacerbated by a lack of proper planning of the urban centres to ensure the smooth implementation of the much-needed infrastructure facilities. These challenges have led to the failure of many development projects witnessed across Africa. The solution to these challenges has been studied by many scholars and appears to point towards stakeholder participation in the projects that affect their social-economic life.

Lindborg (2013) hints that the roots of contemporary stakeholder participation thinking dates back to the 1930s. Even though shareholders were rated first in law for corporations, society started to wonder what, if any, responsibility the corporation had to the public at large Environmental, health and safety issues extended the debate, as did community relations. Though the Stanford Research Institute introduced the definition of stakeholder in 1963, the concept was not linked with management strategy until 1984 (Oliveira & Rabechini, 2019). Due to the letdown of development projects in the 1950s and 1960s, social workers and field activists started to call for the presence of populations concerned with the development in project planning and implementation (Armah, Yawson & Johanna, 2009). The notion then was that such projects were unsuccessful because local populations were left out of the decision-making process Public participation has its roots in the advancement of governance globally. According to Njenga (2009), the International Development Institutions (IDIs) believe that people's involvement in their development would speed up "attempts to promote economic and social progress" and guarantee an equitable distribution of development benefits(Wen & Qiang, 2019).

The role of public participation has been embraced by several countries with the object of enhancing, promoting and facilitating public participation in governance processes. For instance, the Republic of Kenya has constitutional provisions for public participation as provided in the Constitution of Kenya (2010). Additionally, in accordance with the County Governments Act 2012, and section 126 of the Public Finance Management, Act 2012, the County Governments are mandated to involve the public and other stakeholders in development projects through collection of their views and involvement in the decision-making process. Kenya’s National Assembly recently passed a new Act, Public Participation Act, 2018, to reinforce the need for stakeholder participation.

In the area of transport infrastructure projects, stakeholders’ perception is crucial considering that numerous stakeholders are required to assist in the risk identification and in risk management, which can severely obstruct proper completion of projects, hence may result in cost overruns and exceeding time schedules due to conflicts and controversies (TISA, 2010). Stakeholders bring a wide range of skills, knowledge, and experiences to the project and if they are well managed they can help to make the project more successful. Jaafari (2011) observed that the success or failure of many conventional development projects and programmes has been attributed to stakeholders’ inclusion or lack of involvement in the project execution cycle. Despite the importance of stakeholders in transport infrastructure projects, little has been done to point out the nature of the relationship between the stakeholders’ involvement in the project execution cycle and the completion of urban road transport infrastructure projects. It is against this backdrop that this research study was conceived.

1.1.1 Completion of Urban Road Transport Infrastructure Projects

Successful completion of urban road transport infrastructure projects is critical to national development and could be effectively measured within the realm of project management systems or processes. The African Development Bank (AfDB) maintained that transport infrastructure development in Sub-Saharan African countries had been an area of tremendous focus by most governments (AfDB, 2014). The deprived nature of the physical infrastructure such as roads and railways holds back the productivity of the economy in many developing countries. In fact, the African Development Bank in 2011 ranked African Infrastructure Development Index (AIDI) among the four worst performing sectors globally. Poor transport infrastructure does not only limit domestic productivity but also poses huge challenges to the success of regional integration within the least developed countries including (Africa Competitiveness Report, 2013).

In project management practice, project completion is measured using the golden triangle of time, cost and scope or quality (Shariatfar, Beigi & Mortaheb, 2019). The project management body of knowledge (PMBOK) guide published by the Project Management Institute (PMI, 2013) supports this statement, project success criteria consist of the golden triangle (time, cost, quality) and key project stakeholder's satisfaction and their incorporation to the project. The key point is that three of these success components must meet stakeholder's satisfaction where there is a link between their interest and these components. Boukanos (2017) conducted research on project success criteria using both theoretical analysis and qualitative data taken from a specific working environment (Geodyktio company) utilizing the balanced scorecard method. It became obvious that there is no consensus on project success definition. The study discovered several different success definitions from various authors proposing sets of criteria and frameworks for the evaluation of projects. This is due to a high frequency of studies using client satisfaction or stakeholders' satisfaction as a success criterion. The study concluded that the cost, time, quality or technical performance, customer satisfaction, and key stakeholders' satisfaction were the main criteria for measuring project success. Additionally, Turner, Baccarini and Collins (2014) identified that project success may be perceived differently by different stakeholders over different timescales.

Turner, Grude and Thurloway (2012) suggested that the project stakeholders, including the project managers, the project teams, and suppliers, judge success on completion of the project (at its closure). The operators of the project's output and the consumers of the product it produces judge success in the months following the closure or end of the project based on how well it achieves its immediate business objectives while investors or financiers of the project judge success in the years following the end of project based on how well it achieves corporate strategy and delivers desired business development. Shenhar and Dvir (2017) extended Turner's model and identified five categories of project success: efficiency, impact on the team, impact on the customer, business success, and preparing for the future.

Measurement of project success is a real challenge and quite a complex task. Completion measurement is also a must for all organizations executing any type of projects because if success cannot be measured, it cannot be improved upon (Scherer, 2019). Traditionally, cost, schedule, quality, and safety are the objectives considered as the most critical to the success of construction projects. The proposed research identifies four completion indicators; completion within cost, within time, within quality standards and stakeholder satisfaction.

The overall project completion will be given by combining the variables identified with the corresponding weights. The completion indicators represent efficiency in terms of cost, time, quality, and stakeholder satisfaction. Each of these four indices is quantitatively determined and transformed into a standard scale (Abdou, 2012).

1.1.2 Stakeholder Participation in Project Life Cycle Management

Stakeholder participation in all stages of the project lifecycle management has been considered vital in contributing to the completion of development projects apparently because of the impact and interest various stakeholders have on the project. Stakeholder participation in projects can be termed as a range of practices in which organizations take a well-thought-out methodology to involve stakeholders (PMI, 2013). Stakeholder participation has been used for a variety of organizational purposes: as a way for stakeholders to be acquainted with organizational accountability and responsibility, to obtain stakeholder contributions, control risk, construct an organizational image and accomplish managerial control.

Burton, Malone and Huq (2013) studied stakeholder engagement approaches and noted that they vary from quite passive interactions, where the stakeholders give information, to "self-mobilization", where the stakeholders themselves instigate and design the process. He says that different levels of participation will be appropriate for different stages of the project. He, however, emphasizes the importance of stakeholders understanding how they are being involved, how the information they provide will be used and whether they have any power to influence decisions. Projects follow a predictable pattern or life cycle. A project life cycle consists of several stages during which deliverables are created and end with the approval of the deliverables. A project goes through various stages to completion. The project life cycle process may vary along the deliberate and evolving continuum.

The project management life cycle has four phases: initiation, planning, execution, and closure. Project stakeholders' involvement in every phase of the project lifecycle is a critical component of project management literature. In the context of this study, stakeholder participation in project life cycle management would be defined as a deliberate involvement of the individuals or groups who may affect or be affected by the project content or outcome in the various stages or phases of the project management. In other words, it involves the process of engaging all persons or groups who have a defined interest in the initiation, planning, and execution and project closure phases of a project. Dealing with individuals, institutions or groups who may affect or may be affected by the project processes, contents, or outcomes has been recognized as a problematic task within project management (Silva, Jerónimo & Vieira, 2019). This is so since, many challenges are associated with the stakeholder, and many projects are considered by the fact that stakeholders' expectations are not adequately met or considered especially because different stakeholders may define project success factors otherwise (Davis, 2014).

1.1.2.1 Participation in Project Initiation

Project initiation is the starting phase of the project execution cycle. It is in this initial stage that the project is developed as an idea, the project goals are defined and the project viability is established. According to Abowitz and Toole (2010), the initiation phase of the project life cycle management of infrastructure projects plays a crucial role in planning, execution and determines the end result of the entire project. The purpose of the initiation phase is to establish if adequate demand exists for the project to begin collecting the necessary background information for project development. In an ideal situation, this is the phase where stakeholders are identified and the project team is established. Aken (2017) observed that during the project initiation phase, the needs are identified and prioritized by the stakeholders who also identify the source of the problems.

Mulwa (2011) observed that needs identification is important in developing the capacity of grassroots communities, who, according to Jacobs (2016), are the primary stakeholder group, but other stakeholders with specialized capacities and responsibilities are essential. Therefore, the identification of relevant stakeholders should be done during the early stages of the program or project in order to give proper meaning to a development intervention. In Jacob's view, early contacts will contribute to the identification of issues and priorities. In this case, stakeholder involvement in project life cycle management is particularly important when interest groups are expected to play an active role in the implementation process and in operation and maintenance (Paton & Andrew, 2019).

A combined development of the project briefing is also a vital and rudimentary requirement in determining project outcomes. According to the Project Management Body of knowledge , a project brief is defined as (PMBOK, 2016): "A high-level outline (strategic specification) of stakeholders (customers/clients) needs and requirements for a project." This implies that stakeholder involvement in this early project stage (identification) is essential for unambiguous specifications. Therefore, key client and stakeholder presence at that stage are critical during project brief meetings (Tammer, 2009). In Tammer's opinion, the project briefing tries to enhance project ownership and accessibility by all concerned parties. Although stakeholders' participation in project initiation is seen as being important, empirical investigation of the relationship between stakeholders' participation in project initiation and project completion is still lacking and the results are inconclusive, hence this study. Furthermore, the importance of stakeholders taking part in in project planning stage should be clearly defined.

1.1.2.2 Participation in Project Planning

The project-planning phase begins after the initiation phase and it is the stage where the entire project is planned. The planning process includes scope definition, the redefinition of project objectives and developing the course of action required to attain those objectives. According to Williams (2009), the primary purpose of planning is to establish a set of directions in sufficient detail to tell the project team exactly what must be done, when it must be done, what resources will be required to produce the deliverables of the project successfully, and when each resource will be required. Project planning defines the project activities and end products that will be performed and describes how the activities will be accomplished. According to Chioma (2012), the purpose of project planning is to define each major task, estimate the time and resources required, and provide a framework for management review and control

Communication planning is crucial in ensuring that all stakeholders are aligned with the goals and objectives of the project. Aje (2012) who observed that unless all parties to the planning process have a clear understanding of what it is the project is expected to deliver, planning is sure to be inadequate or misguided supports this. The objective of the scope definition is to define the time and cost required to complete the project to the client's satisfaction (PMI, 2013). The project plan must be designed in such a way that the project outcomes also meet the objectives of the parent organization. It is crucial that the project's objectives be clearly tied to the overall mission, goals, and strategy of the organization. Without a clear beginning, project and later progress can easily go astray (Sarnoe, Paucar-Caceres, Pagano & Castellini, 2019).

Project planning generally consists of: determining how to plan, developing the scope statement; selecting the planning team; identifying deliverables and creating the work breakdown structure; identifying the activities needed to complete those deliverables and networking the activities in their logical sequence; estimating the resource requirements for the activities; estimating time and cost for activities; developing the schedule; developing the budget; risk planning; gaining formal approval to begin work (Albert, 2014). Additional processes, such as planning for communications and for scope management, identifying roles and responsibilities, determining what to purchase for the project and holding a kick-off meeting is also generally advisable. Project planning activities require that project stakeholders develop a baseline plan involving; the specification of required project resources and their allocation; and the determination of the methods to be used to deliver the project end product, respond to critical events and evaluate activities and time schedule. From the works of Kulkarni, Huckfeldt, and Bargstädt (2014), it has been noted that better planning of projects should analyze successive increments or distinct phases of activity. According to them, this way the return to each relatively small increment can be evaluated or judged separately.

The role and importance of stakeholder participation in planning are already being noticed in projects undertaken by several NGOs, some projects funded by governments and multilateral donor agencies. According to Save the Children (2010), practice shows that institutions, NGOs, governments, and donors are acknowledging the development, role, and importance of stakeholder participation in development activities and are seeing the benefits. However, in many contexts and for different reasons, stakeholders tend to be more involved in implementing, monitoring and evaluating programs, and less involved in strategic planning and the design of programs. Ling and Ma (2014) state that each program and project should be planned and designed with a goal of increasing the realization of stakeholder's rights to survival, protection, development and or participation. Participatory project planning will thus influence the project planning and the realization of stakeholders' right to participation. This, however, should not end here. The stakeholders should be offered opportunity to actively extend their role in the project execution stage to minimize any deviations that would adversely affect the project in terms of timely completion and meeting required standards.

1.1.2.3 Participation in Project Execution

Project execution includes both the pre-construction and construction processes. Pre-construction activities involve the procurement of supplies and financing, site preparation, and potentially the manufacture of construction supplies (Maunda & Moronge, 2016). The construction process itself must remain flexible to adjust for unanticipated circumstances regardless of action plan guidelines. Maintaining communication lines with stakeholders is critical for progress.

Project execution ensures that stakeholders are actively involved in the execution of project activities. This enables planned project activities to be carried out in an effective and efficient way while ensuring that measurements against project plans, specifications, and the original feasibility concept continue to be collected, analyzed and acted on throughout the project lifecycle. According to Project Management Institute (2013), project execution relies heavily on the plans developed in the planning phase and without a defined project activities execution process, each project would implement activities using their own best practices, experience, and methods; allowing certain control, tracking and corrective action activities to be missed. This may include changes to expected activity durations, changes in resource productivity and availability and unanticipated risks. During the project execution phase, the project team ensures that benefits management, stakeholder management, and project governance are executed in accordance with established policies and plans. Using these plans, the project team acquires and marshals the resources needed to accomplish the goals and benefits of the project. It involves managing the cost, quality and scheduled plans. The project team also ensures that all project stakeholders receive the necessary information in a timely manner (Meridith & Mantel, 2009).

When stakeholders participate in project planning and can influence the design of projects and programs to more effectively increase the realization of their rights, their participation in activity execution and monitoring is likely to be more meaningful. The more the stakeholders know about a project, the more they create a greater sense of ownership and engagement in its implementation. It is at the activity execution stage that the stakeholders mostly participate in projects. Upon completion of construction, it is paramount the stakeholder take stock of what has been happening since the beginning of the project. This can only happen if the last stage project life cycle, which closure, bring on board all stakeholders to give their opinions during handover.

1.1.2.4 Participation in Project Closure

Follow the completion of construction work, the project is handed over for use by the project beneficiaries. Heldmann (2018) states that project closure is the last phase of the project life cycle and must be conducted formally so that the business benefits delivered by the project are fully realized by the customer. Project closure involves releasing the final deliverables to the customer, handing over. The last remaining step is to undertake a post-implementation review to quantify the level of project success and identify any lessons learned for future projects. Following the acceptance of all project deliverables by the customer, the project will have met its objectives and be ready for closure (Andersen, 2009). The project manager is responsible for undertaking each of the activities identified in the project closure report, and the project is closed only when all the activities listed in the project closure report have been completed (Kliem, 2009).

1.1.3 Risk Management Practices

Risk Management practices in Kenya are hardly practiced on infrastructure projects apparently due to low levels of awareness and knowledge. There are no standards set for risk management in infrastructure projects. In developed countries, however, risk management has become a compulsory part of universal project management and an essential part of effective project management (Burcar, Radujković & Vukomanović, 2013). Risk management can be defined as the organized procedure of identifying, evaluating, and responding to risks. It includes exploiting the probability and outcomes of positive events and minimizing the probability and outcomes of events that are harmful to the project's objectives. The most effective projects exhibit capability to manage risks more efficiently, which results toward positive outcomes and results in safer projects, lower costs, and projects being completed on time (Greiman, 2013). Risk management is considered to be a major success factor for all types of projects and an interesting study and development topic, especially for large infrastructural projects since it assists project managers to anticipate any delays to projects (Grant, Cashman & Christensen, 2009). Proper management of risks is considered as facilitating the completion of large and complex infrastructure project by identifying, evaluating and controlling risks and uncertainties, while and the complexity of the decision-making process, among other factors.

Risk management is an expanding field, which the literature has shown can be used not only to control against loss but also as a way to achieve greater rewards (Dey, 2012). It is also significant as, analyzing and assessing potential risks in the early stages of a project help to determine whether the project should be executed at all. The identification phase is considered to be the most important stage of risk management because once a risk has been identified, it can be managed (Haifang, Shimiao & Danfeng, 2010). Furthermore, the sooner risks are identified, the more the cost and effort of mitigating them can be reduced.

Compared with many other industries, the construction industry is subject to more risks due to the unique features of construction activities, such as long period, complicated processes, abominable environment, financial intensity and dynamic organization structures (Fukayama, Fernandes & Ebecken, 2009). Hence, taking effective risk management techniques to manage risks associated with variable construction activities has never been more important for the successful delivery of a project.

Previous research has mainly focused on examining the impacts of risks on one aspect of project strategies with respect to cost (Dainty, Cheng & Moore, 2014), time (Shen, 2009) and safety (Tam, Zeng & Deng, 2014). Some researchers investigated risk management for construction projects in the context of a particular project phase, such as conceptual or feasibility phase (Uher & Toakley, 2011), design phase (Chapman, 2017), construction phase (Abdou, 2012), rather than from the perspective of a project life cycle, (initiation, planning, execution, closure or commissioning). However, some researchers like Goh and Hoffman (2013) identified 19 risk factors in the life cycle of the project under four heads such as planning, design, procurement, construction and commissioning stages thus omitting the project initiation stage. A construction project is plagued with various risks in all the stages of the life cycle of the project, (Zhao, Lucus & Thabet, 2010) and consequently Risk Management should be emphasized in all stages of a construction project, irrespective of the project size to guarantee the achievement of project objectives (Hwang, Zhao & Gay, 2013). On the other hand, little research has queried the moderating effect of risk management practices on the relationship between stakeholder participation in Project Life Cycle Management and completion of urban road transport infrastructure projects.

Mohammed (2015) researched on risk and stakeholder participation on a major road and bridge infrastructure project and noted that to be successful; the function of project teams ought to go beyond the realm of theory in finding other means to handle the risks identified to ensure project success. The research concluded that a large percentage of the delays, difficulties and cost overruns are attributed to risks related to poor stakeholder-needs-identification and the absence of clear risk and stakeholder management strategies. He also argues that proper stakeholder management is a measure of the success of project delivery. Ngundo (2014) carried research on factors affecting the effectiveness of risk management in public housing construction projects in Kenya. He identified four important factors, which are related to project stakeholders, namely support of the top management, the competence of the project team, project risk planning and project approval procedure as having an effect on the effectiveness of the risk management practices. As part of a much larger project proposal, this study aims to articulate and establish the effect of risk management strategies on the relationship between stakeholder participation in Project Life Cycle Management and completion of urban road transport infrastructure projects in Kenya.

1.1.4 Urban Road Transport Infrastructure Projects in Kenya

Public road construction projects are on the rise in Kenya in the recent past. Despite this, cost overruns and delays in schedules have been reported with such projects in Kenya. In this regard, analytical reports from the republic of Kenya demonstrate that KeNHA commonly faces cost overruns. For example, the Thika Super Highway construction cost went up from the originally budgeted 26.44 billion up to 34.45 billion (World Bank, 2014). Moreover, the originally planned deadline of the said project was July 2011 but was subsequently reviewed to July 2013. In addition, the initial sewerage system in Lot1-RD 0530 of the project was later altered after the completion of the project. Some of these issue would have been tackled in advance by allowing all stakeholders concerned involved.

According to KeNHA (2019), the classified road network in Kenya is 63,575 km from a total of 177,800 km. The classified road network has increased from 41,800 km at the time Kenya achieved her independence to 63,575 km today, which implies that development rate is gradual and less than 600 km per annum. In the same period, the length of the paved road grew significantly from 1,811 km to 9,273 km. As per the current estimates about 70% (44,100 km) of the classified road network is in good condition and is maintainable whereas the rest 30% (18,900 km) needs rehabilitation or reconstruction. Table 1.1 gives a summary of classified road network in Kenya.

Table 1.1: Classified Road Network in Kenya

Road class	**Premix**	**Length by Surface Type (km)**			**Total**
		Surface dressing	**Gravel**	**Earth**	
International Trunk Roads (A)	**1,244.91**	**1,563.81**	**715.11**	**94.48**	**3,618.31**
National Roads (B)	350.21	1,166.26	819.29	346.14	2,681.90
Primary Roads (C)	642.89	2,198.16	3,601.64	1,552.90	7,995.59
Secondary Roads (D)	76.63	1,183.10	5,701.93	4,087.73	11,049.39
Minor Roads (E)	165.81	542.04	8,215.89	17,982.57	26,906.31
Special Purpose Roads	24.88	114.63	4,929.69	6,253.78	11,322.98
All classes	2,505.33	6,768	23,983.55	30,317.60	63,574.4

Source: KeNHA 2019

Roads and transport in Kenya's new system of governance is the responsibility owned by both the central and devolved government units. As such, the aggregate coordination role rests with the Kenya Roads Board (KRB) responsible for the overall oversight of the Kenyan Road network, hence coordinating the development of roads, rehabilitating and maintaining the roads, and is the authorized main adviser to the Government on all issues regarding roads (UKaid, 2015). The roads management is assigned to two roads agencies according to the Kenya Roads Act 2007, namely: KeNHA and KURA. The agencies are expected to facilitate the establishment, rehabilitation and maintenance of the network of roads in the city; according to the economy and standards in place. KeNHA is an autonomous road agency charged with the responsibility of managing, developing, rehabilitating and maintaining international trunk roads connecting centers of international significance and crossing international boundaries, or ending at international ports; called class A roads, national trunk roads connecting internationally significant centers; called class B roads, as well as primary roads connecting provincially significant centers to one other or two higher-order roads; called class C roads. In the city of Nairobi, KeNHA is responsible for the development of the by-passes as well as the major highways. According to UKaid (2015) County government of Nairobi's department of roads is majorly focusing on drainage, residential roads, traffic signals, junctions, as well as the Non-Motorised Transport (NMT) and improvements.

The setting up, rehabilitation as well as maintenance of public roads in urban locations in Kenya fall under the purview of KURA, a semi-autonomous government agency charged with the responsibility of managing roads, with exception to those that fall under the category of National Roads. Set up in 2010, the Authority is responsible for roads over 12,549 km, with 2,100 km paved while 10,400 km unpaved. However, the Kenya Rural Roads Authority (KeRRA), which is a national corporation that falls under the Ministry of Transport and Infrastructure, was developed as the Kenya Roads Act, 2007 proposed with a responsibility of managing, developing, rehabilitating, and maintaining rural roads.

The transport sector contributes between 5 to 15 percent of the GDP in the countries within the Great Lakes Region. However, the impact of transport goes well beyond its share of the economy as it serves as an intermediary service to all sectors and is therefore critical to economic growth and poverty alleviation. It is thus of paramount importance that the sector provides the society with adequate, effective, and efficient services, and that the sector provides these services at the least costs to society including the collateral negative impact on the environment and society. The major metropolitan areas around the globe are expected to experience significant growth over the longer term, especially those within developing nations. The existing transport infrastructure supporting these cities will come under increasing strain (Glaister, 2010).

By identifying the transport sector as one of the main pillars of the economic recovery effort in the "Economic Recovery Strategy for Wealth and Employment Creation 2013-2014" (ERS) and Vision 2030 blueprint, the Government of Kenya (GoK) has shown recognition of the transport sector contribution towards facilitation of rapid economic growth and reconstruction, poverty eradication and in wealth creation. The focus is on improving, promoting and sustaining efficient, affordable and effective transportation systems that provide a conducive environment for stimulation of productive activities and facilitation of economic growth and development not only in Kenya but in the whole East Africa Region and in particular the Great Lakes Region that is served by the Port of Mombasa (Glaister, 2010).

In comparison with other countries in the region, the transport sector in Kenya is relatively well developed in terms of both infrastructure and services. The transport sector in Kenya combines international quality operations and services, a somewhat run-down infrastructure and some inefficient and ineffective institutions. However, despite this policy and funding framework, parts of the road sector remain in poor condition, with some allegations of corruption, inefficiency, and waste. The situation since 2013 has improved in many ways, although some of the underlying problems still remain. In particular, Kenya road sub-sector accounts for over 80% of the country's total passenger traffic and 93% of the freight leaving a small proportion of water, rail and air transport (Arca & Prado, 2011)

The economy of Kenya is expected to grow at a rate of 10%, per year and investments in infrastructure are expected to support this growth which will propel the country to middle-income status by 2030 (Government of Kenya, 2008). An efficient and effective road and rail transportation services are expected to support the 10% Gross Domestic Product growth rate. Currently, transportation costs are estimated to account for 30% of production costs which is extremely high compared to other growing economies where the average cost is between 11% to 15%. Roads in Kenya transport 93% of all passenger traffic and freight. The main key enabler for economic, social and political development in Kenya is the road network (Rose, 2013). Thus, it is important to study the extent to which stakeholder participation might influence the completion of urban roads transport infrastructure projects in Kenya.

1.2 Statement of the Problem

In Kenya, despite the quest for successful completion of projects by project managers and increasing budget for transport infrastructure projects, many road projects have continuously experienced time overrun, budget overrun, poor quality and top on this list unsatisfactory stakeholder requirements. One of the most important contributions of stakeholders in the project lifecycle management is in the identification, assessing, mitigation and controlling of the various project risks and uncertainties to ensure the successful completion of transport infrastructure projects. However, complaints of exclusion of stakeholders in the project lifecycle management are still being reported and many reports have shown that implementers of infrastructure projects may be denying their stakeholders an opportunity to participate in the implementation of the projects.

A report released by Amnesty International in 2015 dubbed "Driven out from development" indicated that a number of residents and owners of business received a short notice of 30 days from the Kenya National Highways Authority informing them that their properties were built on public land and hence need for eviction to pave way for road construction (Amnesty International, 2015). Such scenarios have resulted in friction between the government and the citizens leading to completion problems. The significance of stakeholder engagement has been studied although from different contexts by various researchers (Maina & Kimutai, 2018; Kipkurui & Obura, 2018). These studies have demonstrated that stakeholder needs and expectation identification have influence on project performance and also stakeholder consultation influence the performance of road agencies (KeNHA, KERRA, KURA). Although these studies emphasize the importance of stakeholders on-road performance the current study hoped to bridge the gap by studying the influence of stakeholder participation in the completion of urban road infrastructure projects in Kenya as a whole. Musyoki and Gakuu (2018) examined the influence of stakeholders in the implementation of infrastructural projects and concluded that stakeholders had a negative and significant influence. This shows a lack of convergence in the literature on whether stakeholders should be allowed or ignored to participate in project life cycle management of the construction projects hence the need for the current study. For example, during the construction of Kenya's Thika Super Highway, the Kenya Alliance of Resident Association (KARA) reported that stakeholders shared their opinions on project planning and implementation and how the project would impact their lives socio-economically (KARA, 2012). Other matters revolved around local planning and utilization of land in regard to project.

However, many studies have looked at issues of completion of road, road performance and success in terms of budget, time, scope and cost, project manager competency, technology, contractors ability among many other variables (Oloo & Ngugi, 2016; Wambui, Ombui & Kagiri, 2015; Mwakajo & Kidombo, 2017; Seboru, Mulwa, Kyalo & Rambo, 2016; Obare, Kyalo, Mulwa & Mbugua, 2016; Ogweno, Muturi & Rambo, 2016; Mushori, Rambo & Wafula, 2020). These studies failed to consider that stakeholders are key in the project life cycle management if projects have to be successfully completed with little or none of the resistance. Mugata and Muchelule (2018) study showed the significance of stakeholders whereby the predictor variable encompassed stakeholders' interest, stakeholders' participation, stakeholder consultation and communication; whereas project performance tended to focus on meeting project cost, achieving project scope, meeting quality standards and lastly stakeholder approval. It is evident this and many other studies have not fully studied stakeholder's participation in project life cycle management in urban roads infrastructural in Kenya but rather from different perspectives and contexts, hence the current study.

In the planning phase of the project, it is generally noted that there is minimal involvement of stakeholders and only the key stakeholders appear to be involved to a certain extent. At this stage of the project, the contribution of the Project Affected Persons (PAPs) would have enriched the process of project planning of schedule, scope, resource and budget, including planning of risk management. A study conducted by Lyons and Skitmore (2014) indicated that planning and execution are the two phases where Risk Management Practices (RMP) is most widely used by stakeholders in developing countries, however, in Kenya stakeholders appear to be less conversant with the use of RMP and hence are not adequately involved.

Project execution involves coordinating people and resources, managing stakeholder expectations as well as integrating and performing the activities of the project plan (Hartwell, Upadhyay & Sourani, 2019). Stakeholder participation in this phase has been observed to be inadequate due to the incidences reported on work disruption or stoppage of work arising from low stakeholder involvement in both the initiation and planning phase of the project. It has also been observed that the PAPs and the complimentary service providers are not adequately involved in the projects as evidenced by many stoppages and disruptions of work activities by the landowners due to failure to compensate them on time and also stalling of the works in areas where service lines are located within the road reserve. These stakeholders are crucial in mitigating and controlling risks in this phase of the project (Lehtiranta, 2014).

In the project closure phase, stakeholders are expected to attend to the final inspection and acceptance of the completed works. However, there is a general observation that stakeholders are not adequately engaged and end up not owning the project thereby creating challenges related to the acceptability of the project after substantial completion. The foregoing observations are supported by researchers who opine that there is a very low stakeholder participation in the project lifecycle of many infrastructure projects which is a global problem. On this note, the studies indicate that there is very minimal stakeholder participation in Australia, Thailand, Bulgaria, Bangladesh and Turkey, South Africa, Somalia and Kenya (Cha & Maytorena-Sanchez, 2019; Hansen, 2014; IAPP, 2011; Newell & South, 2009; Nyaguthii, 2013).

The combined project life cycle management phases have not been studied as a cohort on urban roads transport infrastructure in Kenya thus the need for this current study. This claim is supported by Ndengwa, Mavole and Muhingi (2017), Maunda and Moronge (2016) and Mavuti, Kising'u and Oyo (2019), who focused their studies on health projects, completion of public projects and implementation of Kenya Ports Authority respectively. On the poor completion of road infrastructure projects studies have found that there is a poor rate of completion of road infrastructure projects in Latin America, Asia, East Africa and Kenya Young, 2011; PWC, 2013; Government of Kenya, 2015; Maina, 2013). These shortcomings cause inordinate disappointments with several scholars quoting poor stakeholder participation as likely reasons for poor project implementation (Aaltonen, 2011; Chang, Chih, Chew & Pisarski, 2013; Hietbrink, Hartmann & Dewulf, 2012).

Similarly, various authors have conducted studies on risk management in development projects yet none has been focused on urban road transport infrastructural projects. For instance, Ondara, Bulla and Kamau (2017) determined influence of risk management strategies on performance of construction firms in selected counties in Kenya; Aduma and Kimutai (2018) determined the influence of project risk management strategies on the project performance National Hospital Insurance Fund (NHIF); Wibowo, Hatmoko and Nurdiana (2018) studied risk management in Indonesia construction project; Kangari (2015) assessed the attitude of large U.S. construction firms toward risk; and, Chelishe and Kikwasi (2014) studied the critical success factors and the influence they have on the implementation of risk assessment and management practices in the Tanzanian construction industry. These studies demonstrate the importance of risk assessment but did not measure the moderating effect of risk management practices hence the current study. Furthermore, only a study by Naeem, Khanzanda, Mubashir and Sohail (2018) possibly studied the “Impact of Project Planning on Project Success with Mediating Role of Risk Management” thus the need to use risk management as a moderator in the current study to assess its influence on the relationship between stakeholder participation and completion of urban roads transport infrastructure projects.

Although substantial studies into the introduction of stakeholder participation practices in the construction industry have been undertaken separately (Heravi, Coffey & Trigunarsyah, 2015; Kobusingye, Mungatu & Mulyungi, 2017), no major studies have been embarked on to date to particularly determine the level of stakeholder involvement during initiation, design, construction and project closure phase of urban road infrastructure projects in Kenya. Moreover, none of these studies specifically examined the stakeholder involvement in relation to risk management practices and participation in all phases of the project lifecycle management and as moderated by risk management practices. The results of a survey conducted by Deloitte and Forbes (2012) revealed that less than 25% of construction industry practitioners use continuous risk monitoring. It also showed that 90% of surveyed executives consider, as a priority, the restructure of their procedure by the end of 2015. Also, half of the survey’s respondents confirm their plans to invest in the development of a continuous risk monitoring system.

Moreover, in spite of the unconsolidated or unstructured evidence of stakeholder involvement, there is limited evidence on how this influences completion of urban road transport infrastructure projects. Evidence of what works in stakeholder involvement is yet to be rigorously addressed. All the identified gaps contributed to the choice of this current study, which aimed at examining the influence of stakeholder participation in project life cycle management on the completion of urban road transport infrastructure projects in Kenya and how risk management practices moderate the influence.

1.3 Purpose of the Study

The purpose of this study was to determine the influence of stakeholder participation in project life cycle management on the completion of urban road transport infrastructure projects in Kenya, and the moderating influence of risk management practices on this relationship.

1.4 Objectives of the Study

The study aimed to achieve the following objectives:

i. To assess how stakeholder participation in project initiation influences completion of urban road transport infrastructure projects in Kenya.
ii. To establish how stakeholder participation in project planning influences the completion of urban road transport infrastructure projects in Kenya.
iii. To assess how stakeholder participation in project execution influences completion of urban road transport infrastructure projects in Kenya.
iv. To establish how stakeholder participation in project closure influences completion of urban road transport infrastructure projects in Kenya.
v. To examine how combined stakeholder participation in Project Life Cycle Management influences the completion of urban road transport infrastructure projects in Kenya.
vi. To assess how risk management practices, influence the completion of urban road transport infrastructure projects in Kenya.
vii. To establish the moderating influence of risk management practices on the relationship between combined stakeholder participation in Project Life Cycle Management and completion of urban road transport infrastructure projects in Kenya.

1.5 Research Questions

This study sought to answer the following research questions:

i. How does stakeholder participation in project initiation influence completion of urban road transport infrastructure projects in Kenya?
ii. To what extent does stakeholder participation in project planning influence completion of urban road transport infrastructure projects in Kenya?
iii. How does stakeholder participation in project execution influence completion of urban road transport infrastructure projects in Kenya?
iv. To what extent does stakeholder participation in project closure construction influence completion of urban road transport infrastructure projects in Kenya?
v. How does combined stakeholder participation in Project Life Cycle Management influence completion of urban road transport infrastructure projects in Kenya?
vi. To what extent does risk management practice influence completion of urban road transport infrastructure projects in Kenya?

vii. What is the moderating influence of risk management practices on the relationship between stakeholder participation in Project Life Cycle Management and completion of urban road transport infrastructure projects in Kenya? 1.6 Hypothesis of the Study

The following null hypotheses was tested in the study:

1. **H_0:** stakeholder participation in project initiation does not significantly influence completion of urban road transport infrastructure projects in Kenya.
2. **H_0:** stakeholder participation in project planning does not significantly influence completion of urban road transport infrastructure projects in Kenya
3. **H_0:** stakeholder participation in project execution does not significantly influence completion of urban road transport infrastructure projects in Kenya.
4. **H_0:** stakeholder participation in project closure does not significantly influences completion of urban road transport infrastructure projects in Kenya.
5. **H_0:** Combined stakeholder participation in project life cycle management does not significantly influence completion of urban road transport infrastructure projects in Kenya.
6. **H_0:** Risk management practices does not significantly influence completion of urban road transport infrastructure projects in Kenya.
7. **H_0:** Risk management practices does not have a significant moderating influence on the relationship between stakeholder participation in project life cycle management and completion of urban road transport infrastructure projects in Kenya.

1.6 Significance of the Study

This study was expected to be significant to beneficiaries, policy planners, funding agencies and investors in transport infrastructure projects. First of all, the findings of this study provides useful information to the local community members and stakeholders such as matatu SACCOS and passengers in their daily operations in Kenya.

Also, the findings of this study help in improving the efficiency and management procedures of road construction projects in Kenya in terms of national policy formulation and implementation. This will ensure that such projects are completed on time and in accordance to set objectives. The research findings would enable the government and other stakeholders to benefit the government through ensuring policies put in place to govern construction sectors and that are favourable to their growth and that their performance will play a key role in national building toward achieving millennium goals such as vision 2030.

Additionally, transport infrastructure-implementing agencies KeNHA, KURA, KeRRA, KPA and KAA would find it useful in providing the requisite information and subsequent generation of recommendations for a more impactful adoption of stakeholder participation practices. It would also benefit infrastructure-implementing agencies by understanding the need for stakeholder participation in all phases of the project project life cycle management of the road construction and their contribution to the successful completion of their projects It would also provide additional information on how stakeholders can provide solutions to the ever-present risk and uncertainties and how risk management practices can be embraced to moderate the relationship between stakeholder participation and completion of urban road transport infrastructure projects in Kenya.

In respect to stakeholder participation and risk management practices, road construction companies or contractors stand to benefit from the findings of this study since they would be able to know the challenges and strategies that can be applied to achieve efficiency and effectiveness in road construction projects. Further, the study would benefit project stakeholders by increasing their level of knowledge in project management and ensuring that they are involved in decision-making that provides solutions to the challenges facing the project while serving their own interests.

This study is expected to guide construction professionals enhancing the success of construction projects completion by managing well the factors that would help their successful completion. The professionals may benefit from this study by applying the results of its findings while carrying out construction projects. Project developers/clients may also benefit from the findings of this study and therefore achieve greater success in their construction projects. This is because they may apply the findings of this study in ensuring the risk factors that may cause their projects not be delivered successfully are mitigated. The study would also be of importance to project managers and contractors to understand the managerial practices that lead to efficient completion of road infrastructure projects. In particular, the study aimed to help the project contractors to construct the road projects that meet the desired standard.

The study would also be of significance for academicians and future researchers since it has provided crucial information about the influence of risk management practices on the relationship between stakeholder participation in project life cycle management and completion of urban road transport infrastructure projects in Kenya. The study report would also act as a reference and stimulate interest among academicians and that would encourage further research on the problem

1.7 Limitations of the Study

The geographical distribution of urban roads covering 9 counties in the country posed some challenges in accessing the respondents due to logistical difficulties. This limitation was mitigated by hiring and training research assistants in the individual counties to assist in data collection. Apart from the stakeholders residing along the route of the project roads, most of the stakeholders were domiciled in Nairobi County.

The information required for this study was considered to be of a sensitive and confidential nature to the project stakeholders and it was expected that some stakeholders might withhold some critical information. In this respect, this limitation was mitigated by assuring each stakeholder of their anonymity and confidentiality of the information given and the fact that it would be used for academic purposes only.

It was expected that some of the respondents would be reluctant in sharing information required or participating in the research. This limitation was mitigated by approaching the representatives of the Project Affected Persons (PAPs) and the area chiefs and providing them with approval documents from the University of Nairobi, National Commission of Science, Technology and Innovation (NACOSTI), KURA, and the project management team before commencing the data collection exercise.

1.8 Delimitation of the Study

The study was delimited to the urban roads undertaken by KURA in 9 counties in Kenya: Nairobi; Kiambu; Meru; Uasin Gishu, Kisii; Nyeri; Machakos; Laikipia and Kericho. This is so because in some of these Counties urban road projects were ongoing and others construction had just been completed (Appendix VII). In addition, the issues of stakeholder were characterized in a similar manner: relocation of service lines and poles, land disputes and compensation; lack of involvement in various stages of implementation of road projects; and delayed completion. The study would be delimited to establishing the influence of stakeholder participation in project life cycle management on the completion of urban road transport infrastructure projects in Kenya. The predictor variables researched stakeholder participation in project life cycle management included; project initiation, project planning, project execution and project closure. The influence of these variables on the completion of urban road transport infrastructure projects as moderated by risk management practices was also researched. Additionally, the study was based on a mixed-methods approach and a cross-sectional descriptive survey. Simple random and purposive sampling techniques were used to attain an appropriate sample for the study. Questionnaires and in-depth interviews were used to collect data. Finally, the study was contextualized for professional key stakeholders such as KURA project implementation teams, consultant's supervision teams, contractors project management teams, KPLC, water companies and NLC institutions and officials.

1.9 Assumption of the Study

The study involved assessing how stakeholder participation in project life cycle management influences the completion of urban road transport infrastructure projects in Kenya. It was therefore assumed that stakeholder participation in project life cycle management; initiation, design, construction and project closure would influence the completion of urban road transport infrastructure projects. It is also assumed that the implementation agency of these selected projects cooperated to allow the project stakeholders to provide the required information. Further, it was assumed that the respondents would answer the questions truthfully, objectively and that other factors could not influence the findings of the study. Further, it was assumed that the respondents were easily accessible and available for this study and that adverse weather would inhibit transport logistics. Last but not least, the study assumed that the national policy on the impact of urban road infrastructure would continue to be of importance in the national and international development discourse.

1.10 Definition of Terms of Significant Terms used in the Study

Completion of urban road transport infrastructure projects: It is a measure of the success of a project being implemented within time, cost, quality specifications, and to the satisfaction of stakeholders. For the purpose of this study, this is a measure of success of completion of the road network that supports transportation systems within the urban areas of Kenya. In this study, completion appled to those roads that had achieved a progress of more than 90%, and also the ongoing road projects where the initiation and planning phases had been completed.

Project Affected Persons (PAPs): This refers to any individual(s), household, firms, or institutions who on account of a development project would be affected directly or indirectedly, such as loss of source of income, loss of habitat both natural and man made and lose to accessing community resources.

Stakeholder participation in project life cycle management: In the context of this study, stakeholder participation in project life cycle management would be defined as a deliberate involvement of the individuals or groups who may affect or be affected by the project content or outcome in the various phases of the project management. In other words, it involves the process of engaging all persons or groups who have a defined interest in the initiation, planning, execution and project closure phases of a project.

Stakeholder participation in project initiation: This is the participation of stakeholders in the first phase of project life cycle management where needs assessment, identification, goal and objective setting including feasibility studies are carried out and recommendations including justification are made and approval to proceed with the project planning phase is granted. During this phase, the project team is selected including identification of project deliverables and participating workgroups.

Stakeholder participation in project planning: This is the participation of stakeholders in the second phase of project life cycle management. In this phase, stakeholders are involved in scoping, scheduling, resource and budget planning including risk planning among other tasks.

Stakeholder participation in project execution: This is the involvement of stakeholders in the third phase of project life cycle management. In this phase, the stakeholders get involved in the execution of planned activities, progress review and monitoring activities, communication and risk control among other tasks.

Stakeholder participation in project closure: This is the engagement of stakeholders in the fourth and final phase of the project life cycle management. The stakeholders are engaged in inspection and acceptance of project deliverables, taking over of project document and project inaugural forums. The contracts for the contractors, sub-contractors, suppliers are terminated and communication about the project closure is made to all project stakeholders.

Risk Management Practices: In this study, risk management is the process of identifying, analyzing, mitigating including monitoring and controlling risk during the project life cycle management.

1.11 Organization of the Study

The study was organized into five chapters. Chapter one formed the introduction of the study and included the study background, statement of the problem, purpose, objectives, including research questions, hypothesis, significance, limitations, delimitation and the assumptions of the study including the definition of significant terms and finally the organization of the study. Chapter two contained a review of the relevant literature related to the study topic, theoretical underpinnings, conceptual framework and summary of research gaps. Chapter three contained the research methodology to be adapted and included sub-topics on research paradigm, research design, target population, sample size and sampling procedures, data collection instruments, validity and reliability of the instruments, data collection procedures, data analysis, ethical considerations and operationalization of the variables. Chapter four contained information on data presentation, analysis, and interpretation. Finally, Chapter five covered a summary of findings, conclusions, recommendations and suggestions for further research.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviewed literature related to the study based on the following thematic areas: Completion of urban road transport infrastructure projects, Stakeholder participation in project life cycle management and completion of urban road transport infrastructure projects, Participation in project initiation and Completion of urban road transport infrastructure projects, Participatory project planning and Completion of urban road transport infrastructure projects, Participation in project execution and Completion of urban road transport infrastructure projects, Participation in project closure and Completion of urban road transport infrastructure projects, Risk Management Practices and Completion of urban road transport infrastructure projects. Combined Stakeholder participation in project life cycle management, Risk Management Practices, and Completion of urban road transport infrastructure projects, Theoretical Framework, Conceptual Framework and Summary of the reviewed literature.

2.2 Concept of Completion of Urban Road Transport Infrastructure Projects

Project success has different meanings to different people. The performance criteria of Urban Road Transport Infrastructure Projects will be assessed by the following parameters; completion within time, cost, quality standards and stakeholder satisfaction. Therefore, what needs to be done to improve Project Performance (PP) has been voiced as a recurrent and taxing problem in construction (Love, Edwards & Irani, 2012). Albert and Ada (2014) noted that the criteria for project success are constantly enriched. They also mentioned that a systematic critique of the existing literature is needed to develop the framework for measuring construction success at both quantitative and qualitative levels.

The successful completion of the construction projects has been comprehensively reviewed in recent years through classified reports. The reports prepared under the direction of Sir Michael Latham and Sir John Egan, (Constructing the Team and Rethinking Construction), are classical examples in this regard. Under each of these reports, performance targets have been set so as to measure results. Latham (2015) stated that widespread adoption of collaborative working practices could achieve a 30% real cost-saving within five years. Latham also recognized the significant role of the client in achieving successful construction projects. Generally, for projects of medium and small-scale, project managers may achieve project success eventually through the good use of strong technical knowledge and

Intelligence Quotient (IQ). Neely, Adams and Kenerley (2012) defined performance measurement as the process of quantifying the efficiency and effectiveness of past actions and a performance measure was defined as a parameter used to quantify the efficiency and/or effectiveness of past actions. Alternatively, Bititci, Cocca and Ates (2015), explained the distinction between performance management and measurement and defined the performance measurement as the process of determining how successful organizations or individuals have been in attaining their objectives. Project performance management was seen as a closed loop control system, which positions policy and strategy and obtains feedback from various levels in order to manage the performance of the system. Though these observations are useful guides in the construction industry, the studies could not indicate the nature and types of construction works being undertaken.

Shamas, Toora and Ogunlana (2010), in a study, beyond the ‘iron triangle’: Stakeholder perception of Key Performance Indicators (KPIs), reported that the traditional measures of the iron triangle are no more the only parameters applicable to measuring performance on large public sector development projects. Other performance indicators such as safety, efficient use of resources, effectiveness, the satisfaction of stakeholders, are increasingly becoming important. However, the study was limited to internal stakeholders, without involving external stakeholders. The study did not also explore stakeholder-related risk issues and their impacts on project performance. Hence, there is a need for further studies, As a result, it becomes difficult to appreciate them in urban road transport projects, which are more complex in terms of cost, scope, time and numerous stakeholder requirements (Zhang & Fan, 2013).

In response to calls for improvement of the construction sector performance measurement, several new performance measurement frameworks are incorporating financial measures and business drivers have emerged in the management literature (Watts & McNair-Connolly, 2012). Some examples include the performance measurement matrix and the performance pyramid in terms of project scope, cost and duration (Wang & Hung, 2016). Improving stakeholder collaboration and participation is central for achieving short-term construction performance objectives as well as the long-term competitive advantage to improve the project performance (Eriksson, 2010; Barclay & Osei-Bryson, 2010). It was further emphasized that lean thinking is an approach that has been adopted in many different industrial settings as a means for improving the construction project performance. Haponava and Al-Jibouri (2009) argued that other factors such as the quality of the relationship between the stakeholders involved and their flexibility have a great effect on the project's success. However, measurement of the performance of the construction projects (including roads) based on time, cost and quality is woefully insufficient to ensure effective project success (Wang & Hung, 2016). Apart from insufficient data, recent empirical data on the performance of the construction projects is also limited.

Many factors can influence the quality of a project. Nevertheless, the role of the main stakeholders in determining quality levels had not been extensively studied (Pheng & Wei, 2012; Soetanto, Proverbs & Holt, 2017; Olander & Landin, 2015; Wang & Huang, 2016; Joaquin, Hernandez & Aspinwall, 2010). According to Willar (2012), the quality of a construction project is largely dependent on the attitudes of different stakeholders including contractors and consultants. Implying that, without the commitment of the major parties to properly carrying out their responsibilities, this would adversely affect the final project quality level. Xie, Yang, Hu and Chan (2014) declare that the customer's (stakeholder's) perspective of quality levels is critically important and therefore the inclusion of main stakeholders should be a key feature of any framework aiming to improve the quality (Joaquin, Hernandez & Aspinwall, 2010). While ineffective communication between different parties has been a concern for project leaders (Basu, 2013), well-organized relationships are helpful in improving construction projects in terms of optimization of the most important factors contributing to project success such as time, cost and quality (Wang & Huang, 2016). Also, Ndunda, Paul and Mbura (2017) and Mushori et al. (2020) found that qualified contractors guaranteed delivery of quality road projects through constant inspection and propr management during roject implementation. Project beneficiary participation positively and significantly influenced the implementation of road projects. However, it should be realized that these studies mainly used survey questionnaire, but did not utilize interview guides, hence inadequate information was obtained. The category of stakeholders involved was not clear.

A project management group can advance efficiency and management processes thus, improve project quality. This requires that they possess important information about the project and be capable enough to accurately analyze that information and outline relevant project strategies. Wang and Huang (2016) stated that one essential step in establishing a total quality culture is to develop a construction team of main contractors and subcontractors who commit to the quality process and create a productive quality attitude. Contractors in the competitive market with a reputation for producing a constructed output of poor quality will not generally ultimately be awarded many projects. Such contractors should, therefore, be encouraged to improve the quality of their work in order to increase their chance of winning tenders (Xie, Yang, Hu & Chan, 2014).

On the other hand, contractors with a good quality reputation are expected to deliver the project within the specified time and budget and to the desired level of quality (Wi & Jung, 2010). Although the main contractor is responsible for the quality of the job, subcontractors perform the greater portion of the actual on-site work. It is therefore important that the client and main contractor select subcontractors who have relevant experience, a satisfactory work performance record in previous projects and a proven quality attitude that aligns their objectives with the objectives of the client (Aje, 2012). Nevertheless, sometimes the subcontractors and suppliers' objectives differ from those of the main contractor. For example, in order to save time, they may want to finish their work as fast as possible thus sacrificing the quality level. Subcontractors and suppliers who want to have continual business from the general contractor should attempt to perform strictly conforming to the contractor's stated requirements.

In addition, owners (clients) and developers play an important role in the accomplishment of the desired project outcome quality levels. These groups are not only accountable for preparing clear and complete specifications, but they should also monitor and control the actual on-site work of both contractors and subcontractors (Jha & Iyer, 2016). In a recent investigation on the role of quality using the perspective of the 'iron triangle of cost, time and quality', Basu (2013) highlighted that there is a strong correlation between organizational quality and criteria such as stakeholder management, project leadership, and top management support.

Various factors are globally accepted as a measure of project performance. In this study, however, project performance was measured on the basis of completion within stipulated contract duration, cost, quality and conforming to stakeholder requirements and satisfaction. This is based on the measurement and monitoring of the performance criteria of the projects as argued by Barclay and Osei-Bryson (2010). According to Wi and Jung (2010), this is the traditionally accepted method associated with variables of time, cost, and quality (iron triangle), also refered to as 'iron traingle'. Scholars have different views on which criteria to use in measuring performance apart from the traditional measures of an iron triangle. While some support the traditional method with some additions, Shamas, Toor and Ogunlana (2010) and Mushori, et al. (2020) argued that performance measurements such as stakeholders' satisfaction should also be used.

In East Africa, stakeholders are deemend important in many construction projects (Tabish, 2012). For instance, Ngoma (2012) in an examination on the effect of project communication on project stakeholder commitment in Uganda indicated that intra project communication and extra project communication have positive and combined predictive potential of project stakeholder commitment. In Kenya, the existence of a good and well-functioning urban road network is vital for the growth of the economy, poverty reduction, and wealth and employment creation. As a result, an important role of attaining Kenya's vision 2030 goals, Sustainable Development Goals (SDGs) and Kenya's economic recovery strategy for wealth employment creation through the provision of basic infrastructure facilities to the public by developing, maintaining, rehabilitating and managing road networks in the county (Mbaabu, 2012). Though Kenya's infrastructure has been given the highest priority to ensure that main road projects under the economic pillar are implemented, a lot still remains uncompleted.

Motivated by the importance of roads in social development of the country, Maina (2013) notes that the government has in the recent past increased budget allocation in the infrastructure sector (road and rail subsectors), however, the performance of road projects in Kenya has been murky, with reports indicating delay in completion, cost overruns, demolition of residential and business houses to accommodate infrastructure construction, and abortive work. Various attempts have been put forth to address the performance of road projects, particularly with regard to the role of stakeholders in the implementation of road projects. Mbaaru (2012) noted that stakeholder involvement was paramount in development projects. Maina (2013) underscored the need for stakeholder involvement, particularly on problem sharing. KPMG (2010) highlights poor stakeholder management as probable reasons for project failures and great disappointments. This gives the necessity for more study in this area. As admitted by Eriksson (2010), the performance of construction projects needs effective stakeholder collaboration and involvement in the project cycle management.

Implementation of road projects in Kenya has experienced glitches between the stakeholders who include Kenya power, KURA or KeRRA and the community. Nyarangi (2019) reported that the County Business Manager of Kenya Power in Kisii County squarely blamed Kerra for not honoring payments of the quotations worth 100 million that were meant for restoration of the electricity cable lines within the County (Picture 1). For security and safety of the community, Kenya Power ought to have moved more than 1,000 poles at estimated 50km radius away the roads and also drainage tunnels at a cost of sh250 million. The picture, however, shows that KURA or KeRRA tend to carry out their activities without prior engagement of stakeholders in project initiation phase. Relocation of infrastructure can also hinder completion of road. Achuka (2016) on why Outer Ring Road in Nairobi County, took longer than planned time, reported the Transport Cabinet Secretary James Macharia saying (verbatim), “The main challenge is that this is an urban road, coupled with the slow pace of relocating already existing infrastructure like power, drainage, water and communication lines.” This is a similar case with Meru town, whereby the Director General of KURA, Eng. Abdul Rashid, cited issues around “compensation for residents whose pieces of land paved way for the bypasses and the presence of infrastructural facilities such as water pipes and electric poles as one of the challenges experienced in the project,” (Mulyungi, 2019; Standard Digital, 2019).

Pic 1: Motorists drive under a dangerously hanging electricity pole on the Riokindo-Nyabitunwa road in Bomachoge Borabu Constituency, Kisii County (7th October, 2019).
Source: (Nyarangi, 2019, Standard)

In Nairobi, inadequate engagement has led to serious court cases and disputes among the stakeholders in road projects hence delay in completion. For example, Mutai (2019) reported that during the upgrading and expansion of Langata road which lies between the Kenya Wildlife Services (KWS) and Bomas of Kenya (BoM), KURA and NLC acquired a piece of land- LR No 12066 (0.8055 hectares) from BoM at Sh85 million and failed to pay leading to a court case. In Kiambu County, KURA officials held meeting with stakeholders and urged them to remove structures they had constructed on road reserve to pave way for construction (Maichuhie, 2017).

Pic 2: Second phase of the road being constructed by Japanese cuts through Kibera slums, Nairobi. Residents. Fear that demolition of structures on the road reserve to pay way for construction of Langata to Ngong road Southern bypass may render them homeless
Source: (Achuka, 2018, Standard)

In another scenario of eviction of urban dwellers during road construction, Achuka (2018) wrote that the construction of a bypass connecting Ngong road to Langata road that cut through Kibera slums (Picture 2) was halted in 2016 by the High Court of Kenya. Inspite of this, the contractor H Young defiantly proceeded on the site. Thousands of residents of Kambi Muru, Lindi Mashimoni and Kisumu Ndogo had filed two cases that basically were challenging human displacement and demolition of houses. Gupta et al. (2015) warns that inclusive development should aim to focus on the poorest, the vulnerable and the marginalized. Achuka (2017) adds that demolitions have led to legal battles that have forced the designers to change road design hence late completion. For example, the case of Taj Mall that affected road construction where it joins Eastern Bypass. This is cited as a land acquisition issue.

There has been claims that KURA does not involve the stakeholders in planning phase. Ngige (2014) reported that there was a tag of war between the County government of Nyeri and the national road agency (KURA). This was evident when the County government proposal of building footpaths along the streets was squashed away following KURA's claims that the KRB had already approved the earlier plan making it difficult to incorporate any changes.

This kind of ignorance to the community requests can hinder effective completion. However, in Uasin Gishu County, Oyugah and Onyango (2019) found that stakeholder involvement had a significant and positive effect on road construction projects. Therefore, this study hopes to better understand how effective participatory project life-cycle management influences the proper completion of urban road transport infrastructure projects in the developing countries, especially in Kenya.

2.3 Stakeholder Participation in Project Initiation and Completion of Urban Road Transport Infrastructure Projects

The life cycle of a project begins from initiation. According to the PMBOK, 5th Edition, "The Initiating Process Group consists of those processes performed to define a new project or a new phase of an existing project including the process of getting authorization to start the project or phase. It implies that the processes at this stage should offer an appropriate definition of the project product (PMI, 2013). As observed by Dahan, Hauser and Kähkönen (2010), during project initiation emphasis must be given to idea generation, prioritization and project feasibility studies, screening, and selection. Moreover, decisions regarding project actors and implementers, stakeholders and whether the project has sufficient support are made. During this phase, stakeholders conduct a needs analysis by identifying the needs and prioritizing them as well as identify the root causes of the problems (Regional Partnership for Resource Development, 2009). Once the problem has been identified, beneficiaries discuss it at length and reach a consensus. The objective analysis is done and a possible solution examined based on the root causes of the problem.

The most common tools used in the initiation stage project charter, project plan, project framework, project justification, and project milestones reviews (Lewis, 2010). Project preparation includes resource planning, various inputs/clearances, resettlement, and infrastructure development. It is necessary to develop mechanisms for the selection of projects that ensure fairness and avoid conflicts of interest. The initiation processes determine the nature and scope of the project. If this stage is not performed well, it is unlikely that the project will be successful in meeting the community needs (Nijkamp, 2012). The key project controls needed here are an understanding of the project environment and making sure that all necessary controls are incorporated into the project. According to Albert (2014), any deficiencies should be reported and a recommendation should be made to fix them. The initiation stage should include a plan that encompasses the following areas: Analyzing the needs/requirements in measurable goals, reviewing of the current operations, financial analysis of the costs and benefits including a budget, stakeholder analysis, including users, and support personnel for the project, project charter including costs, tasks, deliverables, and schedule.

During initiation, a needs analysis by stakeholders can serve as a guide to ensure that the project planning is in line with the needs and capabilities of the said community. This should be the guiding principle in deciding whether community participation is possible and practical during project execution. The facts found in the preliminary stage will be valuable in reaching such a conclusion (PMI, 2013). When stakeholders are involved in identifying their needs they are able to have a common understanding of a problem, treat it with the importance it deserves, and commit to solving the problem. Instances, where they are overlooked in this stage, legitimizing, will be tricky even if the outside world assisted them to identify the needs. This leads to chances of delay during the implementation phase (Chikati, 2009).

The early participation of project stakeholders can offer a constructive dialogue and sense of ownership that may lead to positive interest utilized, increasing credibility, more transparency and the early identification of constraints. Tammer (2009) argued that if this process is not managed correctly, when stakeholders are not entirely committed or when the dialogue is not properly focused and managed, it may turn out to be a (costly) burden. In order to properly align all points of view and even contradictory and diverging interests, a comprehensive and complete stakeholder identification and classification should take place during project initiation.

When a community contemplates to come up with any nature of development project, it is crucial to observe a project cycle consider the key significance of their purposed project, key achievements to be realized, goals, focus of the project, the resources required, the requisite skills and the technical knowhow. At this juncture of brainstorming, also referred to as Initiation stage (Amadi, 2017), the whole community should be involved by allowing them to participate in the planning, to provide views on what they consider important including the operationalization or execution of the project.

The involvement of stakeholders at the beginning of any project is key to headstart project development activities. This importance is held by Caldwel and Usadolo (2016) who noted that in a participatory development project, stakeholder identification should be prioritized whereby they should be brought in as partners for exploration of expected development challenges. Raza (2016) claimed that projects are not implemented because the public is dismissed in most areas of the development projects. Raza revealed that project acceptability is directly associated with the extent to which the local community people have been involved in the projects. Nyandika and Ngugi (2014) studied the “Influence of Stakeholders' Participation on Performance of Road Projects at Kenya National Highways Authority.” The target population was 251, comprising of Prequalified Contractors (NCA1 to 3) and KeNHA Top management (Job group 7-10) and also prequalified consultants. Stratified random sampling was used to select 30% of the target population thus a sample size of 75 respondents. A structured questionnaire was used as the main tool for data collection. The study found that awareness, feasibility, conferences and seminars in user involvement have a great positive influence on road projects performance. The study recommended that KeNHA need to ensure stakeholders’ involvement in order to improve its performance in road projects at Kenya National Highways Authority.

Barasa and Jelagat (2013) in their study of community participation in project planning, management and implementation, a focus on the building the foundation for sustainable development argued that, “participatory development has the propensity of achieving project sustainability and increased utilization rate of the project by members of the community and sustained ownership,” and further stated that, “Community members are important partners in national development and therefore, participation, ownership and sustainability of the projects has the multiplier effect of enhancing the overall development of the local community and contributing to the country’s national development and economic growth.” This clearly indicates that for the achievement of national development there is need to embrace partnership and active participation of stakeholders basically at community level. The study by Barasa and Jelagat presented a methodological gap which this current study on the participation in project initiation and implementation of the urban road transport infrastructural projects hoped to fill.

Abdalla and Otieno (2017) studied on the determinants of implementation of County Government projects, a case of infrastructural projects in Kilifi County in Kenya. The study used a descriptive survey design. The target population was 60 based on three sub counties in Kilifi County and thereby recording a return rate of 83.33%. The use of purposive sampling was included. For testing hypothesis, Spearman Rank Co-efficient was preferred. The study findings revealed that community participation in project implementation of the infrastructural projects contributes to building trust and reduction of resistance to implementation of the projects by the local community members hence, improved relationships among stakeholders. Menoka, David, Damian and Edward (2013) indicated that some stakeholders, particularly client and main contractor, are regarded important over the others. However, those considered less important and left out in the decision-making processes may result in a failure to address sustainability issues. Thus, it is imperative for a systematic approach to involve stakeholders with high salience in relation to sustainability. Stakeholders are considered important in all phases of project implementation and more so in the initiation phase.

In this respect, Menoka, (2014) conducted a study on stakeholder involvement and their influence sustainability related to project performance in construction. The aim of the study was to improve stakeholder involvement in the construction project performance so as to achieve construction sustainability. A framework developed included various types of stakeholders geared towards sustainability-driven project performance. The study was an empirical investigation from which the results portrayed that effective preparation and presentation of stakeholder involvement contributed to improved construction project performance. In addition, the findings indicated that variation of perception of projects participants' roles, stakeholder involvement, and construction sustainability and construction project performance towards organizations. The implication of this was that stakeholder involvement can be vital in anticipating the diverging expectations of various stakeholders from the very initial stages of the project.

Further, Madeeha and Naqvi (2014) carried a study on the impact of internal stakeholder's engagement on project portfolio management (PPM) success, IT Industry in Lahore, Pakistan. The study was pragmatic in the sense that all the 87 software houses of repute in Lahore were involved. The study revealed that "the ramification of stakeholders was phase-peculiar and that role clarity affected the nature of the relationship between the internal stakeholder's engagement and project portfolio management success as a moderator." The analysis was performed using Pearson correlation and also Step-wise Hierarchal Regression. Results at first indicated internal stakeholder's engagement to be insignificant on the success of PPM, however with the 'role clarity' as a moderator, the effect of internal stakeholder's engagement appeared strong and significant on the success of PPM. Through the use of stakeholder theory, the study enriched project research to the project portfolio context and equally offered the practical guidance for professionalizing PPM. It should be noted that the stakeholder theory was deemed significant to the current study of stakeholder participation in project life cycle management, risk management practices and implementation of the infrastructure projects.

Wamugu and Ogollah (2017) study sought to determine the role of stakeholder participation in Constituency Development Fund (CDF) project initiation and its influence on performance. The study was descriptive and correlational in nature. Primary data was collected using questionnaires whereas secondary data was collected from performance reports. To show relationship between variables ANOVA was adopted. The findings of the study revealed that participation in project initiation had both a positive and significant on the performance given the regression that showed that $r=0.263$, $p=0.018<0.05$ level of significance and regression beta coefficient of 0.263.

2.4 Stakeholder Participation in Project Planning and Completion of Urban Road Transport Infrastructure Projects

Stakeholder involvement or engagement in the project planning process should include a variety of actors with different roles and responsibilities in the planning phase of the project life cycle (Kerote, 2014). As with the initiation process group, a failure to adequately plan greatly reduces the project's chances of successfully accomplishing its goals. The objectives of planning include analyzing, anticipating, scheduling, coordinating and controlling and information management. According to Rao (2017) the benefits of systematic planning as being breaking down complex activities into manageable chunks, determining logical sequences of activities, providing a logical basis for making decisions, showing effects on other systems, providing framework for the assessment of programmes, allowing lessons to be learned from practice and facilitating communication of ideas in a logical form to its use. Project planning generally consists of: determining how to plan, developing the scope statement; selecting the planning team; identifying deliverables and creating the work breakdown structure; identifying the activities needed to complete those deliverables and networking the activities in their logical sequence; estimating the resource requirements for the activities; estimating time and cost for activities; developing the schedule; developing the budget; risk planning; gaining formal approval to begin work (Rosario, 2010).

Additionally, processes such as planning for communications and for scope management, identifying roles and responsibilities, determining what to purchase for the project and holding a kick-off meeting is also generally advisable. Project planning activities require that project stakeholders develop a baseline plan involving; the specification of required project resources and their allocation; and the determination of the methods to be used to deliver the project end product, respond to critical events and evaluate activities and time schedule (Ling & Ma, 2014). From the works of Kulkarni, Huckfeldt, and Bargstädt (2014), it was been noted that better planning of projects should analyze successive increments or distinct phases of activity. According to them, this way the return to each relatively small increment can be evaluated or judged separately.

Similarly, a study by Heravi, Coffey and Trigunarsyah (2015) examined the level of stakeholder involvement during the project's planning process of building projects in Australia. Results of the survey revealed that contractors have the lowest level of participation within the project initiation and design phases, hence engage them as early as possible. The study however uses only the perception of four stakeholder groups in building construction projects and not urban road transport infrastructure projects that have numerous stakeholder dimensions. An interview guide would have given more in depth information. This means that handling a big project with manageable parts could be a complex task in projects management. Hence, the benefits of stakeholder involvement in the planning process should include a reduction in distrust of the project process and outcome, an increase in commitment to the project objectives and processes, and heightened credibility. These benefits play a significant role in the overall completion of land transport infrastructure projects.

Awini (2018) studied on the challenges of the implementation of water and sanitation projects in Gushegu District in Ghana. Data collection techniques included interviews and administration of semi-structured questionnaires. The respondents were selected through purposive and convenience sampling techniques. The study sort to establish why beneficiaries were not quite often involved in the planning of projects. A total of 135 respondents (54%) agreed that stakeholders are not always involved. Further, the results showed that 45.2% indicated that the stakeholders are neglected because of the misconception that beneficiaries are not capable of contributing meaningfully to the decision making of project. Other factors identified as impediments included organization requirements, time constraints or policies and the notion that planning does not directly concern beneficiaries. The study concluded that leaving out stakeholders would fuel some challenges during implementation. The study, however, failed to show the relationship and strength of the predictor variable, participatory project planning, hence the need for the current study.

Stakeholder partipation seems to cut across other infrastructural projects other than road projects. Mwanga and Kayunze (2016) conducted a study on the determinants of community participation in planning HIV and AIDS interventions under the national strategic framework in Mtwara region of Tanzania. The study adopted a cross-sectional research survey design, whereby, besides the 192 respondents randomly selected for questionnaire administration, 12 focus groups were selected for qualitative data. For each of the 12 focus groups, about 8 community members were purposively selected, based on their being considered to be very knowledgeable. The study findings indicated that 81.8% did not participate in planning the interventions even though regression analysis were not carried hence the current study which sought to study participatory project planning and performance of urban road transport infrastructure projects. Waweru (2015) listed factors that would promote community participation in development projects, these include, "..material (benefits), development interest, development need, previous development experience, wanting to belong, to serve the community, project meets needs and peer pressure."

Participatory project planning is equally linked to project budgeting and resource planning and allocation. A study by Ochieng and Sakwa (2018) on the impact of participative resource mobilization in the implementation of community water projects on in Kisumu County of Kenya. Both descriptive and correlational research designs were adopted in this study. The target population comprised of 360 households from which a sample size of 189 was obtained through stratified sampling. The study relied mainly on the questionnaires and not interviews for collection of the data. The current study being a mixed method, it adopted both data collection tools to enhance results and more specifically for triangulation. The study showed that a statistical significant influence existed between participative resource mobilization and project implementation of the projects efficiently. The P-value fof t-statistic for labour sourcing was 0.000 and that of finance mobilization was 0.003, both below the P-value of 0.05. The study recommended the importance of training the community members with relevant skills for implementing, operating and maintaining the projects.

Onyango, Bwisa and Orwa (2017) embarked on studying factors influencing the implementation of public infrastructure projects in Kenya. The target population was 650 comprising of project consultants and the direct beneficiaries of the project, hence a sample of 242. The null hypothesis was that participatory planning processes do not influence implementation of public infrastructure projects in Thika Sub-County, Kiambu Kenya. After the analysis the result indicated that participatory planning process would yield 24.5% of the variation in the implementation of the infrastructure projects. Similarly, Musyoka and Moronge (2017) examined the influence of project planning on implementation of county government construction projects. A descriptive survey and census technique were adpted whereas data was collected using questionnaires. The findings showed that taking all other independent variables at zero, a unit increase in project planning would lead to a 0.765 increase (76.5) in the implementation of county government funded construction projects.

2.5 Stakeholder Participation in Project Execution and Completion of urban road transport infrastructure projects

In the literature of the Project Management Institute (PMI), the execution phase is the stage where all planned activities are carried out to actualize the project. Execution is all about building deliverables that satisfy the intended beneficiaries or customers (PMI, 2013). It is often expected that team leaders make this happen by allocating resources and keeping the team members focused on their assigned tasks. According to the PMI, project execution relies heavily on the planning phase and the strength of stakeholders. The work and efforts of the team during the execution phase are derived from the documented project plan. Usman, Kamau and Mireri (2014) clarify that:

> *"Implementation phase principle is the third segment of the Life Cycle Management (LCM). This is a process for improving project delivery. The implementation phase principles include: mobilization, commissioning of the project, procurement, determination of cash flow, consultants and Government agencies as well as the construction processes which affects cost, time and quality standards."* (Usman et al., 2014)

Ling and Ma (2014) shows that project quality can be measured by determining the degree to which the implementation of the project is in conformity with terms (such as specifications), duration, budgets, aesthetics, operation, and the stakeholders' overall satisfaction with project quality. It affirms that stakeholder integration in different phases of a project lifecycle is in a direct and mutual relationship with the project quality. Project execution involves coordinating people and resources, managing stakeholder expectations as well as integrating and performing the activities of the project plan. As noted by Nankoris and Gakuu (2017), "Community participation otherwise known as participatory development is critical especially in aligning Kenya's development to the Vision 2030 and the Sustainable Development Goals (SDG)." During this phase, results may require planning updates and come up with fresh milestones. This may include changes to expected activity durations, changes in resource productivity and availability and unanticipated risks. During the project execution phase, the project team ensures that benefits management, stakeholder management, and project governance are executed in accordance with established policies and plans. Using these plans, the project team acquires and marshals the resources needed to accomplish the goals and benefits of the project. It involves managing the cost, quality and scheduled plans. The project team also ensures that all project stakeholders receive necessary information in a timely manner (Meridith & Mantel, 2009).

In his study on the impact of project construction on projects, Khwaja (2014) assessed projects in Northern Pakistan. He found that community participation is not always beneficial. He found that it was valuable in non-technical issues but not in technical matters. He generally found that beneficiary involvement, in particular, cash and in-kind contribution led to sustainable projects. Similarly, Paddock in 2013 reviewed three projects and observed the following: An El Salvadoran bridge project had a large community cash contribution during construction. This project has been successful with respect to community and government contributions in the design and construction, as well as to a quality-finished product. When the project was reviewed months later after its implementation, it was found to be functional. A Honduran wastewater project with beneficiary cash contribution and provision of equipment by the government was a success. This was attributed to the sense of ownership of the project by the community is very high due to the cash contribution.

Another Honduran bridge project had a large cash contribution from the local municipality and enjoyed a supply of labour locally. It was noted that the project success was as a result of a strong sense of ownership. Such contributions instill a sense of ownership which leads to project sustainability. In addition, participation at this stage results in capacity building and empowerment as members learn by doing. Olander and Landin (2015) researched on the project execution influence in the implementation of construction projects, indicated that an evaluation of stakeholder demands and influence should be considered as a necessary and important step in the planning, execution, and closure of any construction project. However, a critical examination of this study reveals that only a case study was used with a limited geographical scope and hence difficult to generalize the results. This study was also conducted in a developed country, which has different socioeconomic and economic circumstance as the LDCs (Kelly, 2017). Monitoring and control are sometimes combined with execution because they often occur at the same time. As teams execute their project plan, they must constantly monitor their own progress. This is usually done to guarantee delivery of what was promised. It, therefore, means that stakeholders must monitor tasks to prevent scope creep, calculate key performance indicators and track variations from allotted cost and time. This constant vigilance helps keep the project moving ahead smoothly (PMI, 2013).

Implementation of development projects must incorporate M&E to ensure effective implementation of the project Sheikh, (2010) studied people's participation in development projects at grass-root level in Bangldesh. The focus was on Lampur and Jagannathpur union parishad. The study revealed that poor people in the community are hardly or not at all included in the committed responsible for project Implementation. In most cases, these committees are dominated by those people considered to have strong socio-economic and sometimes political background or both. Similarly, the project committees are used as patronage distribution mechanisms. The local representatives take advantage of these development projects to build a political mileage for themselves. Hence Sheikh identified socio-economic and political contexts as common deterrents to participation in grassroots development process. Sheikh's assertions are supported by Sulemnana, Musah and Simon (2018) who assessed how stakeholder participated in Monitoring and Evaluation of district assembly projects and programmes in the Savelugu-Nanton Municipality Assembly of Ghana.

The research design adopted by Sulemana et al. (2018) was purely descriptive hence indicating that the study did not test the strength and relationship of the variable hence the need to use correlational research design to compliment the descriptive. This was a case study whereby a total sample of 196 people took part in the study through purposive sampling. The study used semi-structured interviews and questionnaires for data collection according to thematic areas. The study revealed that stakeholder participation of Municipal Planning and Co-coordinating Unit (MPCU) members and the District Assembly members in M&E of projects and programmes was high but low among the Zonal Council and also at the community levels which had negative impact on three things regarding development projects and programmes: first, transparency; second, accountability; and third, the sustenance. These studies are a revelation that community participation that needs to be supported.

Incorporating various types of communication media have influence on stakeholders' participation in the development process by contributing in the design, implementation, and also monitoring of development activities (Asian Development Bank, 2011). The stakeholders include the government, the private sector, and civil society. "Notwithstanding the level of participation, communication can contribute to increasing awareness, fostering behavioral changes, facilitating mobilization, and establishing partnerships in pursuit of common goals. However, the lack of it can also break down negotiations, limit alternatives to addressing problems, constrain benefit distribution of development interventions, lead to marginalization of stakeholders and, ultimately, restrict the attainment of desired outcomes," explains the Asian Development Bank (2011).

In a study on the influence of stakeholder activities on implementation of rural road projects in Machakos County in Kenya, Ndunda, Paul and Mbura (2017) established that implementation of road projects was positively and significantly influenced by project beneficiary participation ($r=0.712$, $p< 0.05$). An exploratory study by Lopes and Antonio (2013) on what might be the cause of delays in Information Technology (IT) projects in Brazil found that, as part of project execution, poor communication involving one or more stakeholders could adversely affect the project's deadline. These convergence of opinions among the authors confirms that stakeholder participation in project execution could result to implementation of projects within planned time, cost while meeting stakeholders' satisfaction.

Olander and Landin (2015) sought to establish the extent to which project execution influences the implementation of construction projects. A case study consisting of two projects was undertaken. The study also used both qualitative and quantitative research methods. The target population was 391 respondents within construction projects. The research was carried out using a questionnaire and interview guide. The study established that the project team acquires and marshals the resources needed to accomplish the goals and benefits of the project implementation of construction projects.

In a study by Mugabo and Mulyungi (2019) on "Effect of Stakeholder Engagement on Project Success in Rwanda," a descriptive survey design was employed. The target population for this study included a total of 43 project staff combined with representative stakeholders of youth project. As per the correlation analysis, there existed a strong positive relationship between stakeholder engagement in project execution and its success (rate of 0.903). The p value was 0.006 less than 0.05 level of significance, hence the need to study this variable further basing it on urban roads transport infrastructure. Further, the analysis revealed that an unstandardized beta coefficient demonstrates that a 1% increase of stakeholder engagement in project execution would result to an increase of 0.063 on success of the project. Although this study focused on the youth project, it is assumed that as a project, it must have undergone the same methodological approaches of project management and hence it is deemed significant in reviewing of the current literature. In addition, the project was in Rwanda while the current study is in Kenya.

Stakeholder may not always be required to participate in the development projects. On this note, Musyoki and Gakuu (2018) studied on the "Institutional factors influencing implementation of infrastructure projects by county governments in Kenya: A case of Embu County." One of the study objectives was to examine the influence of stakeholders during implementation of infrastructural projects. Both descriptive and correlational research designs were adopted to establish empirical results. The target population comprised of 55 employees at the Department of Transport and Infrastructure and 45 attaches working on temporary basis. The study however involved everyone in the target population qualifying for census. The study concluded that stakeholders had a negative and significant influence given a negative B coefficient of -0.0253 and a significant p value of 0.000 less than 0.05 the level of significance.

2.6 Stakeholder Participation in Project Closure and Completion of Urban Road Transport Infrastructure Projects

The last phase of the project cycle is expected to close when the project team delivers the intended finished project to the customer or beneficiaries, communicating completion to stakeholders and releasing resources to other projects (PMI, 2013). The PMI further note that vital step in the project lifecycle allows the team to evaluate the initial project goal and document the project and move on the next one, using previous project mistakes and successes to build stronger processes and more successful teams. Sanghera (2016) and Richman (2012) mention that there are two components of project closure – administrative closure and contract closure. Administrative closure refers to the activities related to getting acceptance for the project, quality analysis of the project, maintaining knowledge. The authors elaborate that administrative closure also includes identifying who will perform what task.

Sanghera (2016) provides the details of the input to and the output of project closure and the tools & techniques used during the closing process. The project closure combines two procedures – 'commissioning of the project deliverables and documentation of all experiences in the project' (Gardiner, 2015). The project closure is foreseeable but how it is handled and when it is handled has a huge impact on the success of the project (Hormozi, McMinn & Nzeogwu, 2010). Project closure for an IT project means that the information system has been built and is ready to be handed over to the customer. Cadle and Yeates (2014) further add that at this stage the requisite technical documentation, user manuals, testing, and training should be finished. The 'Project closure Report' will help in the handover process of the project deliverables and documentation to the customer, terminate supplier contracts and release resources back to the business. The 'Post Implementation Review' will help you to determine the level of project success and identify lessons learned for future projects. In regards, the involvement of stakeholders in a necessary condition, this will facilitate a comprehensive assessment of the finished project and hence the overall project performance.

However, it could be deduced that literature on the project closure processes is limited around the globe. Meanwhile, the intended project goal and objectives could be measured upon this very important project management phase. In this case, this research will be important. It was however noticed from the general literature that project closure phase management has not been sufficiently dealt with in the project management literature particularly in developing countries like Kenya. This explains why there is limited information on this important phase, hence the need for comprehensive study to establish more information on the essence of project closure on successful completion of urban road transport infrastructure projects (Cadle & Yeates, 2014).

Gustafsson and Yadav (2013) investigated IT projects within the Swedish public sector. The problem that occurred in this topic was that the projects ran overtime or over budget. While focusing on project closure in IT projects, the research interviews were used to conduct the data collection from two public sector organizations – Jönköpings kommun and Domstolsverket, both of these organizations have a dedicated IT department. Through the methods, theoretical framework and analysis were found with many different activities and theories on how to handle project closure in IT. The main subjects that kept coming up when addressing the problems of project closure were communication and planning. The responsibilities of the project manager were investigated and the focus was on closing an IT project. A descriptive diagram was created to show what was important during and before project closure. The study found that the clients stored the project documents for use in the operation and maintenance phase after completion of the project. The study found that participation in project closure helps in the handover process of the project deliverables and documentation to the customer.

The role of stakeholder participation in projects during closure is not clearly or exhaustively covered. O'Halloran, (2014) conducted a study to investigate the awareness of stakeholder management mong the project managers in the construction industry of Ireland. The study employed a quantitative 5-point Likert style questionnaire for the collection of primary data. The study was guided by a positivistic philosophical underpinning with a more deductive approach. The sample frame for the study consisted of people involved in project management activities who were employed by the Irish construction industry. A web-based survey was then conducted in which 64 project managers participated. The findings showed that project managers in the construction industry considered stakeholder analysis and engagement methods to be effective during project closure, which in turn influenced implementation of the project; and also way to gauge the success of the project. The results suggest construction project managers in Ireland are more likely to undertake stakeholder management processes in accordance with a standardized methodology. In addition, the respondents strongly advocate the use of a project stakeholder register and the central role of stakeholder management in delivering successful projects. The study provides us with a number of methodologies for project closure among them are: meetings, workshops, public consultation, focus groups and personal past experiences. Whereas the study by O'Halloran relied on Kendall's Coefficient of Concordance, the current study adopted Pearson Product Moment of Coefficient for analysis.

2.7 Combined Stakeholder Participation in Project Lifecycle Management, and Completion of Urban Road Transport Infrastructure Projects

Stakeholder participation in project life cycle management plays an essential role in project completion. Stakeholder participation is critical to the success of every project and organization. Biskupek (2016) upholds that "stakeholders as a whole group are significant for the implementation of the whole project," and also, "their impact is so important that it is possible to tell that they decide also about the project success or failure." This means that a project is successful when it achieves its objectives and the expectations of the stakeholders (Moodley, 2012; Miller, 2015). Regardless of the type of project, decisions regarding the degree of participation from various stakeholders are a significant issue that project management should consider (Usadolo & Caldwe, 2016; Nalweyiso, Nangoli, Muwanga, Byomire, Musasizi & Simiyu, 2015; Arca & Prado, 2011)

Stakeholders are usually defined as individuals who either care about or have a vested interest in the project (Freeman, 1984). They are the people who are actively involved in the work of the project and therefore, have something to either gain or lose as a result of the project. For example, in the management of a land transport project where a lane is added to a highway, motorists are stakeholders who are positively affected. However, this project will negatively affect residents who live near the highway during the project (with construction noise) and after the project with far-reaching implications (increased traffic noise and pollution). It is therefore important to identify all the stakeholders in the project upfront because leaving out important stakeholders or their functions in the project could shorten the life of the project. Through the literature, major stakeholders involved in a construction project are identified. These groups as stated by many scholars (Olander & Landin, 2015; Newcombe, 2013; Atkinson, 2011; Yang et al., 2010) as the major stakeholders of construction projects. In this study the following stakeholders were contacted to provide information: Client project managers, client project planners, consultant's resident engineers, Contractor's project managers, representative of PAPs, project managers of service providers.

Construction projects, from their early stages to the completion phases are executed through the efforts and involvement of various groups of people. These groups are referred to as the 'project stakeholders'. Stakeholders can help or hinder a project based on their power and objective to influence results in accordance with their individual concerns and expectations (Olander & Landin, 2015). Accurate management of stakeholders is important to the outcomes of the project and thus, the papers of the concept of stakeholder management have developed greatly in recent years (Yang et al., 2010). Different viewpoints of stakeholder philosophies have been stretched due to the growth of interest in improving the management and engagement of project participants. Jones (2011) classified stakeholder theory into three major approaches:" descriptive, instrumental, and normative". In the view of Kolk and Pinkse (2016), the stakeholder concept can be explained through three themes of (1) recognizing the nature of stakeholders, (2) investigating how and under which circumstances, stakeholders can impact organizational decisions and operations and (3) determining different plans and strategies to deal with stakeholders."

The concept of stakeholder was adopted by project management institute (PMI), following the definition of stakeholder as individuals, groups, organizations who may affect, be affected by, or perceive project activity, or outcome" (PMI, 2013). The Project Management Body of Knowledge (PMBOK) notes that a project has many stakeholders whose interests may be related, or in conflict. Very often than not several participants should be involved in a project's identification and analysis of their potential impacts on, and interest in, the project should be an essential part of a stakeholder management plan. Kobusingye, Mungatu and Mulyungi (2017), in a study on the Influence of stakeholders' involvement on project outcomes: a case of water, sanitation, and hygiene (wash) project in Rwanda, reported that stakeholders' involvement in project initiation, planning, implementation, and review contributed to project outcome. This study found that stakeholder involvement in project implementation contributed most to project outcome (r = 0.971) followed by project review (r= 0.681), then project planning (r =0.651) while projects identification (r = 0.571) had the least influence on project outcome. This study primarily studied the influence of community participation in water, and sanitation projects. The topic should have reflected community participation instead of stakeholder participation. Additionally, the study did not capture risk management practices in the projects

Reed, Graves, Dandy, Posthumus, Hubacek, Morris, Prell, Quinn and Stringer (2009) then defined stakeholder mapping (or 'stakeholder analysis') as a process that (1) defines aspects of a social and natural phenomenon affected by a decision or action; (2) identifies individuals, groups and organizations who are affected by or can affect those parts of the phenomenon (this may include non- human and non-living entities and future generations); and (3) prioritizes these individuals and groups for involvement in a decision-making process. The importance of stakeholders can also be determined by examining the needs of a business and the degree to which an organization is in need of a particular stakeholder (Olander & Landin, 2015; Jailaubekov, Willard, Tritsch, Chan, Sai, Gearba & Zhu, 2013). In certain instances, some stakeholders can be more important than others and the project leader should carefully analyze their requirements and attributes at different times during the project lifecycle. Phillip (2013) stated that the stakeholder theory should focus on the groups who can input into the decision-making process as well as who are affected by the outputs of such decisions.

Stakeholder management as a task is specific to context and therefore any strategies and methods applied should reflect this context (Bourne & Walker, 2015). In the construction industry, during the different stages of a project from planning through to the operation and maintenance, specific stakeholders get involved whose expectations can affect the outcomes of or may be affected by, both negatively and positively the implementation of the project (Olander & Landin, 2015). They include Client, Project Management team, Consultant and designing team, Local communities, Funding Bodies, Government authorities, Social services, Social and political organizations.

In the project environment, the relevant stakeholders are usually numerous, and can, therefore, vary significantly according to the degree of influence. This is why PMI (2013) maintained that power, legitimacy, and urgency are key characteristics of stakeholder analysis in research. Therefore, all project managers are required to develop sufficient understanding of these characteristics, which are changing variables within the various stakeholders in a project environment. According to (Moodley, 2012), the number and nature of stakeholders must vary with the life of the project; it would, therefore, make sense to carry out the review of identification throughout the project life cycle. The project life cycle serves to define the beginning and the end of a project. The project cycle definition also determines which transitional actions at the end of the project are included and which are not. Therefore, a project life cycle can be used to link the project to the on-going operations of the performing organization.

In the project environment, the relevant stakeholders are usually numerous, and can, therefore, vary significantly according to the degree of influence. Stakeholder Involvement can take place in different parts of the project cycle and at different levels of society, and take many different forms. These can range along a continuum from contribution of inputs, predetermination of projects, information sharing, consultation, decision-making, partnership and empowerment. Involvement is both a means and an end. As a means, it is a process in which people and communities cooperate and collaborate in developing the project (Andersen, 2009). Therefore, a project life cycle can be used to link the project to the on-going operations of the performing organization. Figure 1, illustrates the phases of project lifecycle management, (PMI, 2013) where some of the indicators of the project phases are also shown.

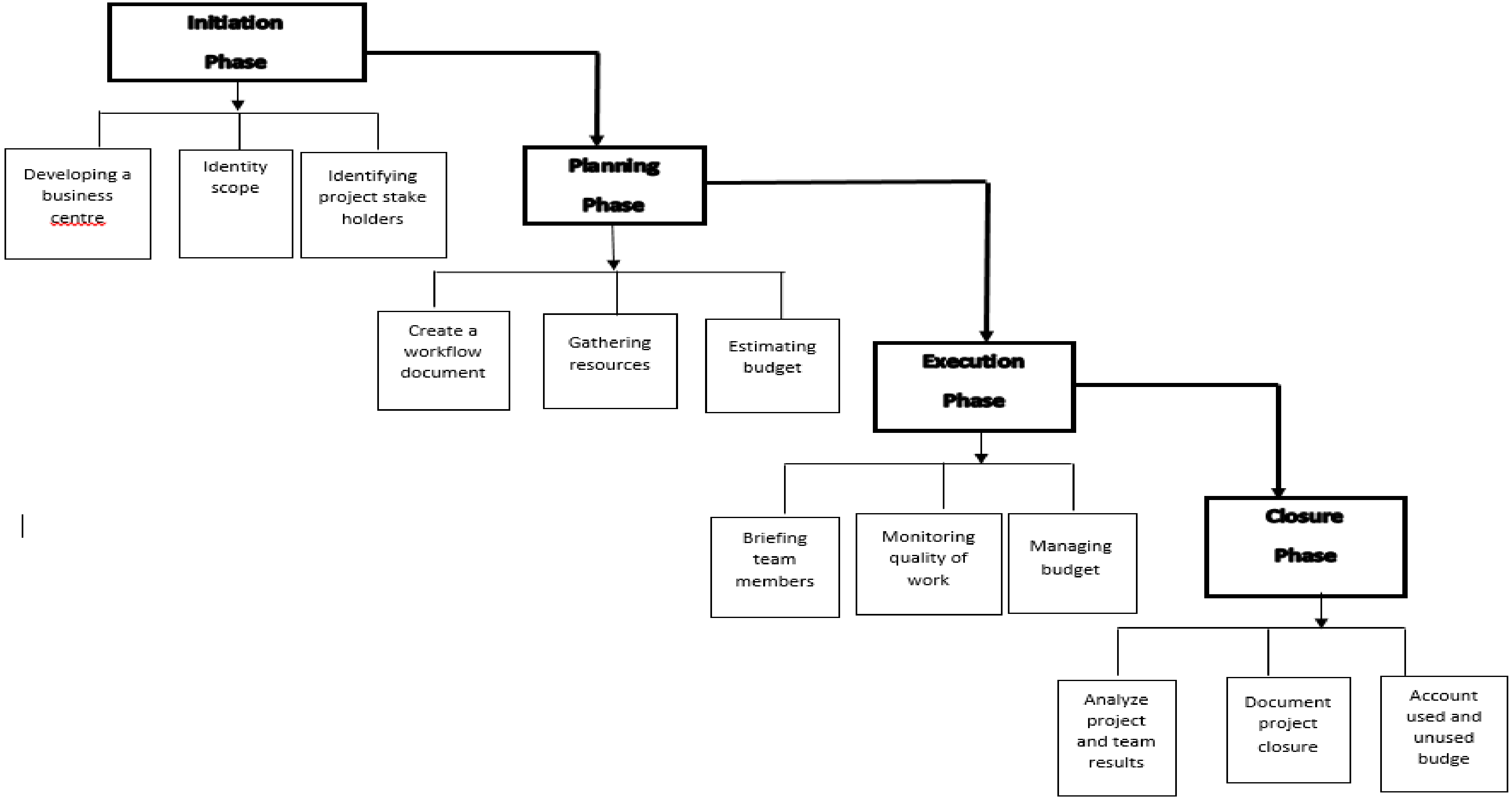


Figure 2.1: Project Life Cycle (PMI, 2013)

Therefore, stakeholder participation can take place in different places in the project cycle, including initiation, planning, execution or controlling and closure, and also at different levels of society. These can range along a continuum from the contribution of inputs to predetermined projects and programmes to information sharing, consultation, decision-making, partnership, and empowerment. Participation could be seen as both a means and an end. As a means, people and communities cooperate and collaborate in development projects and programmes in a process. As an end, participation is a process that empowers people and communities through acquiring skills, knowledge, and experience, leading to greater self-reliance and self-management.

Stakeholders input should be taken into account in accordance with their particular concerns on different project definition elements. Yu, Shen, Kelly & Hunter (2016), identified seven significant factors that lead to success in defining the project scope process. Among these, they advised that the interest of stakeholders must be given a balanced consideration. Thus, different stakeholders need to contribute differently when evaluating the completeness of different scope definition elements.

Mkutano and Sang (2018) studied on role of project life cycle management practices on the performance of non-governmental organizations projects within Nairobi City County, Kenya. The study guided by theory of constraints, the contingency theory and agency theory. This study used descriptive research design. The study findings indicated that there was improved project performance due to effective use of project life cycle management practices such as communication, planning, execution, closure, stakeholder participation and monitoring and evaluation of project activities.

Ndegwa, Mavole and Muhingi, (2017) sought to find out the effects of public participation in the implementation of successful health projects in Nyeri South sub–County in Kenya. The study focused on the entire project management cycle: identification, designing, execution, and M&E. The study adopted a descriptive study design by using open and close-ended questions from the local community and interview among county staff. Both random and stratified sampling were employed hence a target a sample of 100 respondents was obtained. The result showed that since the calculated value of chi square was greater than the table value of chi-square in all the four hypotheses, all the null hypothesis were rejected and all four alternate hypotheses were accepted. The conclusion was that, public participation influences project identification, project planning and project M&E for successful implementation of public funded health projects hence the need to involve them in all the four stages of any public project to ensure that they attain their own objectives and equally projects are also accepted by the targeted community.

The current study, however, employed analysis of variance (ANOVA) to establish the strength of the variables under the study. The study by Maunda and Moronge (2016) also sought to examine how project life cycle management influenced completion of public projects in Kenya. Through a descriptive research design and correlational design, a target population of 131 projects was arrived at. In collection of primary data, a census survey design was adopted. The findings indicated that there existed a strong and a positive relationship between project lifecycle management and completion of public projects as represented by R value (0.898).

Mavuti, Kising'u and Oyo (2019) studied the effect of project management practices on implementation of funded projects at Kenya ports Authority. This study adopted a descriptive research design approach. The target was 364 respondents out of which a sample of 191 respondents was obtained. Analyses were performed by use of Correlation regression and more specifically Pearson's correlation to show relationship among the variables. Tested under the combined project management practices, included; M&E practices, stakeholder's participation, risk management and project planning. Hence, the findings revealed that R=0.699 indicating a strong positive correlation while P-value was 0.000 at alpha 0.05%. Overall, project management practices explained 48.8% of total variation in the implementation of the project. The current study, however, combined project initiation, project planning, project execution and project closure vis a vis implementation of urban roads infrastructure in Kenya.

2.8 Risk Management Practices and Completion of Urban Road Transport Infrastructure Projects

Risk is defined as an uncertain but potential element that always appears in the technical, human, social and political events, reflecting changes in the distribution of possible outcomes and subjective probability values and objectives, with possible damaging and irreversible effects. Fan, Li and Zhan (2015), researched on generating project risk response strategies in China and found that the case-based decision analysis methods are significant in generating project risk response strategies from different perspectives. This article only focused on risks management response strategies, which involves only one aspect of risk management practices; hence, the need for extended study on comprehensive risk management practices.

Risk management is an important part of planning for projects. The process of risk management is designed to reduce or eliminate the risk of certain kinds of events happening or having an impact on the project. The purpose of risk management is to identify potential problems before they occur so that risk-handling activities may be planned and invoked as needed across the life of the product or project to mitigate adverse impacts on achieving objectives (Rosario, 2010). Risk management is a continuous, forward-looking process that is an important part of the business and technical management processes. Risk management should address issues that could endanger the achievement of critical objectives. A continuous risk management approach is applied to effectively anticipate and mitigate the risks that have a critical impact on the project. Effective risk management includes early and aggressive risk identification through the collaboration and involvement of relevant stakeholders. Strong leadership across all relevant stakeholders is needed to establish an environment for the free and open disclosure and discussion of risk. Risk management is a critical component of project management. This is so because risks have both positive and negative consequences that need to be well managed in order to achieve project success and performance. As an integral part of project management process, the objectives of project risk management processes are to increase the probability and impacts of positive events and decrease the probability and impacts of adverse events (Caron, 2010). To overcome the lack of informality in project risk management, the development of formal risk management processes has risen to prominence and obtained much interest recently (Carr & Tah, 2017).

A number of authors suggest that the risk management process can be divided into steps and phases and may consist of some connected elements. According to Sweeting (2011), project risk management process includes three simple and systematic stages which reflect main functions of risk management in the projects; risk identification, risk analysis and risk response. In this sense, the risk is viewed as a linear process that involves the identification and analysis of risk during the entire project's lifecycle.

In addition, Mohammed (2015) reported on Risk and Stakeholder Management in Mega Projects beyond the Realms of Theory in the Kingdom of Bahrain. The research concluded that a large percentage of the delays, difficulties and cost overruns are attributed to risks related to poor stakeholder-needs-identification and the absence of clear risk and stakeholder management strategies. The Author argues that proper stakeholder management is a measure of project success. Though the study has relevance to the global subject area of the study, it however, lacks specificity found in the Kenyan environment. Further, the research did not include an interview survey that would have provided more in depth information. This necessitates further studies in the subject matter. This means that risk should be seen as a qualitative or quantitative assessment, which is supposed to be carried out for every identified risk so that an adequate risk response action is prepared beforehand. Therefore, this linear risk management process is a good starting point for a successful project risk management. However, it needs to be known that new risks may appear after the risk response action stage. Such risks need to be identified, analyzed and responded to; thus making it difficult to associate risk management process with a linear process. Therefore, some authors view risk management as a cyclical process. Zuo, Zang, Wang and Jiayuan (2014) divided the risk management process into five phases: risk identification, risk estimation, risk evaluation, risk response, risk monitoring and controlling. These processes are very important blueprints for this study and discussed in the following sub-sections.

According to Caron (2010), risk identification is defined as the process of systematically and continuously identifying, categorizing and assessing the initial signs of risks associated with a construction project. Risk identification is an iterative process that involves the project team, stakeholders and other managers affected by or who affect the project, and finally outside individuals who can comment on the completeness of the risk identification based on their similar experiences (Wysocki, 2014). By identifying risks at an early stage of planning a construction project or a tender and assessing their relative importance, the project manager can be adapted to reduce the risks and allocate them to the parties best able to control them or absorb them should they occur. Studies should be carried out early in the life of a project, well before decisions are made to proceed with the project (Taroun, 2014).

The risk assessment process received higher attention from researchers as compared to other processes. The objective of risk assessment methods is to facilitate the application in the estimation of time and cost of a project that has an implication on the project performance. As a result of the importance of it several methods for risk assessment have been developed which can be clustered into three categories: qualitative assessment (Taroun, 2014; Lazzerini & Mkrtchyan, 2011), quantitative assessment (Abdelgawad & Fayek, 2010), and hybrid techniques called also semi-qualitative and semi-quantitative techniques (Marhavilas, Koulouriotis & Gemini, 2011). The qualitative assessment evaluates, prioritizes the identified risk items and highlights the critical risk items based on their respective risk values.

The quantitative risk assessment evaluates the consequences, and the probability of occurrence of critical items in the risk register and evaluates time and cost at the bidding phase on market level including the country level for international market selection (Dikmen, 2009). Therefore, the quantitative risk value can be calculated using some statistical methods. Researchers utilized different approaches to develop their methodologies for risk assessment such as deterministic-based, simulation-based, and fuzzy set based.

Shaheen, Wan and Myers (2014) introduced a quantification method for estimating the cost range of construction project using fuzzy set theory. However, their method includes a lengthy procedure for data collection using several rounds of the Delphi method. Similarly, Salah and Moselhi (2015) provide a quantitative method that provides a simpler procedure for range cost estimating and provides a systematic calculation for contingency associated with the project. However, both methods did not consider the fuzzy membership calculations and assumed the membership function of cost range estimating has a trapezoidal shape which does not always reflect the reality.

In addition, fuzzy set theory has been used to quantify the risk associated with a specific type of projects (Li & Zou, 2012; Tong-yin, 2011; Xu et al., 2010). Ebrahimnejad et al. (2010), contracts (Chan et al., 2011; Bi & Tan, 2010), or specific risk categories (Ling & Ma, 2014; Aminbakhsh, 2013; Arikan, 2013; Liu & Tsai, 2012; Badri et al., 2012; Rolstadas et al., 2011; Kong, Chen, Kweon & Park, 2011; Ling & Ma, 2014). This analysis implies that risk assessment has some consequences in project management and performance. However, these methods quantified the risk at the macro level and they are applicable only when a limited number of risks are involved. There is the need for further investigation on the subject.

Risk mitigation process has major influences on the success of the risk management plan and has an important impact on cost overrun and schedule delays of projects (Hanna, Swason & Aoun, 2014). Therefore, the risk mitigation process has a major impact on projects performance; which this study focuses on. Despite that, considerably less work has been directed toward risk mitigation (Lyons & Skitmore, 2014). Majority of the risk mitigation work available in literature focused on the use of general mitigation strategies such as avoidance, transfer, retention, and reduction (Zhang & Fan, 2014; Fang et al., 2013; PMI, 2013; Abdelgawad & Fayek, 2010). However, a recent survey conducted by Burns (2012) highlights the ineffectiveness of general mitigation strategies. The results of this investigation showed that 3.7% suffer from an increase in cost and 33.3% of the participants received no reduction when risk transfer has been used. It also showed that 4.6% suffered from an increase in risk cost, 34% were not sure, and 7% received no reduction.

As a result, Fan, Li and Zhang (2015) introduced a selection procedure for risk response using case-based reasoning (CBR). Their method selected the risk response(s) based on a similar case from historical data. However, their method is predicated on the availability of historical data and its application required human interventions especially for the identification of inapplicable strategies. Also, their selection procedure is lengthy and it is only applicable when a limited number of risks are involved. Other researchers focused on the evaluation of a limited number of risk mitigation strategies (Morris, 2014; Agrawal, 2012; Abdul-Rahman et al., 2012; Chan et al., 2011; Hallowell & Gambatese, 2009). Morris (2014) provided a review of practical mitigation actions such as “buying an insurance policy” however this review did not provide any systematic and structured procedure for selection of risk mitigation strategy.

Risk monitoring process represents a major challenge for practitioners, especially under the ever-increasing complexity of construction projects (Wilson, 2015). Risk monitoring is important to ensure that the exposure to a specific risk is not being exceeded, Hopkin (2014). The aim of the monitoring process is to establish an indicator system over which project managers could evaluate the risk mitigation plan. Unfortunately, the risk monitoring process received considerably less effort from researchers even though the majority agreed that risk monitoring is a mandatory process. The lack of risk monitoring methodologies in literature enforced practitioners to use basic project management tools, for example, Earned Value for risk monitoring (Pritchard, 2015; Kerzner & Kerzner, 2017). The results of a survey conducted by Deloitte and Forbes (2012) revealed that less than 25% of construction industry practitioners use continuous risk monitoring. It also showed that 90% of surveyed executives consider, as a priority, the restructure of their procedure by the end of 2015. Also, half of the survey’s respondents confirm their plans to invest in the development of a continuous risk monitoring system.

In addition, Zi-mei and Ke-fan (2013) declared that no attempt was made to identify the precise timing for the initiation of risk control process. Fang et al. (2013) concluded that the risk monitoring process has a continuous evolvement of risk network since there are always newly identified risks which should be evaluated. Consequently, the risks should be re-evaluated based on the interactions of previously mitigated risks and newly identified risks. Their method recommended the update of risk network and risk response plan based on newly identified risks. However, it did not provide a systematic procedure for monitoring the performance of the selected mitigation strategy.

Also, Liu, Ren and Liu (2011) proposed a method for risk monitoring based on a risk matrix method. Their method recommended the use of risk monitoring instruments based on the ranking of risk level using a scale from 1 to 5. The risk matrix method has been used to evaluate the risk level of the risks associated with deep excavation projects. They claimed that their method allows for the identification of abnormal and dangerous situations. However, their method provided a reactive monitoring system which is based on field observations and reports. It also provided general recommendations for risk monitoring rather than a systematic procedure with a clear set of evaluation criteria.

Ondara, Bulla and Kamau (2017) determined how risk management strategies influenced performance of construction firms in selected counties in Kenya. The theoretical framework revolved around five theories that offered a foundation for interrogating the relationship between the variables under study. These were the theory of constraints in project planning and management, fuzzy set theory of risk management, institutional theory of the regulatory environment, financial economics theory of corporate risk management and shareholder value maximization theory. This study used an explanatory research design and the research philosophy was based on positivism. The population of the study was all construction firms carrying out construction and public works in selected counties in Kenya, registered by the Republic of Kenya as of July 2011 to June 2012, a total of 2,414 construction firms.

The sample size was 97 respondents, and simple random sampling was used for identifying respondent firms in Nairobi County, Nakuru County and Machakos County. Data collection was done using a self-administered semi-structured questionnaire. Data analysis was done using both descriptive statistics and inferential statistics. The findings led to the conclusion that resource risk, personnel risk and project control risk management strategies had a significant influence on firm performance, implying that any effect on firm performance was not solely due to chance. Litigation risk management and insurance risk management strategies did not have a statistically significant effect, implying that any effect on firm performance was solely due to chance.

A study by Aduma and Kimutai (2018) on project risk management strategies and project performance at the National Hospital Insurance Fund (NHIF) in Kenya sampled a population of 241 by through stratified proportionate random sampling. Self-administered questionnaires were used in primary data collection. Inferential analysis of data was done using Pearson correlation coefficient while multiple regression analysis was used to show relationship between the independent variable and dependent variable. In conclusion, risk preventions had the greatest effect on the project performance, then followed by risk control and risk acceptance, however risk transfer had the least effect. The results from the analysis showed that adjusted R squared was 0.690 inferring that project risk management practices explains 69% of variations on project performance. The use of adjusted R squared results instead of R squared is allowed since the variable under the test incorporated several variables yielding a multiple regression; this current study however endeavored the R squared results because of simple linear regression.

Wibowo, Hatmoko and Nurdiana (2018) studied risk management in Indonesia construction project, a case study of a Toll Road Project at Semarang-Solo Section one. The findings indicated that each stakeholder had differing perceptions of risks because of their unique interests in the project. The risks were categorized as; economic risk; contract and legal risks; construction risk; risk of income; risk of operation and maintenance; political risk; social risk; and force majeure risk. Construction risks was on the top list as stakeholders perceived. The authors, however, concurred that there is need for all the stakeholder including contractor, owner, society, design consultant and supervisory consultant in construction to carry out risk management practices hence the current study.

Kangari (2015) assessed the attitude of large U.S. construction firms toward risk, and determined how the contractors conducted construction risk management. The author surveyed the top 100 large U.S. contractors. The views gathered were compared by the ASCE's risk survey. Kangari, therefore notes, "in recent years, contractors have been more willing to assume risks that accompany contractual and legal problems in the form of risk sharing with the owner. Risks of this type include change-order negotiations, third-party delays, contract delay resolutions, and indemnification and hold harmless." Other findings showed that contractors assume the risk related to actual quantities of work, a diverging finding of the ASCE survey. This finding left a research gap in terms of assessing the moderating effect of risk management practice between stakeholder participation in project life cycle management and implementation of projects hence this current study.

Management of risk remains fundamentally important if construction projects are to be delivered successfully. El-Sayegh (2014) studied risk management practices in the UAE construction industry. Construction companies respond to risks by adopting various risk management practices. There is a need to evaluate these practices in order to identify deficiencies and to identify key barriers impeding the successful implementation of a comprehensive risk management process. A questionnaire developed was distributed among the construction professionals in UAE. Respondents involved in the study indicated they had applied risk management processes or practices especially the risk identification practice and quantification. The study however noted that although some companies are committed to risk management practices, there is still need for improvement of certain practices (decision trees, planning risk responses and assigning risk response owners) and also promote utilization frequency of use. The top three barriers to risk management implementation were listed as follows; managers' understanding of the techniques, ability to find a suitable risk management method and difficulty experienced in obtaining both estimates and assessment of probability. Maru (2015) opined that, "In order to complete a project successfully it is necessary that there is a periodical risk monitoring available. Risk registers have to be developed and additional resources be deployed to handle the identified risks."

Chelishe and Kikwasi (2014) studied the critical success factors for implementation of risk assessment and management practices in the Tanzanian construction industry. A total of 67 construction professionals attached to private and public, foreign and local firms were included in the study. Data was descriptively and inferrentially analyzed using ANOVA and Spearman's Rank Correlation to show difference of opinions between groups. The respondents were placed into three categories or groups: Group one clients; Group two contractors; and Group three consultants. A p-value less than 0.05 indicated that the groups had different opinions regarding Critical Success Factors (CSF). Further, findings obtained indicated that the three highly ranked CSF were "awareness of risk management processes"; "team work and communications"; and "management style" then the least important as per the rankings were "co-operative culture"; "customer requirement"; and "positive human dynamics." Although this study revealed that construction stakeholders are aware of risk management processes, it did not test its influence on the implementation of road construction infrastructure projects, hence the current study.

2.9 Stakeholder Participation in Project Lifecycle Management, Risk Management Practices and Completion of Urban Road Transport Infrastructure Projects

The use of risk management practices has hardly been used in the construction industry as a moderator. However, Zwikael and Ahn (2011) opine that Risk is an important moderator for measuring success of projects across industries and countries. Naeem, Khanzanda, Mubashir and Sohail (2018) add that:

> *"Project risk management is a continuous process of identifying, analyzing, organizing and mediating dangers that debilitate an activities probability of success regarding cost, plan, quality, wellbeing and specialized execution." Naeem, et al (2018, pg. 91)*

Zwikael, Pathak, Singh and Ahmed (2014) studied the moderating effect of risk on the relationship between planning and success. The study by Zwikael *et.al* investigated the effectiveness of planning by analyzing 183 project managers who were also supervisor dyads. The findings of this study revealed that risk moderates the impact of planning on success. The findings further implied that managers have an obligation of planning in high risk project situations so that project efficiency is attained. In addition to this, steering committees need to involved in approving low-risk projects to reap more benefits. It should be noted that project success and project completion are terms that are used interchangeably in project management (Shariatfar, Beigi & Mortaheb, 2019; PMI, 2013). The terms are derived from or make up the traditionally known iron triangle of time, cost and quality.

Same literature suggests addition of stakeholder satisfaction and scope. Participants were drawn from four departments of the Fijian government who comprised of Ministry of Works, Transport and Public Utilities; Ministry of Defence and National Security and Immigration; Ministry of Finance; and Ministry of Strategic Development National Planning and Statistics. The instrument of data collection was questionnaires were administrated in English. Upon completion, questionnaires were matched by the team of researchers. Both null and alternate hypotheses were used since the literature gathered was not converging. The hierarchical results showed that risk level does moderate the influence of planning on project efficiency given β =0.20, and $p < 0.05$. Additionally, risk level had a moderating influence between planning and project effectiveness given β = -.20 and $p<.05$). Thus, the alternate Hypothesis was supported.

Construction project risks are likely, as alluded by many researchers, to occur during planning and execution phases (Smith, Merna & Jobling, 2006). The moderating effect of project risk mitigation strategies on the relationship between planning and success of project was studied by Zailani, Ariffin, Iranmanesh and Moeinzadeh (2016). The study used Partial Least Squares Structural Equation Modelling (PLS-SEM) technique whereby SmartPLS Version 3.0 was used for analysis and testing the research model. The results of the moderating effect of the three risk mitigation strategies on the relationships between delay causes and project performance revealed that both project visibility and flexibility could reduce the negative effects of resource and coordination issues that directly affect project performance.

The sampling frame of this study consisted of all 1322 construction contractor companies within Malaysian construction industry. Thus, a random sampling method was used to arrive at a sample of 225 construction companies, which were served with 700 questionnaires, and a total of 212 returned. The study affirmed that project risk mitigation strategies have a moderating influence on project planning and success. However, the current measured the moderating influence of risk management practices in terms of risk identification, risk assessment, risk mitigation and risk control agains the dependent variable, completion of urban roads transport infrastructure projects. Urbański, Haque and Oino (2019) investigated "The moderating role of risk management in project planning and project success: evidence from construction businesses of Pakistan and the UK." The objective of the study was to investigate the moderating effect of risk management on project planning and project success. The study, thus, established that risk management has a moderate influence on successful implementation of project planning, that eventually leads to the success of a project.

Studies have shown that risk management practices have an effect on the relationship between stakeholder participation in project life cycle management and completion of infrastructure projects. As stated by PMI (2013) in order to obtain project success, a project manager needs to facilitate the contribution of stakeholders in various project phases. However, in the view of Joaquin, Hernandez and Aspinwall (2010) using the effective interaction mechanism with stakeholders to improve project outcomes and achieve success is not particularly evident in construction industry practices. Different stakeholders can be a part of a large project's executive team and depend on how they get involved and what their roles are, they might have different interests in, impacts on and ambitions for a project (Kolltveit & Grønhaug, 2014). Different stakeholders have various demands and while a project can affect one stakeholder group negatively, it can be of positive or even critical use to another. According to Watson, Kumar and Michaelson (2012), if major stakeholders understand each other's point of view, it can help to build and improve relationships, hence minimizing the establishment of immovable and rigid ideas and assumptions and this, in turn, will help to facilitate better communication amongst them.

Naeem, Khanzanda, Mubashir and Sohail (2018) studied the "Impact of Project Planning on Project Success with Mediating Role of Risk Management and Moderating Role of Organizational Culture." The study was descriptive in the sense that it adopted questionnaires. A total of 120 questionnaires were circulated to a sample conveniently picked. Hence, the data collected was primary in nature. The regression analysis conducted revealed that mediation hypothesis proposed that risk management mediates the relationship between project planning and project success was accepted. Although this study used risk management as a mediator, the current study proposed the use of the same as a moderator to measure its influence on the combined stakeholder participation in project lifecycle management. Furthermore, besides planning as used by Naeem et al., the current study has added three more predictor variables which include initiation, execution and project closure.

2.10 Theoretical Framework

This study was anchored on a number of relevant existing theories. These include; Stakeholder Theory, Theory of Change, Agency theory. These theories provided a vital theoretical foundation on the subject of the study by relating the study theme with study variables.

2.10.1 Stakeholder Theory

This theory was propounded by Freeman (1984). According to Freeman, the purpose of a project is to create optimum value for stakeholders. The theory identifies and models the groups which are stakeholders of a project, describes and recommends methods by which management can give due regard to the interests of those groups (Hassan, 2012). Stakeholder theory is primarily a management theory, which claims that power and urgency must be adhered to if managers are to serve the interests of stakeholders. As such, successful completion of projects cannot be devoid of stakeholder engagement from which project success is likely to happen.

According to Freeman (2010), the stakeholder theory attempts to address the principle of who really matters in the projects or business environment. It assumes that values are necessarily and explicitly a part of undertaking tasks. It encourages managers to articulate the shared sense of the value they create and what brings its core stakeholders together. Freeman further posits that stakeholder theory is managerial in that it reflects and directs how managers operate with its focus being based on two core questions that are what is the purpose of a firm and what responsibility does management have to stakeholders. This propels managers to generate outstanding performance and to articulate what kinds of relationships they want and need to create with their stakeholders to deliver on their purpose. This asserts that shareholders are important constituents in any activity. The stakeholder theory is important in understanding the contribution of stakeholders in project completion and management process as well as ethical considerations that may significantly affect completion of a project.

Koehler (2010), states that the stakeholder theory has two ethical questions that must be resolved. First, those organizations are dependent on their stakeholders for their success and failure and the other one is based on the theory of ethics. Essentially when an entity is initiating a project it must ensure through the whole course to the end that all the relevant information is relayed to stakeholders. In public projects like road and rail construction projects where safety features are very significant, project managers have the moral and integral authority to ensure the expected standards and feasibilities done are communicated to the stakeholders and acted upon to minimize future problems (Bourne, 2016).

Various authors have argued in support of stakeholders' theory. Bourne (2016), suggested that failure of the completion of a project is caused largely by stakeholders' perception of a project and their relationship with the project team. Primarily, the project team should work to meet the stakeholder's perceptions and expectations. Bourne suggests that to manage this relationship the stakeholder circle methodology needs to be applied. This is a mechanism for analyzing each key stakeholders influence and understanding their expectations, which helps project managers define appropriate procedures for engaging stakeholders. Analytically, a stakeholder approach should assist managers on how the task or company fits into its larger environment (Freeman, 2010).

Contrary to these provisions, there have been vocal critics who have discredited the theory and its propositions. Milton Friedman has criticized the theory by pronouncing that the only social responsibility of corporations is to provide a profit to its owners' contrary to what the stakeholder theory claims. It has also been viewed as challenging for other corporations where credible obligations apply. Despite its relevance in the current study, the stakeholder theory is not devoid of some critiques. One of the critiques, of the stakeholder theory of conceptualization is Key (2011). He critiques the stakeholder theory conceptualizations for not meeting the requirements of scientific theory and suggests that the theory does not satisfy its conceptual requirements (Key, 2011).

Applying the theory to this study implies that stakeholders are part of urban road transport infrastructure projects in Kenya and as such have a significant role in the processes and procedures that lead to the improvement of their completion. The theory is therefore relevant in the evaluation of urban roads transport infrastructure projects in the identification of the key stakeholders and their roles including their interests, power and influence (Freeman, 2010).

2.10.2 Theory of Change

Other than the stakeholder's theory, the theory of change is considered suitable for understanding the current study. According to Stein (2012), the theory of change emerged in the United States in the context of improving evaluation theory and practice of community initiatives. Connell *et al*. (2009), noted that the theory of change is a specific type of methodology for planning, participation, and evaluation used in the philanthropy, not for profit and government sector to promote social change. The theory defines long-term goals and then maps backward to identify necessary change preconditions. The theory of change explains the process of change by outlining causal linkages in an initiative that is shorter term, immediate of longer-term outcomes.

The identified changes according to the theory are mapped as the outcomes pathway, showing each outcome in a logical relationship to all others as well as chronological flow. Connell explains that rationales or statements of why one outcome could be an important prerequisite of another explain outcomes in the theory of changes. Stein (2012) notes that the innovation of the theory of change lies in making the distinction between desired and actual outcomes and in requiring stakeholders to model their desired outcomes before they decide on forms of interventions before they achieve those outcomes. According to Vogel (2012), the theory of change can begin at any stage of an initiative depending on the intention. A theory developed at the outset is best at informing the planning initiative, having worked out a change model. This, as Vogel adds, helps practitioners make decisions that are more informed.

The stakeholder theory and the theory of change are related to this study, in the sense that, under stakeholder's theory, the influence of different stakeholders on the successful completion of projects is important. Various stakeholders are significantly influential on the extent to which a project is to be implemented while others may not necessarily play a significant role although they are part and parcel of the project. Depending on the significance of the stakeholders, project managers are in a position to examine and make a decision on which stakeholder interest deserves more attention as far as implementation is concerned (Freeman, 2010). The theory of change, in the context of this study, is suitable in the identification of the methodology to be used by the project managers in the participation of stakeholders in all phases of project lifecycle management so as to influence the completion of urban road transport infrastructure projects. The theory of change contextualized in the current study provides an understanding of the importance of situational analysis during project implementation and innovative approaches in which project managers can embark on to reduce resistance to change.

2.10.3 Agency Theory

Agency theory is based on a number of assumptions about the man. The most common belief is that Agency Theory is based on the economic model of man (Shapiro, 2015). Although the influence of Principal-Agent theory cannot be denied (Asher, Mahoney & Mahoney, 2015), the practical and empirical nature and implications of Positive Agency Theory on stakeholder is of great concern in recent studies. This theory has been used widely in the business and economics studies and it is also referred to as the stewardship theory. According to the theory, managers of asset left on their own are expected to act in the best interest of those who have appointed or elected them (constituents). They are the agents while the constituent is the principal. This implies that the entire project ought to be carried out in a manner to benefit constituents.

In agency theory terms, the project beneficiaries and constituents are principals and leaders who are agents and hold some elements of power. Therefore, the agents, since they hold power on behalf of the principal, are expected to exercise control for the benefit of the principal by ensuring sufficient returns. According to Bonazzi and Islam (2014), agency theory specifies mechanisms which reduce loss and increasing benefits (wealth creation) to the principal. This theory is significant in managing infrastructure projects and it indeed emphasizes on the need of taking the interest of the stakeholder in all management decision of infrastructure projects. The agency theory is therefore applicable in this study of stakeholder participation in project life cycle management, risk management practices and completion of urban transport infrastructure projects.

2.11 Conceptual Framework

This study is based on the conceptual framework shown in Figure 2.2. It shows the relationship between the independent, dependent and moderating variables, which was the subject of investigation.

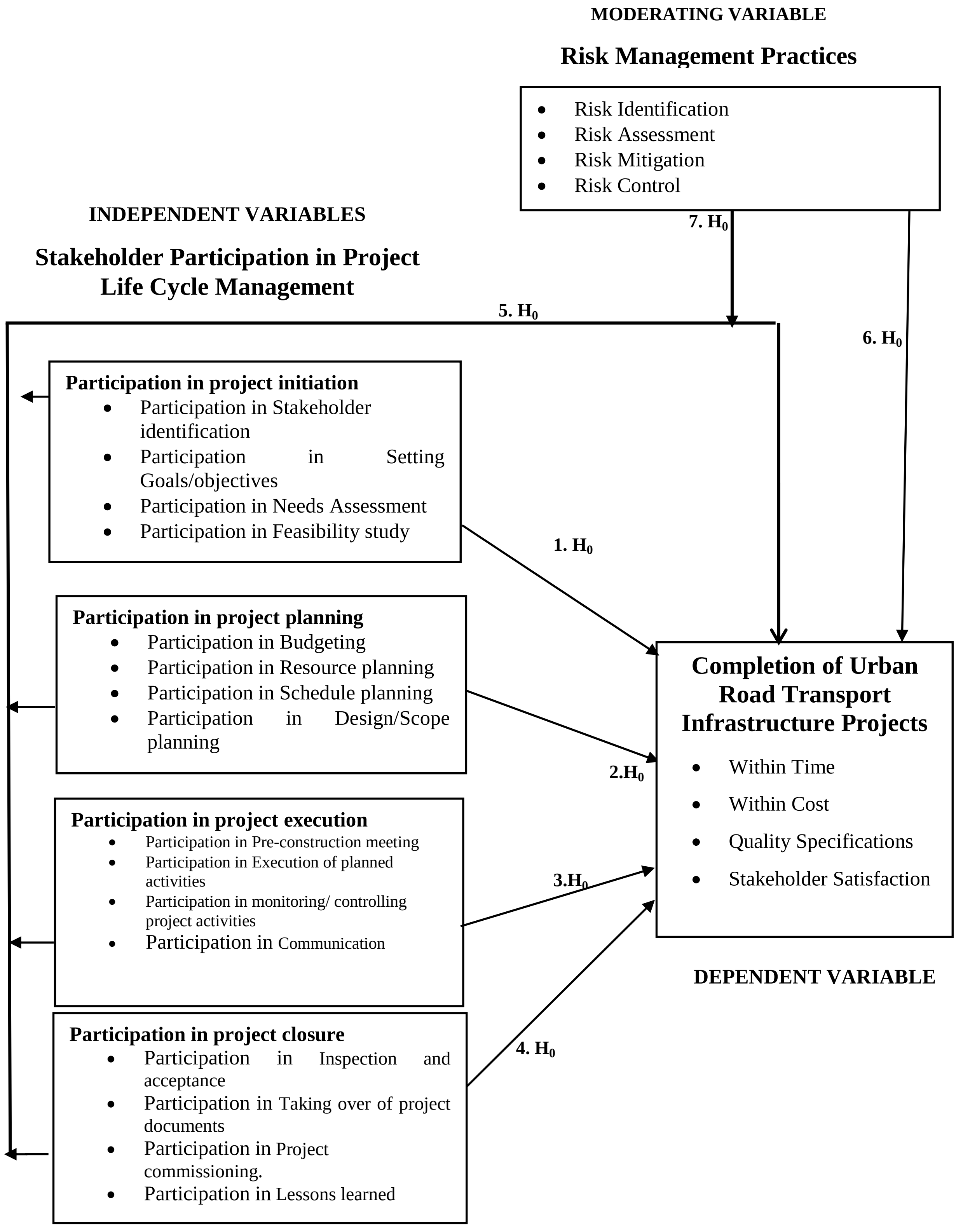


Figure 2.2: Conceptual Framework for Stakeholder Participation in Project Life Cycle Management, Risk Management Practices and Completion of urban road transport infrastructure projects in Kenya

The conceptual framework in Figure 2.2 exhibits the intended variables relationships of this study. It shows first by the arrow direction the variable relationship between the main variables (the independent and the dependent) influencing the study. It indicates how the stakeholder participation in Project Life Cycle Management (independent variable) influences the Completion of urban roads transport infrastructure projects in Kenya (dependent variable). It also shows how risk management practices (moderating variable) moderates the influence of stakeholder participation in project life cycle management on the Performance of urban road infrastructure project. In addition, the conceptual framework illustrates how stakeholder participation in each phase of the project lifecycle: initiation, planning, execution and project closure (independent variables) influences the completion of urban road transport infrastructure projects. Finally, the conceptual framework indicates how risk management practices influences Performance of urban road transport infrastructure. Under each of the variables, the related indicators under this study are shown in the conceptual framework.

2.12 Summary of Reviewed Literature

This chapter covered a literature review, theoretical and conceptual frameworks upon which the study was based. The theoretical framework focused on theories, concepts, and ideas upon which the research was underpinned. The theories on which the study as underpinned are stakeholder theory, Theory of change and agency theory. Also, some relevant empirical studies have been reviewed and presented in line with variables on the stakeholder participation in project life cycle management, risk management practices and the performance of urban road transport infrastructure projects. A conceptual framework showing the relationship between the key variables was provided to help explain the main attributes of the study. Finally, a table showing the knowledge gaps relating to the study area was developed from the reviewed articles, which supported the need for this research study

The Literature review is set out in within the structure of the study themes and the key variables, which include stakeholder participation in project lifecycle management, risk management practices and completion of urban roads transport infrastructure projects. A review of the literature point to an increasing significance of stakeholder participation in all phases of project life cycle management. The chapter began by exploring the concept of stakeholder participation in project lifecycle management, within which the main predictor variables of this study were drawn. The review of literature has demonstrated its importance in completion of the projects and at the same time project performance.

The review of literature on urban roads transport infrastructure projects has revealed that measurement of completion can also be explained by the use of the term ‘project success’ or ‘project performance’ (Albert & Ada, 2014; Love, Edwards & Irani, 2012). However, to achieve this success or be able to complete the construction infrastructural projects, Latham (1994) emphasizes on widespread adoption of collaborative working practices. For collaboration in road construction past actions should be quantified in respect to effectiveness and efficiency through performance measurement. In simplistic terms, performance measurement refers to “process of determining how successful organizations or individuals have been in attaining their objectives,” (Bititci, Cocca & Ates, 2015).

It is argued by Shamas, Toora and Ogunlana (2010) and Barclay & Osei-Bryson (2010), that the ‘iron triangle’ (time, cost, quality) is no more the only parameters that could be applied in measuring performance on large development projects, particularly for the public sector. Other Key Performance Indicators (KPI) include project safety, use of resources efficiently, project effectiveness, stakeholder satisfaction. Eriksson (2010) posits that for construction projects to perform, there is imperative need of effective stakeholder collaboration and also involvement in the entire project cycle management. The current study has outlined the following indicators for the dependent variable (completion of urban road infrastructure projects): Within time, within cost, quality specifications and stakeholder satisfaction.

The reviewed literature on stakeholder participation in project initiation has revealed both conceptual and methodological flaws and strengths. To begin with, PMBOK (2013) states that initiation processes are performed to either define a new project or phase. Dahan, Hauser and Kähkönen (2010) present a picture of what transpires during project initiation. That, the process involves idea generation, prioritization and project feasibility studies, project screening, and project selection. Tammer (2009) warned that mismanagement of this process can be costly and especially when stakeholders are not fully committed. A study by Abdalla and Otieno (2017) revealed that by allowing community participation in project implementation trust is built and resistance is reduced by among the stakeholders leading to successful completion of the projects. Menoka, David, Damian and Edward (2013) hold that stakeholders, client and main contractor in particular, are revered over others.

Nyandika and Ngugi (2014) studied “Influence of Stakeholders' Participation on Performance of Road Projects found that awareness, feasibility, conferences and seminars in user involvement greatly and positively influence road projects performance. This is also upheld by Barasa and Jelagat (2013) study participatory development can help achieve project sustainability and also increased utilization rate of the project. Same importance supported by Caldwel and Usadolo (2016) that in a participatory development project, stakeholder identification should be prioritized whereby they should be brought in as partners for exploration of expected development challenges. Raza (2016) claimed that projects are not implemented because the public are dismissed in most areas of the development projects. These authors are in agreement that project initiation should involve stakeholders. Thus, Menoka, (2014) sees stakeholder involvement as a vital process to anticipate the divergent expectations from various stakeholders right from the initial stages of project and also contribute to project success as found by Madeeha and Naqvi (2014). Finally, Wamugu and Ogollah (2017) study has revealed that stakeholder participation in project initiation positively and significantly influences project performance.

On reviewing the importance of stakeholder participation in project planning, it was noted that planning is key for it serves the purpose of planning for time, cost and resources available for the projects. This stage equally requires full participation of the stakeholders. The study by Heravi, Coffey and Trigunarsyah (2015) examined the level to which stakeholders are involved during the project's planning process in building construction projects and found that contractors have the lowest level of participation in the project. The methodological weak point of Heravi *et al.* study arises out the use of stakeholder perceptions rather than the use of interview guide to gain more understanding of stakeholder participation in planning, hence the gap addressed by the current study. The descriptive study by Awini (2018) who used purposive and convenience sampling techniques showed that (54%) of stakeholders are not always involved in the planning; 45.2% of stakeholders are neglected due to the misconception that they incapable of contributing to the project’s decision meaningfully; other reasons included organization requirements, time constraints or policies and the notion that planning does not directly concern beneficiaries. In conclusion, this study has taken cognizant that by leaving out stakeholders in the planning stage, it is likely to encounter challenges during project implementation. The study, did not use regression analysis to show the relationship and strength of the predictor variable on dependent variable, a gap already filled by the current study.

Still on planning, the study findings by Mwanga and Kayunze (2016) have also indicated that 81.8% stakeholders do participate in planning the interventions even though the study failed on the use of regression analysis to strengthen the findings. Stakeholder participation can also be achieved through resource planning, although it is captured as an indicator under the predictor variable stakeholder (stakeholder participation in project planning). This is confirmed by Ochieng and Sakwa (2018) on the impact of participative resource mobilization in the implementation of projects. Subsequently, the findings showed that a statistical significant existed between participative resource mobilization and project implementation. Onyango, Bwisa and Orwa (2017) in their study rejected the null hypothesis that was stated that participatory planning processes do not influence implementation of public infrastructure projects. Thus concluding that participatory planning process can yield to 24.5% of the variation in the implementation of the infrastructural projects. Similarly, Musyoka and Moronge (2017) a unit increase in project planning would lead to a 0.765 increase (76.5) in the implementation of government funded construction projects. These studies were not focused on Kenya but rather in regions or parts of Kenya hence there was the need to undertake the current study focusing specifically in the entire republic of Kenya and also on urban roads transport infrastructure.

Stakeholder participation in project closure, help in the handing over process of project deliverables and documentation to the project. This is supported by the findings of O'Halloran (2014) who observed that project managers in the construction industry consider engagement methods during project closure, thus, influencing implementation of the project. Altough O'Halloran findings were based on Kendall's Coefficient for analysis, the current study adopted Pearson Correlation. The findings from Musyoki and Gakuu (2018) study presented opposite result that stakeholders participation negatively influences implementation of infrastructural projects although in a significant manner. This however left a gap for further research in road construction projects.

By reviewing literature on the combined stakeholder participation in project life cycle management, it is evident that it influences project success or performance in various context with different dynamism. For example, Mkutano and Sang (2018) studied on role of project life cycle management practices and found that there was improved project performance due to effective use of project life cycle management practices such as communication, planning, execution, closure, stakeholder participation and monitoring and evaluation of project activities. Ndegwa, Mavole and Muhingi, (2017) found that it is important the public in the entire project management cycle: project identification, project planning, and project M&E so as to implement the project successfullly. Futher, Maunda and Moronge (2016) examined and found that project life cycle management correlates with completion of public projects in

Kenya. Mavuti, Kising'u and Oyo (2019) studied the effect of project management practices on implementation of funded projects and the findings revealed a strong positive correlation. To be able to run the multivariate analysis and find the strength of stakeholder project life cycle management, the current study, however, combined project initiation, project planning, project execution and project closure to regress against implementation of urban roads infrastructure in Kenya.

The influence of risk management practices as a predictor variable has been studied by various researchers but with different views. For instance, Ondara, Bulla and Kamau (2017) determined how risk management strategies influenced performance of construction firms and found that resource risk, personnel risk and project control risk management strategies had a significant influence on firm performance. A study by Aduma and Kimutai (2018) on project risk management strategies and project performance revealed that the adjusted R squared (0.690) explained 69% of total variations in project performance. The findings from Wibowo *et al*. (2018) study on risk management in Indonesia construction project, affirm that there is need for all stakeholder (contractor, owner, society, design consultant and supervisory consultant) in construction to carry out risk management practices. Kangari (2015) assessed the attitude of large U.S. construction firms toward risk and found that contractors are willing to take more risks. Similarly, a study by El-Sayegh (2014) risk management practices in the UAE construction industry outlined the top three barriers to risk management implementation as; managers' understanding of the techniques, ability to find a suitable risk management method and difficulty experienced in obtaining both estimates and assessment of probability. Maru (2015) opined that a periodical risk monitoring is necessary. Finally, Chelishe and Kikwasi (2014) studied the critical success factors for implementation of risk assessment and management practices in the Tanzanian construction industry and revealed that stakeholders in the construction industry are aware of risk management processes.

Construction project risks are likely to occur in the planning and execution phases of projects (Smith, Merna & Jobling, 2006). On reviewing the literature on the gaps of risk management practices as a moderator, the study by Zwikael *et al.* (2014) has demonstrated risk moderates the impact of planning on success. The moderating effect of project risk mitigation strategies on the relationship between planning and success of project has been established by Zailani *et al.* (2016). This study is considered important and related to the current theme since the study is focused on stakeholder participation in project planning (first objective of the current study). Similarly, Urbański, Haque and Oino (2019) found that risk management has a moderate influence on successful implementation of project planning, that eventually leads to the success of a project. Naeem, Khanzanda, Mubashir and Sohail (2018), found that risk management mediates the relationship between project planning and project success. This mediator, risk management was used as moderator to show its influence on the combined stakeholder participation in project lifecycle management and completion of urban roads infrastructure projects. Furthermore, besides planning as used by Naeem *et al.* (2018), the current study has added three more predictor variables to form a combined model, and the variables included are; initiation, planning, execution and project closure.

2.13 Knowledge Gaps

Inferring from the reviewed literature from the previous studies, some research gaps were realized in the various research methods, designs and the data collection and analysis instruments and tools applied by the researchers. There were also issues in terms of adequacy of information on scope and how the relevant variables and themes were handled. Table 2.1 gives a summary of those research gaps as identified in the previous literature

Table 2.1: Knowledge Gaps

Variable	Author and Year	Title of the Study	Research Methodology	Findings	Knowledge Gaps
Completion of urban road transport infrastructure projects.	Shamas, Rehman Toora, Stephen O. Ogunlana (2010)	Beyond the 'iron triangle': Stakeholder perception of key performance indicators (KPIs) for large-scale public sector development projects in Thailand.	The survey research involving qualitative and quantitative research techniques using interviews and 80 questionnaires	Findings indicate that the traditional measures of the iron triangle are no more applicable to measuring performance on large public sector development projects. Other performance indicators such as safety, efficient use of resources, effectiveness, the satisfaction of stakeholders, are increasingly becoming important.	The study was limited to internal stakeholders, without involving external stakeholders. The study did not also explore stakeholder-related risks issues and their impacts on project performance hence the aim of this study.
	Barclay and Osei-Bryson (2010)	Project performance development framework: An approach for developing performance criteria & measures for information systems (IS) projects.	Case study	The findings of this study were not clearly stated. As a result, it becomes difficult to measure the study's achievements against the original objective.	There was a need to carry out a comprehensive study backed by adequate findings, covering stakeholder participation in transport infrastructure projects.
	Wi and Jung, (2010)	Modeling and analysis of project performance factors in an extended project-oriented	Desk review of existing articles and project reports	The study established that stakeholder collaboration helps in predicting project performance	The authors conducted a desk study to arrive at their findings, which was mainly qualitative research approach. This method

Variable	Author and Year	Title of the Study	Research Methodology	Findings	Knowledge Gaps
		virtual organization Republic of Korea			appeared to be insufficient to establish adequate results and empirical findings. The current study employeed both quantitiative and qualitative approaches of data collection and analyses to yield more credible results for inference.
	Ndunda, Paul and Mbura (2017).	influence of stakeholder activities on implementation of rural road projects in Machakos county	The study used a semi structured questionnaire to collect data.	Qualified contractors ensured delivery of quality road projects through continuous inspection. Project beneficiary participation positively and significantly influenced the implementation of road projects	Survey by interview guide was not utilized, hence inadequate information was obtained. The category of stakeholders involved was not clear. The current study incorporated PAPS and other key staholders involved in implementation or construction of urban roads.
Combined Stakeholder participation in Project Lifecycle Management	Kobusingye, Mungatu & Mulyungi (2017)	Influence of stakeholders' involvement on project outcomes: a case of water, sanitation, and hygiene (wash) project in Rwanda	This study employed descriptive survey design. primary data was collected from community members using a semi structured questionnaire. Other primary data was	This study found that stakeholders' involvement in project initiation, planning, implementation, and review contributed to project outcome. This study found that stakeholders involvement in project implementation contributed most to project outcome (r =	This study primarily studied the influence of the community participation in water, and sanitation projects. The topic should have reflected community participation instead of stakeholder participation. Additionally the study did not capture risk management practices in the projects hence the current study.

Variable	Author and Year	Title of the Study	Research Methodology	Findings	Knowledge Gaps
			obtained through interview and observations.	0.971) followed by project review (r= 0.681), then project planning (r =0.651) while projects identification (r = 0.571) had the least influence on project outcome.	
	Ndegwa, Mavole and Muhingi (2017)	Effects of public participation in the implementation of successful health projects in Nyeri South sub–County in Kenya	descriptive study design	The conclusion was that, public participation influences project identification, project planning and project M&E for successful implementation of public funded health projects hence the need to involve them in all the four stages of any public project to ensure that they attain their own objectives and equally projects are also accepted by the targeted community	Employed analysis of variance (ANOVA) to establish the strength of the variables under the study. The study focused in medical field however the current study tested the same independent variables with a focus on the road construction.

Variable	Author and Year	Title of the Study	Research Methodology	Findings	Knowledge Gaps
	Maunda and Moronge (2016)	Influence of project life cycle management on completion of public projects in Kenya	Descriptive research design and correlational design	The findings indicated that there existed a strong and a positive relationship between project lifecycle management and completion of public projects	The study did not examine all the project lifecycle management practices hence the current study. The dependent variable was in general form, 'completion of public projects in Kenya'; however the current study studied specifically road construction with the urban setups in 9 Counties of Kenya.
	Mavuti, Kising'u and Oyo (2019)	Effect of project management practices on implementation of funded projects at Kenya ports Authority	Descriptive research design approach	Overall, project management practices explained 48.8% of total variation in the implementation of the project	Tested under the combined project management practices, included; M&E practices, stakeholder's participation, risk management and project planning. The IV's were mixed up considering that stakeholder's participation is in itself a project management practice. Moreover the study was focused on KPA and road urban projects hence the current study.

Variable	Author and Year	Title of the Study	Research Methodology	Findings	Knowledge Gaps
	Mkutano (2018)	Role of project life cycle management practices on the performance of non-governmental organizations projects within Nairobi City County, Kenya	This study used descriptive research design	The study findings indicated that there was improved project performance due to effective use of project life cycle management practices such as communication, planning, execution, closure, stakeholder participation and monitoring and evaluation of project activities	The study focused on performance of non-governmental organizations projects within Nairobi City County, Kenya. The current study was on roads and also the scope of the study extended to Kenya and not Nairobi County. Hence the findings from the current study were relevant to the generalizability of the issues of project life cycle in road construction projects.
	Kadurenge, Nyonje and Kyalo (2016)	Influence of Stakeholder-Participation Models In The Implementation Of Selected Rural Market Stalls Projects In Vihiga County, Kenya	Document review, observation, key informant in-depth interviews, and focus group discussions were used to collect data; while content analysis, within-case analysis and cross-case analysis were used to analyze data.	The study found out that top-down, contractual and consultative stakeholder-participation models were applied in the implementation of Jeptul, Chavakali, Majengo and Wemilabi market stalls projects and the models were largely responsible for the failure of the four projects.	The study focused on how the stakeholder participation models influence specific project processes of initiation, planning, implementation and termination which are critical in determining what kind of outcome a project will have. However, the current study examined the influence of each variable on roads completion in Kenya.

Variable	Author and Year	Title of the Study	Research Methodology	Findings	Knowledge Gaps
	Ali and Gitonga (2019)	Influence of stakeholders role on the performance of national government constituency development fund projects in Wajir West constituency, Kenya	Descriptive research, Multivariate Regression	Adjusted R^2 showed that taking project initiation, project planning, project implementation and project monitoring performance of development projects would increase.	The study focused on the CDF development projects and not urban roads transport infrastructure, hence the current study. The current study thus performed a multivariate analysis to establish the combined influence of all these variables on dependent variable with aim of emphasizing the importance of engaging stakeholders in all stages of the project lifecycle.
Stakeholder Participation in project Initiation	Wamugu & Ogollah (2018)	Role of stakeholders participation on the performance of constituency development fund projects in Mathira East constituency in Kenya	Descriptive research design, ANOVA, Secondary by use reports, correlational analysis and regression.	Stakeholder participation in project initiation has both a positive and significant on the performance.	The study focused on CDF projects, the current study focus on urban roads transport infrastructure projects in nine Counties of Kenya. The role stakeholder was regressed at initiation only and performance of CDF projects. However, the current study regressed all key stages of project life cycle vis a vis completion of road projects hence informing unique inferences of the findings.

Variable	Author and Year	Title of the Study	Research Methodology	Findings	Knowledge Gaps
	Madeeha & Naqvi(2014)	Impact of Internal Stakeholder’s Engagement on Project portfolio Management Success, IT Industry in Lahore	Pragmatic paradigm, census, Pearson correlation, Step-wise hierarchical regression.	The moderator role clarity revealed that involvement of internal stakeholder significantly influence success of project	Study did not measure stakeholder engagement and project completion, also the study focused on IT projects and not roads. Thus the current study sought specifically to test the influence and degree of the variable vis a vis road completion in the urabn setups.
	Abdalla and Otieno (2017)	Determinants of Implementation of County Government Projects: A Case of Infrastructural Projects In kilifi County, Kenya	Descriptive research design, purposive sampling, Spearman Rank Correlation	When community members participate in project implementation it builds trust and less resistance towards the project.	There is need to show whether relationship exists between stakeholder participation and implementation of infrastructure projects through Pearson correlation and regression analyses.
	Menoka (2014)	Stakeholder Engagement and Sustainability-related Project Performance in Construction.	Exploratory design, in-depth structured interviews,	Stakeholder participation in initiation stage can result to divergent expectations of stakeholders hence prepare enough to incorporate various views for the success of the project.	The study did not show how stakeholder participation could influence success of the project in terms of implementation, especially road infrastructure hence the current study.

Variable	Author and Year	Title of the Study	Research Methodology	Findings	Knowledge Gaps
	Nyandika and Ngugi (2014)	Influence of Stakeholders' Participation on Perormance of Road Projects at Kenya National Highways	Descriptive and correlational research designs. Structured questionnaires	Awareness, feasibility, conferences and seminars in user involvement have a great positive influence in road projects performance.	The dimension of stakeholder holder were not shown how they affected the road performance; Similarly, the study did not focus on road completion hence qualifying the need for the current study.
Stakeholder Participation in Project Planning	Heravi, Coffey and Trigunarsyah (2015)	Examine the current level of stakeholder involvement during the project's planning process in Australia	A survey involving 200 questionnaires	Results of the survey revealed that contractors have the lowest level of participation within the project initiation and planning phases, hence engage them as early as possible.	The study only used the perception of four stakeholder groups in building construction projects. An interview guide would have given more in-depth information hence the current study adopted a pragmatic philosophical underpinning to bridge this gap.
	Awini (2018)	Challenges of the implementation of water and sanitation projects in Gushegu District in Ghana	Descriptive design	The study found that the stakeholders are neglected because of the misconception that beneficiaries are not capable of contributing meaningfully to the decision making of project	Failed to show the relationship and strength of the predictor variable, participatory project planning hence the need to perform a correlation and regression analysis to have verifiable findings for inference.

Variable	Author and Year	Title of the Study	Research Methodology	Findings	Knowledge Gaps
	Mwanga & Kayunze (2016)	Determinants of community participation in planning HIV and AIDS interventions under the national strategic framework in Mtwara region of Tanzania	Cross-sectional research survey design	The study findings indicated that the community did not participate in planning the interventions	The study failed to show the relationship between community participation and HIV interventions. This study was also confined to medical field and hence need to engage in a study that focuses on roads.
	Ochieng & Sakwa (2018)	Impact of participative resource mobilization in the implementation of community water projects on in Kisumu County of Kenya	Descriptive and correlational research designs were adopted	The study showed that a statistical significant influence existed between participative resource mobilization and project implementation of the projects efficiently	The study did not focus on planning solely
	Onyango, Bwisa & Orwa (2017)	Factors influencing the implementation of public infrastructure projects in Kenya	Descriptive research design	The result indicated that participatory planning process would yield 24.5% of the variation in the implementation of the infrastructure projects	The study did not focus on the completion of project aspect although it gave an insight into what project life cycle would lead to. The study findings indicated need to study various components project life cycle and the role it has on project implementation or otherwise completion.

Variable	Author and Year	Title of the Study	Research Methodology	Findings	Knowledge Gaps
	Musyoka & Moronge (2017)	Determinants of implementation of county government construction projects in Nairobi, Kenya.	Descriptive survey, census technique, correlational and regressional analysis	Project planning influences implementation of county government funded projects	The study generalized construction projects thus the current study focused particularly on urban road construction projects.
Stakeholder Participation in project Execution.	Olander & Landin, (2015)	Evaluation of stakeholder influence in the implementation of construction projects	A case study consisting of two projects was undertaken	The case study shows that an evaluation of stakeholder demands and influence should be considered as a necessary and important step in the planning, execution, and closure of any construction project.	The study used only a case study which is usually known with the limited geographical scope and hence difficult to generalize the results. This study was also conducted in a developed country, which has different socioeconomic and economic circumstance as the LDCs.
	Sulemnana, Musah & Simon (2010)	An Assessment of Stakeholder Participation in Monitoring and Evaluation of District Assembly Projects and Programmes in the Savelugu-Nanton Municipality Assembly, Ghana	Descriptive research design. Purposive sampling, semi-structured interviews and questionnaires.	Stakeholder participation of Municipal Planning and Co-coordinating Unit (MPCU) members and the District Assembly members in M&E of projects and programmes was high but low among the Zonal Council and also at the community levels which had negative impact on three things regarding development projects and programmes:	Correlational analysis was not performed hence; it is not easy to tell the extent to which stakeholder engagement in project execution influences project completion. Therefore, the current study's findings were based on both correlation and regression to establish the significance and its influence.

Variable	Author and Year	Title of the Study	Research Methodology	Findings	Knowledge Gaps
				first, transparency; second, accountability; and third, the sustenance	
	Ndunda. Paul & Mbura (2017)	Influence of stakeholder activities on implementation of rural road projects in Machakos County	Descriptive research design, correlation research design	Participation by project beneficiary significantly influences project implementation	The study was on one County yet the current study is based on the entire Kenya. Besides, stakeholder activities were clearly outlined in this study and led to unique findings that revealed indeed stakeholder participation in project execution, for example, greatly influences completion of urban road projects.
	Mugabo & Mulyungi (2019)	Effect of Stakeholder Engagement on Project Success in Rwanda: A Case of Gisenyi Youth New Vision Project	Descriptive research design, correlation and regression, questionnaires, simple random sampling	A strong positive relationship between stakeholder engagement in project execution and its success (rate of 0.903).	The study focused on youth projects and not urban road infrastructure projects. A gap was rather bridged in this current study whereby the road projects were studied with a view of engaging multisectoral stakeholders to increase generalizability of the findings.
	Musyoki & Gakuu (2018)	"Institutional factors influencing implementation of infrastructure projects by county	Descriptive research design, correlation and regression	stakeholders have a negative and significant influence on project implementation	The study was based in one of the 47 Counties of Kenya, yet the current study is focused on the entire country. Since the findings were negative and

Variable	Author and Year	Title of the Study	Research Methodology	Findings	Knowledge Gaps
		governments in Kenya: A case of Embu County.			generalized on project implementation, there was a gap to study the same variable with a focus on urban road construction projects to establish its influence.
Stakeholder Participation in Project Closure	O'Holloran (2014	Awareness of stakeholder management among the project managers in construction industry of Ireland	A positivistic philosophical underpinning with a more deductive approach	The findings showed that project managers in the construction industry considered stakeholder analysis and engagement methods to be effective during project closure, which in turn influenced implementation of the project; and also way to gauge success of the project	Whereas the study by O'Halloran relied on Kendall's Coefficient, the current study adopted Pearson Product Moment of Coefficient for analysis. The findings of the current findings rather established a different scenario that stakeholders are involved but happen to miss out on some aspects of project lifecycle stages.
	Bizon-Górecka and Górecki (2017)	Influence of Selected Stakeholders of Construction Investment Projects on the Course of Project	Descriptive survey design, use of percentages	All the concerned stakeholders directly involved in the construction projects should be involved during closure. However the designer is necessary to be present.	The study falls short of outlining clearly the methodological steps taken to arrive at the findings. The current study, however, adopted a pragmatic philosophy whereby the study findings were obtained through mixed by, for example, the use of correlation and regression.

Variable	Author and Year	Title of the Study	Research Methodology	Findings	Knowledge Gaps
Risk Management Practices	Njue, Mulwa, Kyalo and Mbugua (2019).	Risk Management Practices And Performance Of Jua-Kali Empowerment Programmes (JKEP) In Nairobi, Kenya	cross-sectional correlational-survey design	risk management practices have significant contribution to the performance of JKEP.	The study did not focus on the completion of road projects hence the current study. The risk management practices as a whole component, was considered important in assessing its moderating influence between IV and DV.
	Fan, Li,Yao, Zhan (2014)	Generating project risk response strategies in China	Pragmatic methods using the case-based decision analysis methods	The found that the case-based decision analysis methods are significant in generating project risk response strategies from different perspectives.	This article focused on risks management practices, which involves only one aspect of risk management practices hence the current study aimed to study the variaous vital steps in risk management practices to show its moderating influence on IV and DV
	Aduma and Kimutai (2018)	Project risk management strategies and project performance at the National Hospital Insurance Fund (NHIF) in Kenya	Descriptive research design	Risk preventions had the greatest effect on the project performance, then followed by risk control and risk acceptance, however risk transfer had the least effect	The study had different indicators for risk management practices which were strategies. The current study adopted practices to show its unique influence between the IV and DV. The current study was more on road projects and not medical although stakeholders are allowed to participate in both or any other projects for completion within parameters such set time,

Variable	Author and Year	Title of the Study	Research Methodology	Findings	Knowledge Gaps
					budget, expected quality and beneficicary satisfaction.
	Wibowo, Hatmoko and Nurdiana (2018)	Risk management in Indonesia construction project, a case study of a Toll Road Project at Semarang-Solo Section I	Descriptive research design	The findings indicated that each stakeholder had differing perceptions of risks because of their unique interests in the project	The study had different indicators for risk management practices hence the results could not be generalized on road projects within urban set up hence the current study.
	Chelishe and Kikwasi (2014)	Critical success factors for implementation of risk assessment and management practices in the Tanzanian construction industry	Descriptive research design	Findings obtained indicated that the three highly ranked CSF were “awareness of risk management processes”; “team work and communications”; and “management style” then the least important as per the rankings were “co-operative culture”; “customer requirement”; and “positive human dynamics	Under this study, there was awareness of risk management processes. However, the study failed to test its influence on the implementation of road construction infrastructure projects. The study was also conducted in Tanzania and hence there was need to carry out a study in Kenya a focus risk management practices and not “processes” as a moderator to establish its influence on IV and DV
	Ondara, Bulla and Kamau (2017)	Risk management strategies on performance of construction firms in selected counties in Kenya	explanatory research design and the research philosophy was based on positivism	The findings led to the conclusion that resource risk, personnel risk and project control risk management strategies had a significant	The study did not focus on the indicators of risk management practices hence the current study. Moreover, the current study adopted correlation and regression to test the direction

Variable	Author and Year	Title of the Study	Research Methodology	Findings	Knowledge Gaps
				influence on firm performance, implying that any effect on firm performance was not solely due to chance. Litigation risk management and insurance risk management strategies did not have a statistically significant effect, implying that any effect on firm performance was solely due to chance.	and strength of the variables.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the design and the methods that was applied in this research for determining how best stakeholders can be involved in the implementation of urban road transport infrastructure projects in order to improve completion of the project. The chapter covers research methodology used including research paradigm, research design and approach, target population, sample size and sampling procedures, research instruments, data collection techniques, data collection procedure, data analysis techniques, ethical consideration, and operationalization of variables of study variables and indicators, hypothesis and test criteria, reason for the choice paradigm and research approaches.

3.2 Research Paradigm

A research paradigm is the set of common beliefs and agreements shared between scientists about how problems should be understood and addressed (Gorald, 2013). Before attempting to undertake any research, it is necessary to review the different philosophical approaches. Understanding and selecting the appropriate approach can significantly help to choose accurate strategies and methodologies (Saunders, Lewis & Thornhill, 2009). According to Sarantakos (2010), the philosophical framework is the driving power behind achieving the aims of a research project. It is, therefore, necessary to consider certain assumptions about the preparation of a research approach, before choosing a specific method. Yin (2009) labeled these assumptions as forming a paradigm. Baker and Edwards (2013) observes that the conscious use of paradigms can offer a framework for researchers to help guide their decisions during the process of the survey.

This study used a pragmatism as the paradigm (Wambugu, Kyalo, Mbii & Nyonje, 2015), to guide a mixed research approach. This allowed the research to balance the weaknesses and strengths of two approaches. The research wishes to attain the study goal and specific objectives in stakeholder participation in project life cycle management and Completion of urban road transport infrastructure projects, which contain both social and scientific attributes. Mixed research allows the researcher to describe research phenomena in both social and natural settings through research processes.

The two paradigms of positivism and interpretivism can be applied depending on the objectives of each research study (Sarantakos, 2010). The positivist paradigm assumes that the existing reality is driven by natural laws and that the social world is independent of humans, is objective and rests on order. In the view of positivists, human beings are individuals directed by laws. Too (2009) explains that in this approach, science is based on adherence to strict rules and procedures. Science is deductive and based on universal laws that explain concrete social event and relationships. So the positivist approach sees research as being logical in nature with questions (expressed as hypotheses) requiring empirical testing. On the other hand, the interpretivism paradigm assumes that reality is in the minds of humans, and is undertaken through examining the common relationships and interpretations. So in this approach, people are the center of any reality (Too, 2009). Interpretive researchers attempt to investigate the meanings and implications of their interpretations by examining and involving people's ideas. This paradigm assumes that science requires a comparative approach and discusses that the fundamentals to explain social science are made applicable through understanding people, their approaches, and their perspectives.

3.2.1 Research Design

A research design is the set of methods and procedures used in collecting and analyzing measures of the variables specified in the research problem. The careful selection of appropriate methods and strategies are important parts of any research (Naoum, 2014). Strategies of inquiry are types of qualitative, quantitative, and mixed approaches or models that provide specific direction for procedures in a research design (Creswell, 2012). According to Abowitz and Toole (2010), it is critical to realize the most appropriate research methodology to develop an effective data collection process specifically in the construction industry. In addition, the objectives of the research can be achieved by using the most suitable methods and the selection of the methodology employed is dependent on the nature, features, and context of the research (Jaapar, Endut, Bahri & Takim, 2009). The methods employed in conducting this research was selected to support the research questions. Both descriptive survey and correlational research designs was adopted in this study because it is informed by pragmatism paradigm. This allowed the researcher to carry out a study on the social and scientific phenomena that exists in stakeholder participation in project life cycle management, risk management practices and completion of urban road transport infrastructure projects. The design was appropriate for gathering information from questionnaires and interviews, and also allowed the measure of correlation between the key variables of the study or testing of hypothesis.

This research adopted a mixed research approach. This is because the study variables were measured using both qualitative and quantitative data, as recommended by Sekaran and Bougie (2009). Compared with applying a single method approach, there is a benefit to the results when a mixed method approach is adopted. The combined techniques can also potentially escalate the validity of results and generate knowledge through the study of alternative designs (Hurmerinta-Peltomaki & Nummela, 2016).

3.3 Target Population

According to Pole and Lampard (2010), a target population is classified as all the members of a given group to which the investigation is related, whereas the accessible population is looked at in terms of those elements in the target population within the reach of the study. Target population of this study was 1593 (see Appendix VII for population distribution within the 9 counties), made up of 375 KURA project implementation team members, 23 KURA project planners and department directors, 781 Road contractors, 85 Consultants, 213 representatives of Project Affected Persons PAPs (Matatu SACCOs, land owners and Kenya Alliance Resident Association), 116 complimentary service providers such as, KPLC, Water and Sewerage companies, National land commission and network providers (Safaricom, Airtel, Telcom and Faiba). However, the sampling frame is based on KURA road database, 2019. Table 3.1 shows how the target population was distributed.

Table 3.1: Target Population

Categories of the target population	Target Population	Percentage
KURA Project Implementation teams members	375	23.5
KURA project planners and Directors	23	1.4
Road contractor's project management teams	781	49.0
Consultants construction supervision teams	85	5.3
Representatives of PAPs	213	13.4
Complimentary service providers	116	7.3
Total	**1593**	**100**

Source: KURA (2019)

3.4 Sample Size and Sampling Procedures

According to Yin (2009) sample is a number of items selected from the universal population to represent the entire population for purposes of generalization, while sampling procedure refers to the technique used to select the sample. According to Kothari and Garg (2014) a sample size should be too large or too small and should be of optimum size in order to fulfill the requirement of efficiency, flexibility, representativeness, and reliability. In order to establish the sample size, the researcher must determine the desired precision and acceptable level of confidence for the estimate.

3.4.1 Sample Size

This study determined the sample size 309 from the target population of 1593 as reflected Table 3.1. Yamane (1967), sample size determination research formula, was used to determine the sample size of the study as follows.

$$n = \frac{N}{1+N(e^2)} = 1593 / 1+1593\ (0.05^2) = 309$$

Where:

n = the desired sample size

e = margin of error; the probability of error (i.e., the desired precision, in this case, 0.05 for 95% confidence level)

N = the total population size

A sample size of 309 was achieved and was considered adequate for this study since the formula used is considered reliable and produces comparable results with Cochran's formula for infinite population (Cochran, 1977).

The sample was distributed proportionately across the various categories as captured in Table 3.2 using Yamane method. Sampling became an alternative due to the limiting factor of resources such as time and costs. Thus, the researcher is anticipating constraints concerning cost and time, as well as the size of the target population under study.

3.4.2 Sampling Procedure

This study mainly used purposive sampling procedure to arrive at the target population. According to Kothari and Garg (2014) purposive sampling is a non-probability sampling also known as deliberate or judgment sampling. In this case participants are selected according to the needs of the study. There are many types of purposive sampling, however, in this study expert sampling was used because information was to be collected from experts in the road construction industry. The sampling was done based on information provided by KURA. First of all, a list of 35 roads construction projects, located in 9 counties (Appendix VIII) and their corresponding contractors, and consultants, as well as complimentary service providers and project representatives of PAPS were purposively selected for the study. Details of this information are found in section 3.3 and Table 3.1. This process established a sample size of 309, calculated through the formula by Yamane, Table 3.2. The calculated sample size is proportionately distributed across the various categories through Yamane's formula of sample size distribution.

Table 3.2: Sample Size Determination

Category of target population	Target population	Ratio	Sample size
KURA project implementation team	375	0.19	73
KURA planners	23	0.19	4
Road contractors, project management teams	781	0.19	152
Consultants, supervision teams	85	0.19	17
Representatives of PAPS	213	0.19	41
Complimentary service providers	116	0.19	23
Total	**1593**		**310**

Source: KURA (2019)

3.5 Research Instruments

Based on the proposed study designs and approaches, this study obtained data from the questionnaire survey and interview guide. Prior to describing each method, it is necessary to provide the rationale for the selection of the methods (Evan, 2011). For this reason, the following sections provide explanations and justifications for the proposed instruments for data collection.

3.5.1 Questionnaire

A questionnaire was used to collect data from KURA project implementation teams, contractors, and consultants. The questionnaire was structured into various sections including respondent's data and key variables of the study. The Likert scale of measurement ranging from 1to 5 was used as shown in Appendix IV of this study.

The questionnaire survey is considered one of the most significant research methods in many different inquiry fields (Kalantari, Kalantari & Malekic, 2011) including construction and project management (Masrom, 2012; Willar, 2012). Data was collected using interviewer-administered questionnaires method and self-administered questionnaires. This form of questionnaire has been used in many studies (Obare, Kyalo, Mulwa & Mbugua, 2016; Seboru, Mulwa, Kyalo & Rambo, 2017; Gatotoh, Gakuu & Keiyoro, 2017). The open ended questions were used so as to encourage the respondent to give an in-depth and felt response without feeling held back in illuminating of any information and the closed ended questions allow respondent to respond from limited options that had been stated. According to Saunders et al. (2009), the open ended or unstructured questions allow profound response from the respondents while the closed or structured questions are generally easier to evaluate. The questionnaire was divided into seven sections. A 5-point Likert scale was selected because it is used to measure opinions, attitudes, values and behavior (Kothari and Garg, 2014).

As stated by Fellows and Liu (2011), the main objective of a survey is to achieve statistical validity. Most often, it is proposed that the survey is conducted by means of a questionnaire with the aim of collecting valid, consistent, impartial and discriminatory data from a representative sample of respondents. Questionnaire surveys are regarded as the most appropriate method for accessing a large heterogeneous number of respondents at a reasonably low cost. According to Wood, Daly, Miller and Roper (2011), increasing the number of issues used in a questionnaire survey can help in presenting a better sample basis. According to Fellows and Liu (2011), other advantages to be derived from the use of a questionnaire include generally inexpensive to conduct, generally easy to interpret both quantitatively and qualitatively, can be distributed broadly, accommodate a huge research population and easy for respondents to answer.

3.5.2 Interview Guide for Various Category of Stakeholders

In-depth interviews were conducted in this study to examine the precise role of stakeholders in the project life cycle as well as proposing approaches for the more actual involvement of stakeholders in order to improve project completion. Interviews were conducted on KURA project planners and directors of departments, project engineers of Kenya Power and Lighting company, Project officers of National Land Commission and Representatives of PAPs (land owners, squatters and Matatu SACCOs) as shown in appendix V.

There are particular reasons to select interviews as a data collection technique. An interview is an interactional event where questions are a central part of the data (Patton, 2012). To obtain such information, an interview seems to be very beneficial since it allows the researcher to interact with the interview population and provides an insight about their behaviour, views, approaches, and feelings. Yin (2009) also stresses that interviews are crucial sources of information.

Interviews are classified into three main categories; structured, semi-structured and unstructured (Fellows & Liu, 2011). The selection of the interview approach for this research is mostly influenced by the nature of research questions and the objectives to be achieved, then solely due to the use of the case study. According to Burns (2009), a semi-structured interview enhanced the relationship between the interviewee and the researcher and let the interviewees freely express their perspectives. It also uses natural language to present to the interviewees rather than forcing them to understand and fit into the concepts of the study.

3.5.3 Pilot Testing of Instruments

Pilot testing on the appropriateness of the research instruments were conducted one month prior to the main study. 30 respondents who represent 10% of 309 respondents were pilot tested in order to review and refine the questionnaire. According to Mugenda and Mugenda (2009), a sample representative of one to 10 percent is considered adequate for a pilot study. Questionnaires were delivered to a group of engineers in KENHA and consulting engineering companies who have similar characteristics with KURA project implementation teams and project planners. This process aimed at defining instruments' mechanics and point out problems associated with test instructions, determine instances where questions are unclear; format the instruments and remove any typographical errors and inconsistencies. Participants in the pilot study was exempted from the main study. After all issues with the test items are addressed, the instruments would be ready for large-scale data collection.

The primary purpose of pilot-testing research instruments is to help elicit appropriate responses, determine clarity, relevance, and appropriateness of questions asked. According to Kothari (2014), a pilot study is able to reveal weaknesses in the research instruments and techniques. It is been noted that a valid instrument enables accurate data to be collected, while reliable one meant that the data collected is consistent. This has been echoed by Cooper and Schindler (2014) who posed that the characteristics of a good measurement tool include validity, which refers to the extent to which a test measures what the researcher actually wishes to measure; and reliability, which refers to the measurement tool accuracy and precision.

3.5.4 Validity of Research Instruments

In this study, the validity of the research instrument was tested through content related method by discussion with three of the researcher's supervisors and two practioners in the field of construction management to assess the content validity and to ensure that all variables in the study were adequately captured in the qustionnaire and interview guide. Testing the validity of research instruments ensures that the instrument measures what it is supposed to measure. Mugenda and Mugenda (2013) state that content validity is a measure of the degree to which data collected using a particular instrument represents a specific domain of indicators or content of a particular concept. The usual procedure in assessing the content validity of a measure is to use professionals or experts in the particular field.

Validity can be defined as the extent to which a research instrument measures what it was intended to measure and how truthful the results of the study are (Gorald, 2013). It ensures that the questions asked are understood by the respondent in the way the researcher intended them to be while at the same time the answer given by the respondent is understood by the researcher in the way it is intended (Saunders et al., 2009). Validity can either be external validity which means that the results obtained can be generalized to the population or external validity which indicates the ability of the instrument to measure what it aims to measure. Osoro (2012) asserts that there are different types of validity including content validity which indicates how the measuring instrument adequately covers the topic of study, criterion-related validity which describes the extent to which the measures provide predictions in the study and construct validity which means the extent to which the questions measure the presence of those constructs that were intended to be measured.

Wambugu, Kyalo, Mbii and Nyonje (2015) observed that content validity refers to the degree in which an instrument measures the subject matter and behaviours the researcher wishes to measure. To ensure construct validity, the researcher formulated research instruments in a simple and clear manner to guide the respondents to respond appropriately. Validity for qualitative instruments were determined by construct-related methods while the validity for the quantitative instrument was determined using content-related validity. Content and construct-related validity are considered ideal for this study since they are useful in the construction of research instruments. Criterion-related validity relates to the ability of the instrument to predict some outcome or estimate the existence of some current condition (Kothari, 2010). The study attained this through proper editing of the research instruments to reflect the good content. To be able to verify the useability of the research instruments, reliability test was performed and results presented in Table 3.3.

Validity of qualitative data was achieved through careful record keeping and making sure that data collected was consistent and transparent (Noble & Smith, 2015). Moreover, verbatism description given by participants supported the findings.

3.5.5 Reliability of Research Instruments

Reliability is the degree to which an assessment tool produces reliable and consistent results. In this study, internal consistency was used. Cronbach's alpha coefficient was determined. This technique requires only a single administration and provides a unique, quantitative estimate of the internal consistency of a scale. Cronbach alpha essentially calculates the average of all possible split-half reliability coefficients (Bryman, 2012). A computed alpha coefficient varied from between 1 (denoting no internal reliability). The figure of 0.70 is typically used to indicate the acceptable level of internal reliability). A scale is said to be reliable if Cronbach alpha coefficient of the scale is well above the threshold of 0.7.

The tested instruments were modified and adapted to fit into the study with the advice sought from experts who included supervisors, academicians, and practitioners. Reliability for the interview guide was ensured by taking notes. Validation by respondents were also achieved by inviting some interviewees to check and make comments on the transcribed manuscripts. Assessment of the authenticity of data to check whether the final themes and concepts created adequately reflect the phenomena being investigated be done with assistance and support from the supervisors and peer discussions. During the period of data collection, the researcher tried as much as possible to account for personal biases while ensuring the depth and breadth of the data collection.

Reliability of the research instrument is used to ensure that the instrument is able to measure consistency, precision, and trustworthiness of a test after repeated experiments (Chakrabartty, 2013). It is also used to measure the internal consistency of scores obtained by the instrument. To establish the reliability and consistency of the research instruments in the study, pilot testing was done on respondents from a road construction project in Nairobi County, the selected project did not form part of the research sample. The findings for the reliability were presented in Table 3.3. A detailed output of the reliability test is found in the appendix XI.

To ensure reliability of qualitative data, Morse *et al.* (2002) posit that when additional participants are interviewed scope is increased and also adequacy and appropriateness of the data is achieved. Therefore the researcher sought to comprehensively know more about the phenomenon through clear description. Thus, interviews were conducted on all the subjects (refered to here as stakeholders) in the study.

Table 3.3: Reliability Analysis

Variable	**Cronbach's Alpha**	**Number of items**	**Decision**
Stakeholder Participation in project initiation	0.759	20	Reliable
Stakeholder Participation in project planning	0.831	20	Reliable
Stakeholder Participation in project execution	0.773	20	Reliable
Stakeholder Participation in project closure	0.971	20	Reliable
Risk management Practices	0.880	20	Reliable
Completion of urban road transport infrastructure projects	0.899	20	Reliable
Composite Cronbach's Alpha	**0.852**		

From the results in Table 3.3 above, participatory project initiation had an alpha value of 0.759, participatory project planning had an alpha value of 0.831, participation in project execution had an alpha value of 0.773, participation in project closure had an alpha value of 0.971, risk management practices had an alpha value of 0.880 and the completion of urban road transport infrastructure projects had an alpha value of 0.899. The composite Cronbach's alpha was 0.852. Since the Cronbach's alpha coefficient obtained was more than 0.7 which is desirable and 0.6 being the minimum acceptable (Sekaran, 2003; Hair et al., 2006), it was therefore concluded that the internal consistency reliability measures used were high and to have adequately measured the study's variables and were therefore considered for further analysis. The above reliabilities were obtained based on data obtained from a pilot study. The instrument was then modified by incorporating the results from the pilot study. This way, it assisted in improving the validity and final reliability of the instrument.

3.6 Data Collection Procedure

Data collection commenced after all relevant approvals have been obtained. This was between October 2018 and March 2019. The University of Nairobi, School of Open and Distance Learning (SODL), issued the researcher with an introductory letter, which was used to obtain the permit for research from the National Commission for Science, Technology, and Innovation (NACOSTI). The letter was also used to introduce the researcher to the relevant institutions and respondents for data collection. Approvals were sought from Kenya Urban Road Authorities (KURA) to collect data from the relevant stakeholders involved in their road construction projects. KURA provided contact details of all the stakeholders. The significance of the study was explained to KURA management and permission was sought to commence collection of data from the staff who are involved in the urban road transport infrastructure projects.

Data collection was conducted with the help of two research assistants with a view to ensuring a high rate of return of questionnaires since the assistants would promptly clarify any questions from the respondents. The research assistants were trained in research ethics, research instrument and its administration, skills for interview and recording. They were given an introductory letter for collecting data on behalf of the researcher. The respondents were sent a data transmittal letter and request for their consent to participate in the study before commencing data collection work. Both drop and pick and self-adminstering techniques were adopted for this study. The average amount of time spent on answering the questionnaire was 30 minutes. The items or statements in the reseach tool were more direct and understood by all respondents hence it was possible to get a good response rate.

3.7 Data Analysis Techniques

After collecting all the data, the process of analysis begins. To summarize and rearrange the data several interrelated procedures are performed during the data analysis stage (Zikmund, Babin, Carr & Griffin, 2012). This process is important as it makes data sensible. Data analysis tool that was dependent on the type of data to be analyzed depending on whether the data is qualitative or quantitative. According to Saunders *et al.* (2009), quantitative data is based on meanings derived from numbers, the collection results in numerical and standardized data and analysis conducted through the use of diagrams. However, qualitative data is based on meanings expressed through words, collection of results in non- standardized data requiring classification into categories and analyzing conducted through the use of conceptualization

3.7.1 Descriptive Analysis

Descriptive statistics are brief descriptive coefficients that summarize a given data set, which can be either a representation of the entire or a sample of a population. The quantitative data in this research was analyzed by descriptive statistics using IBM Statistical Package for the Social Sciences (SPSS) version 23. This version was used since it is the most recent version of SPSS and hence it has got advanced features. Descriptive statistics includes mean, frequency, standard deviation and percentages to profile sample characteristics and major patterns emerging from the data. In addition to measures of central tendencies, measures of dispersion. To facilitate this Likert Scale was used to enable easier presentation and interpretation of data. Data was presented in frequency tables, charts and graphs. Content analysis was also used in processing of this data and results presented in prose form. The analyzed data was then interpreted and presented in frequency tables.

3.7.2 Factor Analysis

The next technique involved factor analysis as the main component of quantitative data analysis. Factor analysis which is a systematic, statistical procedure used to uncover relationships amongst several variables were also conducted. This procedure enables numerous correlated variables to be condensed into fewer dimensions known as factors. In the context of this research, the variables are the degree of agreement with various specific perception statements while the factors are the general underlying constructs. As explained by Hinton *et al.* (2012), SPSS version 23 was used to examine the correlations between variables in the questionnaire data to establish sets of underlying variables or factors that explain the variation in the original (questionnaire/measured) variables. When correlations between the variables are high, it is possible to confuse some of the factors and/or that some variables may be redundant measures.

Factor analysis allows the large number of the questionnaires variables to be reduced to more limited sets of important and useful factors. The study undertaken exploratory factor analysis a level of analysis that involves examining the variable relationships without a predetermination of a model in which to fit the results (Bryman & Cramer, 2011). Four basic steps were followed in undertaking factor analysis: KMO and Bartlett's test, Factor extraction, Factor retention and Factor rotation. Finally, interpretation of factor analysis was done from the results of rotation. Before embarking on the factor analysis, tests were done to ensure the suitability of the data for this purpose; including the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO test). According to Hinton *et al.* (2012), a KMO test outcome of

0.5 or higher establishes the suitability of the data for factor analysis. Another test that the study performed is the Bartlett test of sphericity, which is to establish whether there are relationships to investigate.

Further, on suitability and reliability, the study also ensured that the data meets the recommended sample size. There are various suggestions on the most suitable sample size for factor analysis. (Hinton et al., 2012; Pallant, 2014), for instance, recommended minimum ratio of two subjects (respondents) for every one item (variable). However, to ensure that the data meets sample size threshold for factor analysis, the study relied on the suggestion by Yin (2009), popularly cited in factor analysis literature, of an absolute minimum of not less than 100 respondents for any analysis. The factor extraction method adopted for this study is principal axis factoring. Principal Axis Factoring, unlike principal component analysis, relaxes the assumption that the communality is equal to one. As a result, using this method enables the factor loadings to be higher, which leads to greater interpretability.

3.7.3 Inferential Data Analysis

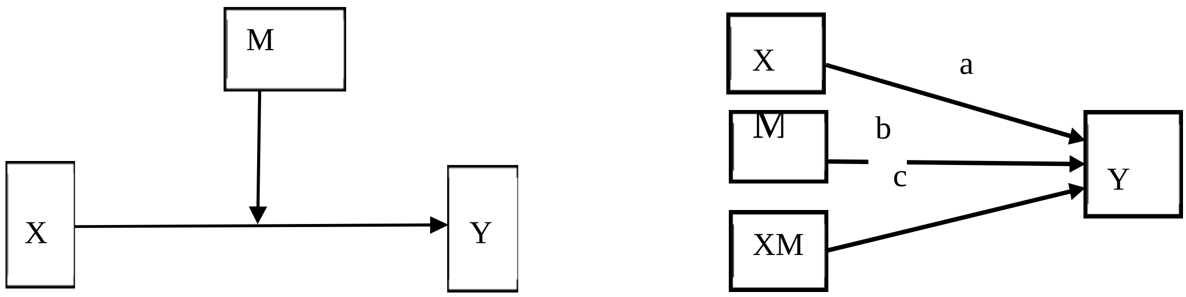
Inferential data analysis was done using Pearson correlation coefficient and regression analysis (multiple regression analysis). In many statistical methods in particular parametric measures one presumes (at least approximate) normal distribution of the variables. Therefore, for the purposes of using parametric statistics such as Pearson correlation and regression analysis, normal distribution of variables is needed and hence the variables was internally standardized. A perquisite step in computing the inferential statistics is the factor analysis to pick the parameters that have the highest weight.

3.7.3.1 Bivariate Correlation Analysis

Correlation technique is used to analyze the degree of association between two variables. The computation of a correlation coefficient yields a statistic that ranges from -1 to +1. This statistic is called a correlation coefficient (r) which indicates the relationship between the two variables being compared. The direction of the relationship is also important in that if it is positive (+) it means that there is a positive relationship between the two variables and this means that when one variable increases the other variable increases or when one variable decreases the other variable also decreases. A negative relationship (-) means that as one variable decreases the other variable increases and vice-versa and hence an inverse relationship. If there is no relationship the coefficient is equal to zero (0). Pearson correlation coefficient was used to determine the strength and the direction of the relationship between the dependent variable and the independent variable. The analysis using Pearson's product moment correlation was based on the assumption that the data is normally distributed and also because the variables are continuous.

They depicted both the conceptual and statistical models as shown in the Figure 3.1.

The conceptual model The statistical model



X=predictor variable, M=moderator variable, Y=criterion variable, XM = interaction term, Path a,b,c = regressions

Source: Baron and Kenny (1986)

Figure 3.1: Conceptual and Statistical Models for Simple Moderation

Figure 3.1 indicates a conceptual model used in the current study during testing of variables on how the moderator influences the relationship between the independent variable and the dependent variable while the statistical model indicates regressions carried out in that 'path a' as the predictor influencing on Y, 'path b' as the moderator influencing on Y, while 'path c' as the interaction term influencing on Y. The moderator hypothesis were supported when the interaction 'path c' is significant.

The variables are denoted as follows;

May be a table in APA format can be used here

Dependent Variable:

Y Successful completion of urban road transport infrastructure projects

Indicators:

- Completion of project within time
- Completion of project within budget
- Completion within specified quality standards
- Completion to stakeholder's satisfaction

Independent Variables:

X_1	Stakeholder participation in project initiation
X_2	Stakeholder participatory project planning
X_3	Stakeholder participation in project execution
X_4	Stakeholder participation in project closure
Moderating Variable:	
X_5	Risk management Practices Indicators: • Risk identification • Risk assessment • Risk mitigation • Risk monitoring and controlling
β_i	Regression coefficients where i =1,2,3,4,5,6
$(X_1X_2X_3X_4X_5)$	= Interaction term (Product of $X_1X_2X_3X_4X_5$)

The first model for the relationship between stakeholder participation in project life cycle management and completion of urban road transport infrastructure projects in Kenya took the form:

$Y= \beta_0 + \beta_1X_1 + \varepsilon$ (Model 1)

$Y= \beta_0 + \beta_2X_2 + \varepsilon$ (Model 2)

$Y= \beta_0 + \beta_3X_3 + \varepsilon$ (Model 3)

$Y= \beta_0 + \beta_4X_4 + \varepsilon$ (Model 4)

In addition, the study sought to examine how combined stakeholder participation in project life cycle management influences the completion of urban road transport infrastructure projects in Kenya. In this case, the study adopted the following equation:

$Y= \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$ (Model 5)

Further, to assess how risk management practices, influence the completion of urban road transport infrastructure projects in Kenya the study used the following equation:

$Y= \beta_0 + \beta_5X_5 + \varepsilon$ (Model 6)

3.7.3.2 Test for Moderating influence of Risk Management Practices

Moderated Multiple Regression Model was also used. Moderation implies an interaction effect, where introducing a moderating variable changes the direction or magnitude of the relationship between two variables. A moderated multiple regression model was used to establish and test the moderating effect of risk management practices on the relationship between stakeholder participation in project life cycle management and completion of urban road transport infrastructure projects in Kenya. Moderated influence in a regression model shows the influence of an independent variable on the dependent variable as a function of the third variable. The aim is to examine how the independent variable varies when a moderating variable is introduced in the model. The model was expressed as:

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_6X_6 + e$ (Model 7)

The regression technique was consisted of two models which were used to test moderating influence of risk management practices on the relationship between stakeholder participation in project life cycle management and completion of urban road transport infrastructure projects in Kenya. By using Baron and Kenny (1986), Model 1 was for combined influence of stakeholder participation in project life cycle management and completion of urban road transport infrastructure projects in Kenya, Model 2 had combined stakeholder participation in project life cycle management (predictor variable) and management practices as the interaction term on the predictor variable and completion of urban road transport infrastructure projects in Kenya (outcome or dependent variable). The steps are as discussed below.

Step one: Combined influence of stakeholder participation in project life cycle management and completion of urban road transport infrastructure projects in Kenya

In the first model, stakeholder participation in project life cycle management influence on completion of urban road transport infrastructure projects in Kenya was tested, with the equation adopted as

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e$

Step Two: Influence of Stakeholder participation in project life cycle management and risk management practices on Completion of urban road transport infrastructure projects in Kenya

In the second model, Risk management practices was introduced to the model with the equation adopted as:

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6 (X_1X_2X_3X_4X_5) + e$

To test the moderating influence of risk management practices, the change in R^2 was used by getting the difference between R^2 in Model in step 1 and step 2 (R_2-R_1). If there is a significant R^2 change, then risk management practices have a moderating influence on relationship between stakeholder participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya. project life cycle management

3.7.4 Hypothesis Testing

For the hypotheses to test the relationship between the dependent and independent variables were analyzed and tested through a regression model as shown in table 3.4. Pearson's correlation and linear Regression statistics was used.

Table 3.4: Summary of Statistical Tests of Hypotheses

Research Objective	Hypotheses	Type of analyses	Model	Interpretation of Results
To determine how stakeholder participation in project initiation influences completion of urban road transport infrastructure projects in Kenya.	H_0: Stakeholder participation in project initiation does not significantly influence completion of urban road transport infrastructure projects in Kenya	Pearson's correlation Simple Linear regression	$y=a+b_1X_1 + e$ y= completion of urban road transport infrastructure projects. a= constant b_1= Beta coefficient X_1= participation in project initiation e = Error term	P values less than 0.05, Ho was rejected and H1 failed to be rejected. Strength relationships of r values $+0.10<r<0.29$ was a weak correlation 0.30<r<0-49 was moderate correlation
To establish how stakeholder participation in project planning influences the completion of urban road transport infrastructure projects in Kenya.	H_0: Stakeholder participation in project planning does not significantly influence completion of urban road transport infrastructure projects in Kenya	Pearson's correlation Simple Linear regression	$y=a+b_2X_2 + e$ y= completion of urban road transport infrastructure projects a= constant b_2= Beta co-efficient X_2= participation in project planning e = Error term	$+0.5 < r < 1$ was a strong relationship. If variable under consideration was excluded from the final regression model, Ho failed to be rejected and R2 values was considered for
To determine how stakeholder participation in project execution influences completion of urban road transport infrastructure projects in Kenya	H_o: Stakeholder participation in project execution does not significantly influence completion of urban road transport infrastructure projects in Kenya	Pearson's correlation Simple Linear regression	$y=a+b_3X_3 + e$ y= completion of urban road transport infrastructure projects a= constant b_3= Beta coefficient X_3= participation in project execution e = Error term	determination of the strength of the relationship. P values less than 0.05, Ho was rejected and H1 failed to be rejected. Strength relationships of r values
To establish how stakeholder participation in project closure influences completion of urban road transport infrastructure projects in Kenya.	$H_{0;}$ Stakeholder participation in project closure does not significantly influence completion of urban road transport infrastructure projec ts in Kenya	Pearson's correlation Simple Linear regression	$y=a+b_4 X_4 + e$ y= completion of urban road transport infrastructure projects a= constant b_4= Beta co-efficient X_4 = participation in project closure e = Error term	$+0.10<r<0.29$ was a weak correlation 0.30<r<0-49 was moderate correlation $+0.5 < r < 1$ was a strong relationship.

To examine how combined stakeholder participation in project life cycle management influences the completion of urban road transport infrastructure projects in Kenya.	$H_{0:}$ Combined stakeholder participation in project life cycle management does not significantly influence completion of urban road transport infrastructure projects in Kenya	Pearson's correlation Multiple Linear regression	$y=a+ b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$ y= completion of urban road transport infrastructure projects a= constant b_1= Beta co-efficient X_1= participation in project initiation X_2= participation in project planning X_3= participation in project execution X_4 = participation in project closure e = Error term $Y= \beta0 + \beta5X5 + \varepsilon$	If variable under consideration was excluded from the final regression model, Ho failed to be rejected and R2 values was considered for determination of the strength of the relationship
To assess how risk management practices, influence the completion of urban road transport infrastructure projects in Kenya.	H_0: A Risk management practice does not significantly influence completion of urban road transport infrastructure projects in Kenya	Pearson's correlation Simple Linear regression	$y=a+b_3X_3 + e$ y= completion of urban road transport infrastructure projects a= constant b_3= Beta coefficient X_3= risk management practices e = Error term	
To assess the extent to which risk management practices moderates the relationship between stakeholder participation in project life cycle management and completion of urban road transport infrastructure projects in Kenya.	$H_{0;}$ Risk management practices do not have a significant moderating influence on the relationship between stakeholder participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya.	Hierarchical Multiple Linear regression	$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6 (X_1X_2X_3X_4X_5) + e$ y= completion of urban road transport infrastructure projects a= constant b_1= Beta coefficient X_1= participation in project initiation X_2= participation in project planning X_3= participation in project execution X_4 = participation in project closure X_5 = risk management practices e = Error term	

3.7.5 Diagnostics Tests

This study tested for normality, heteroscedasticity and autocorrelation. Normality is important in knowing the shape of the distribution and helps to predict dependent variables scores. Heteroscedasticity means a situation in which the variance of the dependent variable varies across the data, as opposed to a situation where Ordinary Least Squares, OLS, makes the assumption that $V(\varepsilon j) = \sigma 2$ for all j, meaning that the variance of the error term is constant (homoscedasticity). Heteroscedasticity complicates analysis because many methods in regression analysis assume equal variance. Autocorrelation refers to the correlation of a time series with its own past and future values (Box & Jenkins, 2013). The autocorrelation function can be used to detect non-randomness in data and also to identify an appropriate time series model if the data are not random.

To test normality, heteroscedasticity, and serial correlation (autocorrelation) of regression residuals, this study used the Jarque-Bera test, which, unlike most other tests, does not tend to reject the null hypothesis when N becomes large (Jarque & Bera, 2011). This study was also tested for multicollinearity. Multicollinearity is the undesirable situation where the correlations among the independent variables are strong.

To test for multicollinearity, correlations between all pairs of independent variables were computed. If some r is close to 1 or -1, one of the two correlated independent variables was removed from the model. Another method is by use of Variance Inflation Factor (VIF). This measures multicollinearity in the model. If no two independent variables are correlated, then all the VIFs was 1. If VIF for one of the variables is around or greater than 5, there is multicollinearity associated with that variable. In this case one of these variables must be removed from the regression model.

Table 3.5: Summary of the Diagnostics Tests

Test	Significance	Test used	Conclusion
Normality	Help in knowing the shape of the distribution and helps to predict dependent variables scores	-Shapiro-Wilk test -Quartile-Quartile Plot (Q-Q plot)	-If P-value< 0.05, data is normally distributed -For the fit to be done, the dependent variable scatter should be normally distributed
Heteroscedasticity	Checks whether the variance of the dependent variable varies across the data (test the assumption of equal variance)	Levene test	If P-value< 0.05, presence of non-uniform variance
Multicollinearity	Check whether the correlations among the independent variables are strong	Variance Inflation Factor (VIF)	If VIF for one of the variables is around or greater than 10, there is multicollinearity associated with that variable
Sampling Adequacy	Checks for acceptable degree of sampling adequacy	Kaiser-Meyer-Olkin (KMO) test. Bartlett's test of sphericity	Test outcome of 0.5 or higher establishes the suitability of the data for regression analysis.
Tests of Independence (Autocorrelation)	check that the residuals of the models were not autocorrelated (Checks for independence of error terms, which implies that observations are independent	Durbin Watson (DW) test	Scores between 1.5 and 2.5 indicate independent observations

3.8 Ethical Consideration

Ethical considerations were observed throughout the research process. The basic aspects of social considerations in social science research were considered. These include obtaining research permit from NACOSTI and then writing an introductory letter to KURA for approval to visit her projects to carry out the study. Further, a letter for transmittal of data to the respondents were written explaining to the respondent on reasons as to why the research is important and the importance of the respondent participating in the study by giving truthful and objective infuriation. They were also informed that the research is purely for academic purposes. They were assured that the information obtained would be anonymous. A consent form was then issued and signed by the respondents before they embark on filling the questionnaire. Creswell and Clark (2011) argues that the researcher has an obligation to respect the rights, needs, values, and desires of the informants.

At all times, the researcher adhered to ethical issues including; informed consent (Appendix V), honesty and trust, privacy, anonymity, disclosure, cultural sensitivity, harm and risk policy and voluntary participation. During data analysis and reporting, the researcher endeavors to practice acceptable analytical methods and reporting.

3.9 Operationalization of Variables

This section illustrates the operationalization of variables as indicated in the conceptual framework. The following indicators measure the dependent variable, which is the Completion of urban road transport infrastructure projects: completion of project activities within time, budget and specified quality standards, and to satisfaction of project stakeholders. The independent variables include participation in project initiation, participatory project planning, participation in project execution and participation in project closure. The moderating variable is risk management practices. Table 3.6, indicates the operational definition of variables which include their respective, objectives, variables, indicators, measurement, measuring scales, statistical analysis and tools of analysis. The measuring scales adopted was ordinal or interval as recommended by 12th edition of Business Research Methods (Donald & Cooper, 2017), considering that most of the research instruments contain Likert scale type questions.

Table 3.6: Operationalization of Variables

Objective	Variables	Indicators	Measurement	Measuring scale	Statistical analysis Techniques	Tool of analysis
	Dependent variable: Completion of urban roads transport infrastructure construction projects	• Timely completion • Within Cost • Quality specifications • Stakeholder satisfaction .	A composite index will be obtained by calculating the average of the total sum of the responses of each respondent over the four indicator items measuring this variable.	Interval	Descriptive Analysis	Mean. Percentages frequency
To determine how stakeholder participation in project initiation influences completion of urban road transport infrastructure projects in Kenya	**Independent Variable:** Participation in project initiation	• Participation in Stakeholder identification • Participation in Setting Goals/objectives • Participation in Needs Assessment • Participation in Feasibility study	A composite index will be obtained by calculating the average of the total sum of the responses of each respondent over the five indicator items measuring this variable.	Interval	Descriptive Analysis Inferential analysis	Mean Percentages Standard deviation Simple linear regression Analysis Pearson's correlation coefficient
To establish how stakeholder participation in project planning influences the completion of urban road transport infrastructure projects in Kenya.	**Independent Variable:** Participation in project planning	• Participation in Budgeting • Participation in Resource planning • Participation in Schedule planning • Participation in Design/Scope planning	A composite index will be obtained by calculating the average of the total sum of the responses of each respondent over the four indicator items measuring this variable.	Interval	Descriptive Analysis Inferential analysis Descriptive Analysis Inferential analysis	Simple linear regression Analysis Pearson's correlation coefficient mean percentages frequency

Objective	Variables	Indicators	Measurement	Measuring scale	Statistical analysis Techniques	Tool of analysis
To establish how stakeholder participation in project execution influences the completion of urban road transport infrastructure projects in Kenya	**Independent Variable:** Participation in project execution	• Participation in Pre-construction meeting • Participation in Execution of planned activities • Participation in monitoring/ controlling project activities • Participation in Communication	A composite index will be obtained by calculating the average of the total sum of the responses of each respondent over the four indicator items measuring this variable.	Interval	Descriptive Analysis Inferential analysis	Simple linear regression Analysis Descriptive Analysis Pearson's correlation coefficient
To establish how stakeholder participation in project closure influences completion of urban road transport infrastructure projects in Kenya.	**Independent variable:** Participation in project closure	• Participation in Inspection and acceptance • Participation in Taking over of project documents • Participation in Project commissioning. • Participation in Lessons learned	A composite index will be obtained by calculating the average of the total sum of the responses of each respondent over the four indicator items measuring this variable.	Interval	Descriptive Analysis Inferential analysis	Simple linear regression Analysis Pearson's correlation coefficient
To examine how combined stakeholder participation in project lifecycle management influences the completion of urban road transport infrastructure projects in Kenya.	**Independent Variable:** Combined stakeholder participation in project lifecycle management	• Extent of participation in project initiation • Extent of participation project planning • Level of participation in project execution • Level of participation in project closure	A composite index will be obtained by calculating the average of the total sum of the responses of each respondent over the four indicator items measuring this variable	Interval	Descriptive Analysis Inferential analysis	Multiple Linear Regression analysis

Objective	Variables	Indicators	Measurement	Measuring scale	Statistical analysis Techniques	Tool of analysis
To assess how risk management practices influences the completion of urban road transport infrastructure projects in Kenya	**Moderator** Risk management practices	• Risk Identification • Risk Assessment • Risk Mitigation • Risk Monitoring and Controlling	A composite index will be obtained by calculating the average of the total sum of the responses of each respondent over the four indicator items measuring this variable Open-ended questions	Interval	Descriptive Analysis Inferential analysis	Simple linear regression Analysis Pearson's correlation coefficient
To assess how risk management practices influence the relationship between stakeholders participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya	**Moderator** Risk management practices, stakeholder participation in project lifecycle management	• Risk Identification • Risk Assessment • Risk Mitigation • Risk Monitoring and Controlling	A composite index will be obtained by calculating the average of the total sum of the responses of each respondent over the four indicator items measuring this variable	Interval	Inferential analysis	Multiple linear regression Analysis Pearson's correlation coefficient
					Descriptive Analysis Inferential analysis	
			Open-ended questions	Interval		

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter discusses the findings obtained from the primary instrument used in the study. It discusses the characteristics of the respondents, their opinions on how participation in project initiation, project planning, project execution and project closure influences the completion of urban road transport infrastructure projects in Kenya. It also looks at influence of risk management practices influence the completion of urban road transport infrastructure projects in Kenya. The chapter is organized to present the findings by first looking at the response rate, the demographic variables and objectives of the study. In order to simplify the discussions, the researcher provided tables that summarize the collective reactions of the respondents. The hypothesis was also tested and diagnostic tests conducted.

4.2 Questionnaire Return Rate

The targeted respondents for the study was 310. The results for response rate analysis is illustrated in Table 4.1.

Table 4.1: Questionnaire Return Rate

Category of sampled population	Sample	Return Rate	Percentage
KURA project implementation team members	73	59	80.8
KURA planners and directors of departments	4	3	75.0
Road contractors, project site management	152	141	92.8
Consultants, Supervision teams	17	11	64.7
Representatives of PAPS	41	17	41.5
Complimentary service providers	23	8	34.8
Overall Questionnaire Rate	**310**	**214**	**69.0**

Table 4.1 shows that, out of the 310 sampled respondents, only 214 responded. They included (KURA project implementation team members, KURA Departmental Directors and planners, Road contractors and Consultants). Also there were 17 representatives of PAPS and 8 Complimentary service providers who were interviewed. This gave a questionnaire rate of 69.0% which is within a response rate of 50% (Saunders, Lewis & Thornhill, 2009) and 70% (Yin, 2017). In view of Mugenda & Mugenda (2003) 50% is adequate, 60% is good and 70% is above excellent. Hence, a response or questionnaire return rate of 69.0% obtained in this study was considered appropriate and enough to carry out analysis.

4.3 General Information about Respondents

This section presents general information of the respondents, which included gender, highest level of education, number of years in the construction industry and which phases of the project lifecycle management they have participated in. It also presents respondents data on Job/Trade/Profession, name of their organization, position in the organization and department in the organization. This data was used to assess the eligibility of the respondents to participate in collection of the data for this study. This general information was presented in form tables.

4.3.1 Gender of the Respondents

The study sought to establish the gender of the respondents who participated in the study. The respondents were hence asked to indicate their gender. The purpose was to establish the gender distribution of those who took part in the study. The results were as shown in the Table 4.2.

Table 4.2: Distribution of Respondents by Gender

	Frequency	**Percentage**
Male	187	87.4
Female	27	12.6
Total	**214**	**100**

Table 4.2 show that, 187 (87.4%) of the respondents were male while 27(12.6%) were female. This shows that the study obtained more information from male respondents since most of the participants in urban road transport infrastructure projects are men. However, the fact that female respondents also contributed to the responses enhanced the quality of results obtained. This shows that there is still room for improvement to encourage more women to take part in development and also ensure policy implementation at all levels starting from grassroot to the top.

4.3.2 Highest Level of Education

The study further sought to establish the highest level of education of the respondents who had taken part in the study. Hence the respondents were required in the questionnaire to indicate their highest level of education. This was very important for the study as it implicated how the respondents would respond to questions and how well they understood stakeholder participation in project lifecycle management. Their findings on Highest Level of Education is presented in Table 4.3.

Table 4.3: Distribution of Respondents by Highest Level of Education

	Frequency	Percentage
Certificate	18	8.4
Diploma	33	15.4
Bachelor’s Degree	119	55.6
Master’s degree	41	19.2
PHD	3	1.4
Total	**214**	**100**

From Table 4.3, most of the respondents as represented by119 (55.6%) had a bachelor’s degree. Other respondents had master’s degree as represented by 41(19.2%), diploma as represented by 33(15.4%), certificate as represented by 18 (8.4%) and PhD as represented by 3(1.4%). This implies that all the respondents had adequate academic qualifications to participate in data collection of the study. Also having adequate and high academic qualifications made the respondents to be in a position to give accurate information about the stakeholder participation in project lifecycle management, risk management practices and completion of urban road transport infrastructure projects in Kenya.

4.3.3 Number of Years in the Construction Industry

Further the study sought to establish the number of years the respondents have been involved in the construction industry. Hence the respondents were required in the questionnaire to indicate number of years they have been involved in the construction industry. The purpose of this was to establish how experienced the respondents were and their familiarity with stakeholder participation in construction industry. The findings were as presented in Table 4.4.

Table 4.4: Distribution of Respondents by Number of Years in the Construction Industry

	Frequency	Percentage
1 - 5 years	37	17.3
6-10 years	77	36
11-15 years	58	27.1
More than 16 years	42	19.6
Total	**214**	**100**

From Table 4.4, 77 (36)% of the respondents indicated to have been in construction industry for a period between 6 to 10 years, 11 to 15 years as shown by 58(27.1%), more than 16 years as shown by 42(19.6%) and 1 to 5 years as shown by 17.3%. This shows that majority of the respondents had participated in construction industry for long enough to be able to give accurate information in relation to stakeholder participation in project lifecycle management, risk management practices and completion of urban road transport infrastructure projects in Kenya. Also having collected data from respondents of diverse experiences in construction industry improved the quality of the data obtained for the study.

4.3.4 Distribution of Respondent by Participation in various Phases of the Project Lifecycle Management

The study sought to establish respondents' participation in various phases of the project life cycle. Hence the respondents were also asked to indicate the phases of the project life cycle they have participated in. The findings were presented in Table 4.5.

Table 4.5: Participation in Various Phases of the Project Lifecycle Management

	Yes		**No**	
	F	**P**	**F**	**P**
Project initiation	130	60.7	84	39.3
Project planning	188	87.9	26	12.1
Project execution	211	98.6	3	1.4
Project closure	198	92.5	16	7.5

From the Table 4.5, the respondents indicated to have participated in project execution as shown by 98.6%, project closure (handover, commissioning) as shown by 92.5%, project planning as shown by 87.9% and project initiation as shown by 60.7%. Participation in various phases of the project life cycle puts the respondents in a better position to give credible and accurate information on influence of risk management practices on the relationship between stakeholder participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya.

Also, the study respondents were requested to indicate particular road projects that they were professionally involved in their implementation. The responses indicated that they were in various roads projects Kenya, most of which were located in urban areas as captured in Appendix IX. This implies that, the respondents have rich experience the implantation of road infrastructure projects in the country, and therefore their opinions could be reliable.

4.4 Basic Tests for Statistical Assumptions

Under this section diagnostic tests for testing the regression assumptions are presented. These tests include normality, heteroscedasticity, autocorrelation, multicollinearity and sampling adequacy. Before a complete regression analysis can be performed, the assumptions concerning the original data must be made (Sevier, 1957). Ignoring the regression assumptions may contribute to wrong validity estimates (Antonakis & Deitz, 2011). When the assumptions are not met, the results may result in Type I or Type II errors, or over- or under-estimation of significance of the effect size (Osborne & Waters, 2002).

4.4.1 Normality Test

The testing for normality in this study was conducted using Kolmogorov Smirnov test and Shapiro Wilk test. Testing for normality findings were illustrated in Table 4.6.

Table 4.6: Checking for Normality

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Participation in project initiation	0.183	213	0.021	0.907	213	0.610
Participation in project planning	0.171	213	0.016	0.902	213	0.530
Participation in project execution	0.172	213	0.009	0.812	213	0.080
Participation in project closure	0.138	213	0.011	0.917	213	0.262
Risk management Practices	0.111	213	0.023	0.931	213	0.171
Completion of Urban Road Transport Infrastructure Projects	0.139	213	0.017	0.872	213	0.439

Thus, Table 4.6 indicates that using both tests of normality, which is Kolmogorov Smirnov test and Shapiro-Wilk tests, the p-value for both tests, is greater than 0.05, thus the study rejected Ho and a conclusion was made that data on both the dependent and the independent factors were normally distributed and as a result it helps to predict dependent variables. This is as prescribed by Park (2015) that if the Sig. value of the Shapiro-Wilk Test is greater than 0.05, the data is normal. If it is below 0.05, the data significantly deviate from a normal distribution.

The normality of the dependent and the independent variables was determined by use of a Quantile - Quantile (Q-Q) plot. The Q-Q plot, or quantile-quantile plot, is a graphical tool to help assess if a set of data probably came from some theoretical distribution such as normal or exponential. It is considered an important diagnostic test for checking the assumption of normality (Stine, 2017). The plot is useful in the early stages of analysis when exploring data before actually calculating a correlation coefficient or fitting regression curve. It helped to determine whether a linear regression model is appropriate (Sudhir & Xuemao, 2009). The results of the Q - Q Plots for stakeholder participation in project initiation, stakeholder participation in project planning, stakeholder participation in stakeholder project execution, stakeholder participation in project closure, risk management practices, and completion of urban road transport infrastructure projects all indicate that the respective indicators were approximately distributed along the normal line, meaning that the data could be utilized to run regression analysis. Figure 4.1 shows the plot for the dependent variable. The Q-Q plots for all the variables are shown in Appendix V.

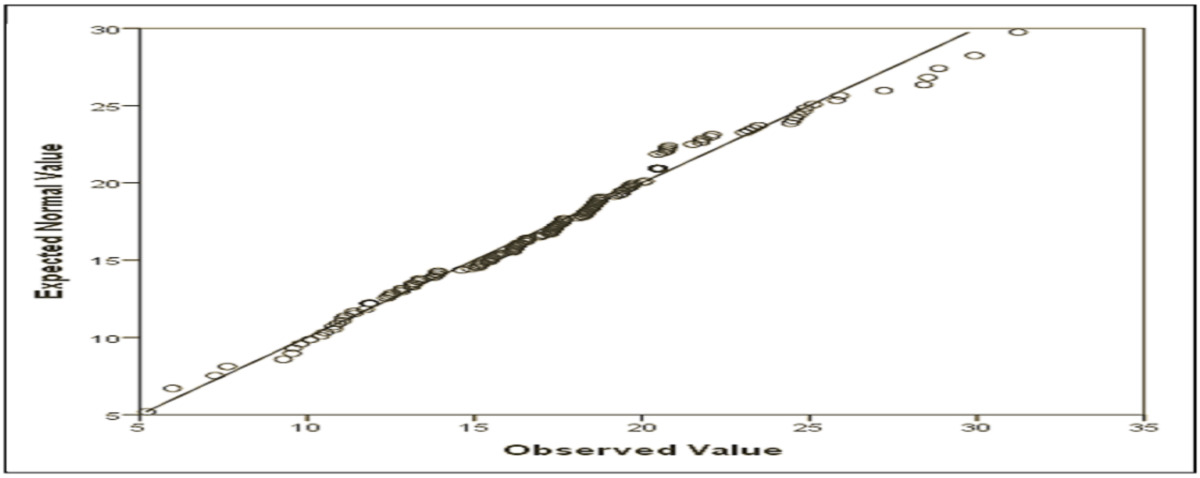


Figure 4.1: Normal Q-Q Plot for completion of urban roads transport infrastructure projects. As appendix

From the results obtained, the normal Q-Q plot of completion of urban roads transport infrastructure projects had most of its cases lying on the 45^0 lines, thus the observed values of completion of urban roads transport infrastructure projects with the hypothetical distribution and hence normally distributed. Further, the Q-Q plots affirmed the normality of the data.

4.4.2 Heteroscedasticity

This test checks whether the variance of the dependent variable varies across the data (test the assumption of equal variance). To test for heteroscedasticity, the Levene test was used where if P-value< 0.05 is an indication of presence of non-uniform variance. The test results were as shown in Table 4.7.

Table 4.7: Levene Test Results

	Levene Statistic	Df1	Df2	Sig.
Stakeholder participation in project initiation	0.183	1	212	0.021
Stakeholder participation in project planning	2.171	1	212	0.014
Stakeholder participation in project execution	3.172	1	212	0.031
Stakeholder participation in project closure	4.238	1	212	0.003
Risk management Practices	1.211	1	212	0.047
Completion of urban roads transport infrastructure projects	2.331	1	212	0.034

From the results obtained, the p-value for all the variables (stakeholder participation in project initiation, stakeholder participation in project planning, stakeholder participation in project execution, stakeholder participation in project closure, risk management practices and completion of urban roads transport infrastructure projects) were less than 0.05 hence the null hypotheses for equal variances was rejected. This further shows that the data set had no heteroscedasticity and is therefore suitable for modelling of regression equation

4.4.3 Test for Multicollinearity

To establish whether multicollinearity levels would pose a challenge to the data analysis, collianearity diagnostics was conducted to generate the Variance Inflation Factor (VIF) value and tolerance levels. Multi-collinearity occurs when the independent variables are not independent from each other. Collinearity (also called multi-Collinearity) refers to the assumption that the independent variables are uncorrelated (Darlington, 1968; Keith, 2006). Multi-collinearity occurs when several independent variables correlate at high levels with one another, or when one independent variable is a near linear combination of other independent variables. The study utilized Collinearity Statistics to find out whether the independent variables are adequately correlated to show a substantial causal correlation. The results for multicollinearity test were presented in Table 4.8.

Table 4.8: Collinearity Statistics

	Collinearity Statistics	
	Tolerance	VIF
Stakeholder participation in project initiation	0.927	1.079
Stakeholder participation in project planning	0.466	2.146
Stakeholder participation in project execution	0.603	1.658
Stakeholder participation in project closure	0.638	1.567
Risk management Practices	0.776	1.289

Results in Table 4.8 show that, based on the coefficients output, stakeholder participation in project initiation had a VIF value of 1.079, stakeholder participation in project planning had a VIF value of 2.146, stakeholder participation in project execution had a VIF value of 1.658, stakeholder participation in project execution had a VIF value of 1.567 and risk management practices had a VIF value of 1.289. The VIF values for all the variables were less than 10 and a tolerance greater than 0.1 implying that there was no Multicollinearity symptoms as indicated by Bryman (2012).

4.4.4 Sampling Adequacy

This test was conducted to check for acceptable degree of sampling adequacy. The test was done using Bartlett's test of sphericity and Kaiser-Meyer-Olkin (KMO) test where the Test outcome of 0.5 or higher establishes the suitability of the data for regression analysis. Sampling adequacy was assessed using the Bartlett's Test of sphericity which analyses if the samples are from populations with equal variances. The test results are as shown in Table 4.9.

Table 4.9: Kaiser-Meyer-Olkin (KMO) and Bartlett's Test

Factors	KMO Test	Bartlett's Test of Sphericity			Determinant
		Approx. Chi-Square	df	Sig.	
Stakeholder participation in project initiation	0.802	510.767	213	0.001	0.034
Stakeholder participation in project planning	0.759	382.052	213	0.000	0.186
Stakeholder participation in project execution	0.825	622.734	213	0.002	0.006
Stakeholder participation in project closure	0.853	848.875	213	0.010	0.242
Risk management Practices	0.867	786.123	213	0.000	0.175
Completion of urban roads transport infrastructure projects	0.781	656.712	213	0.006	0.236

Table 4.9 show that Bartlett's test significances were less than 0.05 ($p<0.1$) further indicates an acceptable degree of sampling adequacy (sample is factorable). Also the KMO statistics for all the variables were greater than 0.5 (stakeholder participation in project initiation (0.802), stakeholder participation in project planning (0.759), stakeholder participation in project execution (0.825), stakeholder participation in project closure (0.853), risk management practices (0.867) and completion of urban roads transport infrastructure projects (0.781)). This implies that the data was suitable for regression analysis.

4.4.5 Control of Type I Error and Type II Error

Type I or Type II errors occur when certain assumptions about the variables used in the analysis are not met resulting to untrustworthy results. Analyses by Osborne and Waters (2001) show that removal of univariate and bivariate outliers can reduce the probability of Type I and Type II errors, and improve accuracy of estimates. This was done by use of the SPSS software. Making an error in measurement is of great concern. In cases of simple correlation and regression, unreliable measurement causes relationships to be under-estimated increasing the risk of Type II errors. In the case of multiple regression or partial correlation, effect of sizes of other variables can be over-estimated if the covariate is not reliably measured. In the current study, correction of low reliability was done and obtained a composite Cronbach alpha of 0.852 and this ensured obtaining a true picture of the relationship of the variables and avoided overestimating during multiple regressions. During testing of the data, the confidence levels of 95% and significance level of 0.05 was adopted. In addition, type II error was minimized by taking a large sample of 309 respondents.

4.4.6 Analysis of Likert Type Data

The questionnaire had seven sections that applied the Likert scale questions. The scales used comprised of a 5 point Likert items ranging from 5 = strongly agree, 4 = somewhat agree, 3=Neutral, 2 = Disagree and 1 = strongly disagree. The items in each variable were 20. The analysis of Likert scale was based on Zikmund, Babin, Carr and Griffin (2012) who noted that arguments that indicated that Strongly Agree (SA) ranges between 4.5 and 5.0; Agree (A) ranges between 3.5 and 4.5; Neutral (N) ranges between 2.6 and 3.4; while Disagree (D) ranges between 1.8 and 2.6; and Strongly Disagree (SD) ranges between 1 and 1.7.

Descriptive statistics on the study variables included for participation in project initiation, project planning, project execution and in project closure, risk management practices and completion of urban road transport infrastructure projects in Kenya.

4.5 Completion of Urban Roads Transport Infrastructure Projects

In this study, completion of urban roads transport infrastructure projects was the dependent variable.

4.5.1 Descriptive Analysis for Completion of Urban Roads Transport Infrastructure Projects

Data was collected using the questionnaire by asking the respondents to indicate the extent to which they agreed or disagreed with various statements concerning the project completion within time, project completion within cost, project completion within quality and stakeholder satisfaction. The questionnaire had five statements linked to project completion within time. The item statements were measured using a 5 point Likert scale ranging from 5 = strongly agree, 4 = agree, 3 = Neutral, 2 = disagree and 1= strongly disagree. The findings are presented in Table 4.10. The Likert scale items were designed as a series of questions.

Table 4.10: Completion of Urban Road Transport Infrastructure

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev.	Total F (%)
Project Completion within Time								
CP-01 The project implementation is on schedule	38 (17.8)	122 (57)	54 (25.2)	0 (0)	0 (0)	2.07	0.653	214 (100)
CP-02 Land acquisition process affected project completion	0 (0)	7 (3.3)	15 (7)	49 (22.9)	143 (66.8)	4.53	0.767	214 (100)
CP-03There were many variation orders during construction phase	18 (8.4)	28 (13.1)	47 (22)	82 (38.3)	39 (18.2)	3.45	1.177	214 (100)
CP-04 The evacuation of informal settlements affected the project completion time	0 (0)	0 (0)	31 (14.5)	126 (58.9)	57 (26.6)	4.12	0.631	214 (100)
CP-05 Relocation of existing service lines (power, water, sewer, data, telephone) was delayed	1 (0.5)	11 (5.1)	9 (4.2)	72 (33.6)	121 (56.5)	4.41	0.833	214 (100)
Sub-Composite mean and standard deviation						3.72	0.812	
Project Completion within Cost								
CP-06 The contractor's payments were delayed thereby attracting interest payments	5 (2.3%)	6 (2.8%)	18 (8.4%)	117 (54.7%)	68 (31.8%)	4.11	0.846	214 (100)
CP-07 Variations in the scope of works caused increase in the project cost	4 (1.9%)	16 (7.5%)	23 (10.7%)	93 (43.5%)	78 (36.4%)	4.05	0.970	214 (100)
CP-08 Project managers monitored project activities to prevent cost overruns	5 (2.3%)	2 (0.9%)	34 (15.9%)	113 (52.8%)	60 (28.0%)	4.03	0.830	214 (100)
CP-09 There was fluctuation in the cost of fuel, materials and labor	3 (1.4%)	4 (1.9%)	11 (5.1%)	57 (26.6%)	139 (65.0%)	4.52	0.797	214 (100)
CP-10 There were design omissions which contributed to additional cost	34 (15.9%)	26 (12.1%)	20 (9.3%)	72 (33.6%)	62 (29.0%)	3.48	1.426	214 (100)
Sub-Composite mean and standard deviation						4.04	0.974	
Project Completion within Quality								
CP-11 There were minimum repairs works on the completed sections of road	13 (6.1%)	24 (11.2%)	34 (15.9%)	74 (34.6%)	69 (32.2%)	3.76	1.193	214 (100)
CP-12 Quality tests carried out on completed works were within specifications	3 (1.4%)	9 (4.2%)	24 (11.2%)	95 (44.4%)	83 (38.8%)	4.15	0.881	214 (100)
CP-13 The surface of the completed road sections is smooth and comfortable to ride on	0 (0.0%)	1 (0.5%)	12 (5.6%)	87 (40.7%)	114 (53.3%)	4.47	0.625	214 (100)
CP-14 Completed road sections are	0	8	9	96	101	4.36	0.735	214

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev.	Total F (%)
easily maintained.	(0.0%)	(3.7%)	(4.2%)	(44.9%)	(47.2%)			(100)
CP-15 The road does not flood during heavy rains	0 (0.0%)	6 (2.8%)	17 (7.9%)	79 (36.9%)	112 (52.3%)	4.39	0.753	214 (100)
Sub-Composite mean and standard deviation						4.23	0.837	
Stakeholder Satisfaction								
CP-16 The completed part of road has helped to substantially reduce travel time	0 (0.0%)	1 (0.5%)	10 (4.7%)	84 (39.3%)	119 (55.6%)	4.50	0.611	214 (100)
CP-17 The value of the land in the area has increased	1 (0.5%)	1 (0.5%)	16 (7.5%)	87 (40.7%)	109 (50.9%)	4.41	0.691	214 (100)
CP-18 The area has attracted new commercial investments	0 (0.0%)	2 (0.9%)	17 (7.9%)	72 (33.6%)	123 (57.5%)	4.48	0.683	214 (100)
CP-19 The matatu fares have reduced substantially	1 (0.5%)	18 (8.4%)	20 (9.3%)	73 (34.1%)	102 (47.7%)	4.20	0.955	214 (100)
CP-20 Adequate safety facilities for pedestrians were provided	5 (2.3%)	4 (1.9%)	9 (4.2%)	79 (36.9%)	117 (54.7%)	4.40	0.848	214 (100)
Sub-Composite and standard deviation						4.40	0.758	
Composite mean and Standard deviation						**4.10**	**0.845**	

Table 4.10 shows the results from analysis of completion of urban road transport infrastructure projects. A composite mean and standard deviation were computed whereby a line item mean and standard deviation were used for comparison. On one hand, where the line item was found to be lower than the composite mean, the statement or the item influenced the outcome negatively. On the other hand, a lower standard deviation to the composite standard deviation was an indication that the responses were convergent or consistent and vise-versa.

Statement CP-01, that the project implementation is on schedule, 122(57%) of the respondents indicated disagreement, 54(25.2%) indicated neutrality and 38(17.8%) indicated strong disagreement. The mean score was 2.07 and standard deviation 0.653 which were both below the composite mean and standard deviation of 4.10 and 0.845 respectively. This results show that most of the respondents were in disagreement that project implementation is on schedule. There is therefore need to establish any factors that may stand in the way to delay timely completion of projects. These could include mobilization of required resources such as financial and physical for road construction hence road completion. Given a lower standard deviation on the line item, the opinions on this statement tended to converge.

Statement CP-02, that land acquisition process affected project completion, 143 (66.8%) of the respondents indicated strong agreement, 49(22.9%) indicated agreement and 7% indicated neutrality while 7(3.3%) indicated disagreement. The mean score was 4.53 above the composite mean of 4.10, which implied that land acquisition process affects project completion. This is true in that land is an important factor of production. Obtained was a line item standard deviation of 0.767 below the composite standard deviation of 0.845 which showed that opinions converged.

Statement CP-03, that there were many variation orders during construction phase, 82(38.3%) of the respondents agreed with the statement, 47(22%) were neutral, 39(18.2%) strongly agreed, 28(13.1%) disagreed and 18(8.4%) strongly disagreed with the statement. The mean score was 3.45 and standard deviation was 1.177. The mean of this statement was less than the composite mean of 4.10 and hence the findings indicate that there were less variation orders during construction phase. This could also mean that the team on the construction site properly understood project's design specifications. By comparing the line standard deviation to the composite of 0.846, the study rather concluded that the opinions were inconsistent.

Statement CP-04, that the evacuation of informal settlements affected the project completion time, 126(58.9%) of the respondents indicated agreement, 57(26.6%) indicated strong agreement and 31(14.5%) indicated neutrality. The mean score was 4.12 and standard deviation was 0.631. The mean being more than the composite mean of 4.10, the results imply that evacuating informing settlements significantly affected time taken to complete the project. The evacuation process seems to have consumed significant time needed for construction of the project. There is need to allocate sufficient time for this process to avoid delays in future road construction projects. The line standard deviation was below the composite standard deviation of 0.845 implying that opinions converged.

Statement CP-05, relocation of existing service lines (power, water, sewer, data, telephone) was delayed, most of the respondents strongly agreed with the statement 121(56.5%). Other respondents indicated agreement 72(33.6%), 11(5.1%) disagreed, nine (4.2%) were neutral and only one respondent (0.5%) strongly disagreed. The mean score was 4.41 and was more than the composite mean of 4.10 while the standard deviation was 0.833 more than the composite standard deviation of 0.845. These findings imply that relocation of existing service lines including power, water, sewer, data and telephone were delayed. This might have affected completion time since the contractors had to give time for relocation exercise to take place first. There is need therefore to ensure that all stakeholders are involved early and given time to play their specific roles to ensure that completion of road projects is done as per the planned time.

Statement CP-06, that the contractor's payments were delayed thereby attracting interest payments, 117(54.7%) of the respondents agreed with the statement, 68(31.8%) strongly agreed, 18(8.4%) were neutral and 6(2.8%) disagreed while 5(2.3%) of the respondents strongly disagreed with the statement. The mean score was 4.11 and standard deviation was 0.846. The mean of the statement was more than the composite mean of 4.10 and hence the findings indicated most of the respondents agreed that contractor's payments were delayed thereby attracting interest payments. This is a common phenomenon that needs to be checked so as to ensure initial budget allocation are not affected and trigger extra costs in completion of the project. The standard deviation (0.846) on this line item was above the composite of 0.845 implying that opinions diverged.

Statement CP-07, that variations in the scope of works caused increase in the project cost, 93(43.5%) of the respondents agreed with the statement, 78(36.4%) strongly agreed 23(10.7%) were neutral and 16(7.5%) disagreed while 4(1.9%) of the respondents strongly disagreed with the statement. The mean score was 4.05 below the composite mean of 4.10. This means that variations in the scope of works did not cause increase in the project cost. Proper assessment of the needs of the user must therefore remain factored in during the design phase to ensure scope of works always adheres to the original plan, and especially avoiding to go overboard. The standard deviation was 0.970 above the composite standard deviation of 0.845 implying that opinions were divergent.

Statement CP-08, that project managers monitored project activities to prevent cost overruns, 113(52.8%) of the respondents agreed with the statement, 60(28%) strongly agreed, 34(15.9%) were neutral and 5(2.3%) strongly disagreed while 2(0.9%) of the respondents disagreed with the statement. The mean was 4.03 below a composite mean of 4.10, and standard deviation was 0.830. These findings imply that there was an agreement among most of the respondents that project activities need to be monitored by project managers to prevent cost overruns. However, for proper cost management of construction works, contractors need to learn some financial management skills. The opinions converged given a lower line item standard deviation compared to a composite standard deviation of 0.845.

Statement CP-09, that there was fluctuation in the cost of fuel, materials and labor, 139(65%) of the respondents strongly agreed with the statement, 57(26.6%) agreed, 11(5.1%) were neutral and 4(1.9%) disagreed while 3(1.4%) of the respondents strongly disagreed with the statement. The mean score of 4.52 was above a composite mean of 4.10. These results imply that there was a strong agreement among most of the respondents that there was fluctuation in the cost of fuel, materials and labor. Financial design for road construction should be able to capture such unforeseen costs that are likely to emerge during construction and provision made for adjustment in case of these very eventualities. The standard deviation was 0.797 below the composite standard of 0.845 implying the opinions remained consistent.

Statement CP-10, that there were design omissions which contributed to additional cost, 72(33.6%) of the respondents agreed with the statement, 62(29%) strongly agreed, 34(15.9%) strongly disagreed and 26(12.1%) disagreed while 20(9.3%) of the respondents were neutral with the statement. The mean was 3.48 below the composite mean of 4.10 and standard deviation was 1.426. This is an indication that most of the respondents agreed that there were design omissions, which contributed to additional cost. Design omission are also likely to affect the cost of the project and hence the need to be accorded keen attention in the future construction. The standard deviation on this statement was rather higher than the composite standard deviation of 0.845 indicating divergence in opinions recorded.

Statement CP-11, that there were minimum repairs works on the completed sections of road as indicated by 74(34.6%) of the respondents who agreed with the statement, 69(32.2%) strongly agreed, 34(15.9%) were neutral and 24(11.2%) disagreed while 13(6.1%) of the respondents strongly disagreed with the statement. The mean score was 3.76 below the composite mean of 4.10. This is an indication that most of the respondents were in agreement that there were minimum repair works on the completed sections of road, thereby implying that the roads were constructed to quality standards as specified in the contract. Recorded on this statement was a higher standard deviation of 1.193 higher than 0.845 the composite standard deviation, hence opinions divergent.

Statement CP-12, that quality tests carried out on completed works were within specifications, 95(44.4%) of the respondents agreed with the statement, 83(38.8%) strongly agreed, 24(11.2%) were neutral, 9(4.2%) disagreed and 3(1.4%) of the respondents strongly disagreed. The mean was 4.15 below the composite mean of 4.10 implying that majority of the respondents agreed that quality tests carried out on completed works were within specifications. This means that the supervision teams were monitoring and controlling the quality of works to ensure a quality product. The standard deviation was 0.881 above the composite standard deviation of 0.845 implying opinions were diverging.

Statement CP-13, that the surface of the completed road sections is smooth and comfortable to ride on, 114(53.3%) of the respondents strongly agreed with the statement, 87(40.7%) agreedand 12(5.6%) were neutral while 1(0.5%) of the respondents disagreed with the statement. The mean was 4.47 above the composite mean of 4.10 implying that most of the respondents were in strong agreement that the surface of the completed road sections is smooth and comfortable to ride on. This is a good measure of a road that has successfully been completed and should always be applied to road constructed in the future. A standard deviation of 0.625 obtained on this statement was below the composite standard deviation of 0.845 indicating that opinions converged.

Statement CP-14, that completed road sections are easily maintained, 101(47.2%) of the respondents strongly agreed with the statement, 96(44.9%) agreed, 9(4.2%) were neutral while 8(3.7%) of the respondents disagreed with the statement. The mean was 4.36 above the composite mean of 4.10 implying that there was a agreement among majority of the respondents that completed road sections are easily maintained. Although maintenance is a good thing, materials used during construction should be enough and of good quality to contribute to longer lasting product. Also obtained was standard deviation was 0.735 below the composite standard deviation of 0.845 meaning that respondents' opinions were consistent.

Statement CP-15, that the road does not flood during heavy rains, 112(52.3%) of the respondents strongly agreed with the statement, 79(36.9%) agreed, 17(7.9%) were neutral and six (2.8%) of the respondents disagreed with the statement. The mean was 4.39 above the composite mean of 4.10, showing that most of the respondents agreed that the completed road sections do not flood during heavy rains. This is an indication that the completed road sections were constructed in accordance with the set specifications thereby showing the contractors and supervision staff were working together in producing quality works. A standard deviation of 0.753 was below the composite standard deviation of 0.845 implying that opinions converged.

Statement CP-16, that majority of the respondents agreed that the completed road sections have helped to substantially reduce travel time, as shown by 119(55.6%) of the respondents who strongly agreed with the statement, 84(39.3%) agreed and 10(4.7%) were neutral while 1(0.5%) of the respondents strongly disagreed with the statement. The mean was 4.50 above the composite mean of 4.10. These results imply completion of sections of the roads helped substantially to reduce travel time. This is an indication that the road was benefitting the road users and the community at large in line with the goals and objectives of the projects. Other factors affecting travel time may need to be checked and rectified in the future to enhance road completion. Obtained on this statement was a standard deviation was 0.611 below the composite standard deviation of 0.845 implying that there was convergence in opinions.

Statement CP-17, 109(50.9%) of the respondents strongly agreed and 87(40.7%) agreed that the value of the land in the area has increased. Only 16(7.5%) were neutral and 1(0.5%) disagreed while 1(0.5%) of the respondents strongly disagreed with the statement. The mean was 4.41 above the composite mean of 4.10 implying that most of the respondents strongly agreed that value of the land in the area has increased due to implementation of the road projects. This indeed proves that road infrastructure has immense contribution to household's economic development and that the demand for land for development purposes has increased. A standard deviation of 0.691 below the composite standard (0.845) deviation is an indication that opinions were consistent.

Statement CP-18, that the area has attracted new commercial investments, 123(57.5%) of the respondents strongly agreed and 72(33.6%) agreed with the statement that the area has attracted new commercial investments, while only 17(7.9%) were neutral and 2(0.9%) of the respondents disagreed with the statement. The mean score was 4.48 above the composite mean which was 4.10. The results imply that there was a strong agreement among most of the respondents that the area has attracted new commercial investments after the implementation of the road project in the area. Therefore, to be able to urbanize parts of rural areas, there is need to heavily invest in road infrastructure. A standard deviation of 0.683 was below the composite standard deviation of 0.845, indicating convergence in opinions.

Statement CP-19, that the Matatu fares have reduced substantially, 102(47.7%) of the respondents strongly agreed with the statement, 73(34.1%) agreed, 20(9.3%) were neutral and 18(8.4%) disagreed while 1(0.5%) of the respondents strongly disagreed with the statement. The mean was 4.20 above the composite of 4.10 implying that most of the respondents were in agreement that Matatu fares have reduced substantially. This further indicates that the stakeholder requirements were fulfilled and the community within the area benefitted while the project goals and objectives were fulfilled. The analysis revealed a standard deviation was 0.955 above the composite standard deviation of 0.845, hence divergence in opinions.

Statement CP-20, that adequate safety facilities for pedestrians were provided, 117(54.7%) of the respondents strongly agreed with the statement, 79(36.9%) agreed, 9(4.2%) were neutral, 5(2.3%) strongly disagreed while 4(1.9%) of the respondents disagreed with the statement. The mean score was 4.40 above the composite mean of 4.10 indicating that contractors for road construction provided pedestrians with safety facilities. Hence, there is need for contractors to put in more effort and keenness to ensure safety measures are well adhered to, with an aim of enhancing safety of pedestrians and motorists during road construction. A standard deviation of 0.848 was above the composite standard deviation of 0.845 implying that opinions were slightly divergent.

4.5.2 Qualitative Information of Completion Urban Roads Transport Infrastructure Projects

The views of the respondents were validated through the qualitative answers they gave when they were asked to provide information on the challenges they faced in their effort to meet the time, cost and quality aspects of the projects they were involved in. The findings were as shown in Table 4.11.

Table 4.11: Whether Respondents Faced Challenges in Completion of Roads

	Frequency	Percent
Yes	196	91.6
No	18	8.4
Total	**214**	**100.0**

Results from Table 4.11 indicates that most of the respondents (91.6%) had faced challenge(s) in their effort to meet time, cost and quality aspects of the projects they were involved in. The respondents indicated those challenges to be lack of materials supply, inadequate funds, inappropriate model split, delays from land acquisition process, collision with the flow of traffic, inexperienced project team members , interruption of water supply and electricity, fluctuation of the prices of the material, delay in payments to the contractors, variation in the timelines, the funds for the project were not released on time and relocating the service lines like water and electricity was delayed. The other challenges indicated by the respondents were; delay by about 64% which was caused by late relocation of services structures, relocation of graves, late payment, land acquisition and delays in approval of consultant's recommendations sent to the engineer, high turnover of laborers due to late payment, increased quantities /delayed payments, conflict with the community during demolition of structures and houses occupying the public or government reserved lands, long period of disbursing funds, poor coordination with the service providers, loss of staff due to injuries or illnesses, lack of consensus between the various stakeholders, increase in the cost of fuel and materials, inadequate machinery equipment, poor design on the time schedule as to when the project will end. Poor financial supply, inappropriate modal split, poor planning of the funds towards the project and low resource mobilization were the other challenges.

The respondents were also asked if the project schedule was delayed and if so to please indicate the difference between the planned progress and actual progress and by what percentage of time it was delayed. They indicated that the difference between the planned progress and actual progress ranged from 0.5 months to 8 months. The respondents also indicated that project schedule was delayed by an average of 28%, while the percentage increase in cost to the projects was an average of 45%.

When requested to indicate what factors led to the additional cost, the respondents indicated extra works added later during the project, delay in payments by client which attracted an interest cost, laxity with contractors, land acquisition process, relocation of service line, designs challenges, climatic condition like heavy rains or dry spell leading scarcity of construction water, contractor mobilization, shortage in materials for construction, social conflicts, poor estimate of quantities, design change, compensation of land owners and geological nature of the soils where unforeseen rock excavation caused additional cost to the project.

When opinion was sought from the respondents about which factors that contribute to poor completion of urban roads, the respondents said lack of control over time and cost inputs, weather conditions (rainy seasons), poor coordination between stakeholders, uncompetitive remuneration to the project team due to low synergy, contractor failure to perform where all resources are available but the contractor fails to perform, changes in construction programmes, mismanagement of project resources, lack of adequate, incompetence of contractors, relocation utilities lines, evacuation of the informal settlers, inadequate materials for construction, availability of finances, encroachment of the road reserve, contractors site management style, inadequate construction corridor, land acquisition and encroachment. The respondents also said that insufficient design or feasibility studies before tendering process that lead to delays during implementation because of unrealistic completion timelines that are set for the project.

In addition, responses from interviews of the key informants seems to support the quantitative findings. When asked about the phase of the project at which Land commission officials are requested to commence the process of land acquisition for construction of urban roads projects, the land officials had some varied answers. Some said at the initiation stage when the project plans are being conceptualized, during mapping, some said after completion of designs, while most of them indicated the construction stage. National Land commission official(NLC) NLC-1, said;

> *"We were requested to commence the process of land acquisition for construction of roads projects after completion of surveying, mapping and after acquisition plans were drawn, and mostly after all persons to be affected are identified."*

NLC-2 said;

> *"We usually carry out this exercise at the construction stage, when we are sure of funding from the road authorizes, since funds are needed for the payment of compensation. Do you believe that they also even come running to us to start the compensation process when the contractors are already on site, ignoring that land acquisition process needs its own time to be effectively addressed".*

The commission officials further noted that there is need for proper resettlement of the land owner to avoid squatters; the land owners should usually be notified in time to avoid conflicts and hindrances to enable smooth project completion. It was particularly noted that the process of land acquisition should be as peaceful and effective as possible to avoid protests or even future interruptions on the projects and compensation to the landowners should be just and fair to avoid complaints that may result in delays on the process of land acquisition and project implementation.

Further interviews were conducted with other complimentary service providers. In this case, the KPLC officials were requested to indicate their opinion on how the process of relocation of service lines affects roads projects construction. Majority of the officials said that it was just before commencement of the construction, when in a meeting with the key stakeholders that the agency is often instructed to relocate facilities without being given adequate time for preparation to undertake the activities. KPLC-1 official said,

> *"I was requested to commence the process of removal and relocation of service lines to pave way for construction of outer ring road, after mobilization of the contractor".*

KPLC-2 official said,

> *"We are mostly asked to commence the process of removal and relocation of service lines for construction of roads immediately after the design is completed and after it has received approvals from all the concerned authorities. However, the request is usually not followed prompt payment of our relocation cost which intends leads further delays in project and also trigger some external socioeconomic cost the public".*

When project beneficiaries, through representatives of resident associations asked to indicate their opinions on level of their satisfaction the completed roads projects. Most of the respondents indicated that the benefit of the completed road projects has enhance the value of their land parcels within the area, decrease in insecurity, easy transportation, and creation of employment among the youth of the area, who are employed by the contractors. Various representatives of PAPs had different opinions:

> LandOwner-1 said that, *"Good roads always come with a boost in the economic growth and that means I stand to benefit in the process as a business owner*," while KARA-1 said that, *"As a business owner, transporting my products from the place of purchase to my business premises and also to customers will be enhanced and made easier. Also the traffic jams will be reduced and that means faster travel to and from any destination"*

Also, most of the Matatu SACCO representative said that fares have dropped as a result of the completion of the roads:

> *SACCORep-1 said that, "Yes, the fares were affected because they dropped by almost 50% whereby there is not much profit made by the car owners instead appears to be helping the residents with transportation mode". SACCORep-2 said, "Fares significantly dropped. Sometimes fares used to hit the Ksh.70 mark but that has reduced to Ksh.30 for the same trip. That is more than a 50% drop in the fares which is good for the passengers" Further SACCORep-3 said, "Fares were also forced to decrease since vehicles along this route increased in number just because the road was now in good condition for vehicles to drive on. Also new entrance like tuk-tuk also affected the fares since they could now use the route due to road being smooth for their low – belly tuk-tuk".*
>
> SACCORep-4 stated that *"Yes, the vehicle maintenance costs reduced by almost 80% because the road is much smoother, there is no frequent breakdown as before and also the time taken to take people to their specific destination is short hence the vehicles make at least a profit".* SACCORep-5 said, *"The vehicle operating costs reduced drastically because the roads* are in good condition and the vehicles hardly get damaged like before, so, the vehicles do not spend much money going to garages for repair as before". Moreover, SACCORep-6 said, "The operating cost has reduced which is good for the business. The roads are now in good condition and this means that vehicles don't break down more often like before when the roads had potholes and were bumpy".

> In terms of time saving, SACCORep-7 said that, “The time taken to take people from one destination to another has reduced from one hour to almost 15 min during normal hours and 30 min during pick hours”. Another one said, “The time taken from one destination to another has really reduced whereby ferrying people from one destination takes us less time than before we used to take one hour and now we just take 20 minutes”. Further, In terms of time saving, SACCORep-8 said that, “To some extent, time has been saved in that on highways the vehicles move faster unlike before the roads were expanded. But also when you are in the town, there is a lot of traffic due to the construction of those small bumps which makes vehicles to slow down thus creating unnecessary traffic.”

4.5.3 Discussion of Findings of Completion of Urban Roads Trasport Infrastructure Projects

The results presented reveal that the expectations of the stakeholders were met such that travel time had reduced, the selling price or value of the land within where the road is built has also gone up, new commercial investments have been established, reduced fares and adequate safety facilities were put in place (Statements CP-16, CP-17, CP-18, CP-19, CP-20). These are indicators that the roads projects achieved the KPIs as outlined by Sharmas et.al (2010). However, the completion of the road projects was not successfully done without some issues emerging in the process. It was found that there were problems between the stakeholders in respect to relocation of existing service lines (power, water, sewer, data, telephone) as also confirmed by reports of Achuka (2016), Nyarangi (2019), Mulyungi (2019) and Sandard Digital (2019). There is therefore need to improve collaboration and partnership between all the stakeholders in the future projects so as to enhance project performance as far as completion is concerned (Ericksson, 2010; Barclay & Osei-Bryson, 2010).

Although the road projects achieved stakeholder satisfaction, there were issues around project variations in terms of scope of work, designs ommissions (Statements CP-07, Cp-10). These were also noted by Achuka (2017) and Ngige (2014) whereby the County government of Nyeri and KURA engaged in a tag of war over construction of footpaths, whereas in Nairobi, Taj Mall stalled construction of Eastern ByPass thus affecting the original design, respectively. This clearly shows there was poor communication among the stakeholders involved, something Basu (2013) warns that it can be a concern to project leaders. The results on poor monitoring of project activities (Statement CP-08), contradicts Ndunda et.al (2017) quality roads were achieved through continuous inspection of the road projects. This implies that there are some contractors or project managers who are keen and committed to doing their duty in some parts of the Counties hence need to improve on this aspect to ensure project completed are all within expected standards.

4.6 Stakeholder Participation in Project Initiation and Completion of Urban Road Transport Infrastructure Projects

This section dealt with objective one of the study which sought to assess how stakeholder participation in project initiation influences the completion of urban road transport infrastructure projects in Kenya.

4.6.1 Descriptive Analysis of Stakeholder participation in Project Initiation and Completion of Urban Road Transport Infrastructure Projects

Participation in project initiation was assessed by stakeholder identification in; setting of goals and objectives, stakeholder identification, feasibility studies and needs assessment. To obtain the required data, the respondents were asked to indicate the level of agreement with various statements in relation to stakeholder identification. The statements were based on a 5 point Likert scale ranging from 5=Strongly Agree (SA), 4=Agree (A), 3 =Neutral (N), 2=Disagree (D) and 1=Strongly Disagree (SD). The results are as tabulated in Table 4.12.

Table 4.12: Stakeholder Participation in Project Initiation and Completion of Urban Road Transport Infrastructure Projects

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean %	SD	Total F (%)
Stakeholder Identification								
I-01 Stakeholders identification was carried out during project initiation phase	0 (0%)	3 (1.4%)	10 (4.7%)	76 (35.5%)	125 (58.4%)	4.13	0.774	214 (100)
I-02 The stakeholders were engaged through letters, email, advertisement in local dailies.	1 (0.5%)	9 (4.2%)	25 (11.7%)	96 (44.9%)	83 (38.8%)	4.07	0.859	214 (100)
I-03 The county government was identified as a vital stakeholder to the project.	5 (2.3%)	23 (10.7%)	22 (10.3%)	77 (36.0%)	87 (40.7%)	4.39	0.624	214 (100)
I-04 Stakeholders interest, power and influence was analyzed to assist in establishing how to manage them.	3 (1.4%)	13 (6.1%)	34 (15.9%)	100 (46.7%)	64 (29.9%)	4.03	0.850	214 (100)
I-05 The community was considered as vital stakeholder to the success of the project.	11 (5.1%)	13 (6.1%)	18 (8.4%)	71 (33.2%)	101 (47.2%)	2.50	1.001	214 (100)
Sub-Composite mean and standard deviation						3.82	0.822	
Setting Goals and Objectives								

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean %	SD	Total F (%)
I-06 The project planning team consulted the community in setting of the project goals during project initiation phase	109 (49.1%)	75 (35.0%)	29 (13.6%)	5 (2.3%)	0 (0.0%)	1.69	0.792	214 (100)
I-07 Only the key stakeholders were consulted in setting of the project objectives during project initiation phase	84 (39.3%)	63 (29.4%)	41 (19.2%)	17 (7.9%)	9 (4.2%)	2.08	1.131	214 (100)
I-08 Project planning team took views of the community along the project roads into consideration in setting of goals and objectives	34 (15.9%)	118 (55.1%)	13 (6.1%)	34 (15.9%)	15 (7.0%)	2.43	1.143	214 (100)
I-09 Contribution of project team members was considered and taken on board	3 (1.4%)	22 (10.3%)	20 (9.3%)	66 (30.8%)	103 (48.1%)	4.14	1.048	214 (100)
I-10 The project team prepared a realistic timeframe for completing the project goals.	3 (1.4%)	3 (1.4%)	26 (12.1%)	99 (46.3%)	83 (38.8%)	4.20	0.810	214 (100)
Sub-Composite mean and standard deviation						2.91	0.985	
Feasibility Studies								
I-11 Traffic surveys were carried out to determine the capacity of the road	6 (2.8%)	7 (3.3%)	28 (13.1%)	94 (43.9%)	79 (36.9%)	4.09	0.938	214 (100)
I-12 Consultative meetings involved the community who had an input in establishing the scope of the project based on available funds.	45 (21.0%)	104 (48.6%)	20 (9.3%)	40 (18.7%)	5 (2.3%)	2.33	1.077	214 (100)
I-13 The community and other stakeholders were involved in the consultative meetings for environmental and social impact assessment studies.	0 (0.0%)	0 (0.0%)	5 (2.3%)	56 (26.2%)	153 (71.5%)	4.69	0.511	214 (100)
I-14 Economic and Financial viability of the project was carried out by the client/consultant based on preliminary designs	0 (0.0%)	6 (2.8%)	36 (16.8%)	93 (43.5%)	79 (36.9%)	4.14	0.795	214 (100)
I-15 Utility service providers provided information on the location of service lines	5 (2.3%)	16 (7.5%)	21 (9.8%)	100 (46.7%)	72 (33.6%)	4.02	0.974	214 (100)
Sub-Composite mean and deviation						3.85	0.859	
Needs Assessment								
I-16 A needs assessment survey was carried out through interviews	47 (22.0%)	104 (48.6%)	34 (15.9%)	26 (12.1%)	3 (1.4%)	2.22	0.972	214 (100)

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean %	SD	Total F (%)
I-17 The community through their elected leaders identified the road project as a priority to improve their welfare.	1 (0.5%)	16 (7.5%)	23 (10.7%)	89 (41.6%)	85 (39.7%)	4.13	0.913	214 (100)
I-18 The project was selected by the government because the existing road was in poor condition	4 (1.9%)	15 (7.0%)	33 (15.4%)	82 (38.3%)	80 (37.4%)	4.02	0.990	214 (100)
I-19 Involvement of the community in needs assessment surveys is important in ensuring their ownership of the project.	0 (0.0%)	8 (3.7%)	26 (12.1%)	90 (42.1%)	90 (42.1%)	4.22	0.803	214 (100)
I-20 the community knew about the road project before they saw the construction equipment being brought to site by the contractor.	80 (37.4%)	48 (22.4%)	31 (14.5%)	30 (14.0%)	25 (11.7%)	2.40	1.407	214 (100)
Sub-Composite mean and standard deviation						3.40	1.017	
Composite Mean and Standard deviation						**3.50**	**0.921**	

The results in Table 4.12 show that a composite mean and standard deviation were computed whereby a line item mean and standard deviation were used for comparison. On one hand, where the line item was found to be lower than the composite mean, the statement or the item influenced the outcome negatively. On the other hand, a lower standard deviation to the composite standard deviation was an indication that the responses were convergent or consistent and vise-versa.

Statement I-01, responses revealed that 125(58.4%) and 76(35.5%) of the respondents agreed and strongly agreed respectively that stakeholder identification was carried out during project initiation phase while 10(4.7%) and 3(1.4%) were neutral and disagreed respectively. The mean was 4.13 above the composite mean of 3.50. The results indicate that majority of the respondents strongly agreed that stakeholder's identification was carried out during project initiation phase and this would positively influence the completion of urban road transport infrastructure projects. This implies that the projrct implementation team were conversant with the need for stakeholder participation and ensured identification of key stakeholders. Obtained was a standard deviation of 0.774 less than the composite mean of 0.921 hence opinions converged on this statement.

Statement I-02, the stakeholders were engaged through letters, email, advertisement in local daily's, 96(44.9%) indicated agreement, 83(38.8%) indicated disagreement, 25(11.7%)

indicated neutral, 9(4.2%) indicated agreement while 1(0.5%) indicated strong disagreement. The mean was 4.07 higher than the composite mean of 3.50. The results indicated respondents agreed that the stakeholders were engaged through letters, email, advertisement in local daily's and this would positively influence the overall ssuccessful completion of urban road transport infrastructure projects. The use of mass media is important in reaching out to many stakeholders who are not only supposed to participate and give their views on how the road construction should take place but also support the road projects. The standard deviation was 0.859 below the composite standard deviation of 0.921 meaning the opinions converged.

Statement I-03, the county government was identified as a vital stakeholder to the project 87(40.7%) respondents indicated strong agreement, 77(36%) indicated agreement, 23(10.7%) indicated disagreement, 22(10.3%) indicate neutral while 2.3% indicated strong disagreement. The mean score was 4.39 above the composite mean of 3.50. The results indicated identification of the county government as vital stakeholder to the project positively influenced the overall completion of urban road transport projects. This was necessary since the government is the major stakeholder in infrastructural development of the country and grants a bigger share in construction of roads. The standard deviation was 0.624 below the composite standard deviation of 0.921 hence opinions were consistent.

Statement I-04, stakeholders' interest, power and influence was analyzed to assist in establishing how to manage them 100(46.7%) indicated agreement, 64(29.9%) indicated strong disagreement, 34(15.9%) indicated neutral, 13(6.1%) indicated disagreement and 3(1.4%) indicated strong disagreement. The mean was 4.03 above the composite mean of 3.50 hence the findings indicates many respondents agreed that stakeholders' interest, power and influence was analyzed to assist in establishing how to manage them and this would positively influence the overall completion of urban road transport infrastructure projects. This was necessary in order to determine how to manage and deal with each stakeholder to ensure smooth running of the projects and to manage risks that could emanate from the stakeholders. Obtained on this statement was a standard deviation 0.850 above the composite standard deviation implying that the respondent's views diverged.

Statement I-05, the community was considered as vital to the success of the project, 101(47.2%) respondents indicated strong agreement, 71(33.2%) indicated agreement, 18(8.4%) indicate neutral, 13(6.1%) indicated disagreement and 11(5.1%) indicated strong disagreement. The mean was 2.50 below the composite mean of 3.50 implying that community was not considered vital to the success of the project and this eventually would negatively influence the overall completion of urban road transport infrastructure projects. This further implies that road projects are likely to take longer than expected in terms of completion time. The good practice demands that community members are important stakeholders that should be involved to ensure projects are on course during implementation and hence completion. The standard deviation was 1.000 was higher than 0.921 the composite standard deviation therefore this conclusion drawn was that opinions diverged.

Statement I-06, the project planning team consulted the community in setting of the project goals during project initiation phase, none strongly agreed, five (2.3%) agreed, 29(13.6%) indicated neutral position, 109(49.1%) of respondents indicated strong disagreement and 75(35%) indicated disagreement. The mean score was 1.69 below the composite mean of 3.50 indicating that the community were not consulted during project initiation phase, and as a result, they did not contribute in setting up of project goals and objectives. In the future, it would be important to consult with the community members or stakeholders to promote ownership and engagement in implementation of the project. The standard deviation obtained was 0.792 below the composite standard deviation of 0.921 implying that opinions from the respondents were converging.

Statement 1-07, that only key stakeholders were consulted in setting of the project objectives during project initiation phase, nine (4.2%) of the respondents strongly agreed, 17(7.9%) agreed, 41(19.2%) were neutral, 63(29.4%) indicated disagreement and 84(39.3%) indicated strong disagreement that only the key stakeholders were consulted. A lower mean score of 2.08, which was below 3.50 the composite mean indicated that not only the key stakeholders were consulted in setting of the project objectives during project initiation phase, implying that the community may have also been consulted. Although too much stakeholder engagement is not acceptable, relying on only the key ones may not be important because it could result to unnecessary derailment in implementation of the project. The standard deviation was 1.131 rather higher than the sub-composite standard deviation of 0.921 implying that opinions diverged.

Statement I-08, project planning team took views of the community along the project roads into consideration in setting of goals and objectives, 15(7.0%) strongly agreed, 34(15.9%) agreed, 13(6.1) were neutral, 118(55.1%) indicated disagreement and 34(15.9%) indicated strong disagreement. The mean score on this statement was 2.43 below the sub-composite mean of 2.91 implying that the views of the community along the project roads were not taken into consideration in setting goals and objectives. Collection of the views of the community members should be embraced more to ensure what the project team wished to accomplish is out of the aspirations of the community members or the beneficiaries of the project. A higher standard deviation of 1.143 obtained was above the sub-composite standard deviation of 0.985 hence opinions were not consistent.

Statement I-09, contribution of project team was considered and taken on board, 103(48.1%) indicated strong agreement, 66(30.8%) indicated agreement, 20(19.3%) were neutral, 22(10.3%) disagreed, 3(1.4%). A higher mean score of 4.14 and a composite mean of 3.50 were obtained implying that project team's contributions were taken on board, hence enhanced project completion whereby the goals set must have been agreed upon specific, measurable, attainable, realistic and team bound. A higher standard deviation of 1.048 above the composite standard deviation of 0.921 was obtained implying divergence in opinions gathered.

Statement I-10, the project team prepared a realistic timeframe for completing the project goals, 83(38.8%) indicated strong agreement, 99(46.3%) indicated agreement, 26(12.1%). 3(1.4%) were in disagreement and 3(1.4%) strongly disagreed. The mean score of the statement was 4.20 higher than the composite mean of 3.50 implying that the project team prepared a realistic timeframe for completing the project goals hence project completion. This implies that despite the community not being involved in setting goals and objectives the project team during initiation phase of the project lifecycle management, the project team was able to prepare a realistic time frame for the project because their contribution was taken on board. The standard deviation on this statement was 0.810 below the composite standard deviation of 0.921 hence opinions converged.

Statement I-11, traffic surveys were carried out to determine the capacity of the road, 79(36.9%) of respondents indicated strong agreement, 94(43.9%) indicated agreement, 28(13.1%) indicated neutral, 6(2.8%) indicated strong disagreement and 7(3.3%) indicated disagreement. The mean score of the statement was 4.09 above the sub-composite mean of 3.85 implying that traffic surveys were carried out to determine the capacity of the road hence positive influence on the overall completion of urban road transport infrastructure projects.

The standard deviation was 0.938 slightly above the sub-composite standard deviation of 0.859 showing that opinions diverged.

Statement I-12, Consultative meetings involved the community who had an input in establishing the scope of the project based on available funds, 104(48.6%) indicated disagreement, 45(21%) indicated strong disagreement, 40(18.7%) indicated agreement, 20(9.3%) indicated neutral, 5(2.3%) indicated strong agreement. The mean score was 2.32 below the composite mean of 3.50 implying that respondents disagreed that they were involved in consultative meetings where the community had an input in establishing the scope of the project based on available funds and this would negatively influence the overall completion of urban road transport infrastructure projects. This implies that the community was not involved in establishing the scope of works based on available funds. It is important for the community to participate in establishing the scope of works since they have a better understanding of the priority sections of the road network for upgrading to bitumen standards. The standard deviation obtained was 1.077 above the composite standard deviation of 0.921 implying that opinions were inconsistent.

Statement I-13, the community and other stakeholders were involved in the consultative meetings for environmental and social impact assessment studies, 153(71.5%) indicated strong agreement, 56(26.2%) indicated agreement, 5(2.3%) indicated neutral. The mean was 4.69 higher than the composite of 3.50, implying that the community and other stakeholders were involved in the consultative meetings for environmental and social impact assessment studies and this would positively influence the overall completion of urban road transport infrastructure projects. Participation of stakeholders in ESIA is critical in ensuring that a comprehensive solution of all environmental and social challenges are discussed with the environmentalists and sociologists. A standard deviation of 0.511 obtained was below the composite standard deviation of 0.921 implying convergence in opinions.

Statement I-14, economic and financial viability of the project was carried out by the client/consultant based on preliminary designs, 93(43.5%) indicated agreement, 79(36.9%) indicated strong agreement, 36(16.8%) indicated neutral and 6(2.8%) indicated disagreement. The mean was 4.14 above the composite mean of 3.50 implying that economic and financial viability of the project was carried out by the client or consultant based on preliminary designs and this would positively influence the overall completion of urban road transport infrastructure projects. The standard deviation was 0.795 below the composite standard deviation of 0.921 hence opinions converged.

Statement I-15, utility service providers provided information on the location of service lines, 100(46.7%) indicated agreement, 72(33.6%) indicated strong agreement, 21(9.8%) indicated neutral, 16(7.5%) indicated disagreement and 5(2.3%) indicated strong disagreement. The mean scored was 4.02 above the composite mean of 3.50 implying that utility service providers provided information on the location of service lines and this would positively influence the overall completion of urban road transport infrastructure projects. The standard deviation was 0.974 above the composite standard deviation of 0.921 suggesting that opinions did diverge.

Statement I-16, a needs assessment survey was carried out through interviews, 104(48.6%) indicated disagreement, 47(22%) indicated strong disagreement, 34(15.9%) indicated neutral while 26(12.1%) indicated agreement and 3(1.4%) indicated strong agreement. The mean was 2.22 below the composite of 3.50 implying that a needs assessment survey was not carried out through interviews. This is also to mean that the views of the stakeholders including the community members may have not been adequately established. This therefore had a negative influence on the completion of urban road transport infrastructure projects. It is therefore important to ensure future road projects should conduct needs assessments that focus personal opinions of the direct beneficiaries of the project (qualitative views). This would enable to gather sufficient information from the stakeholders, specifically through interviews, to inform what needs to be done through quality decision making on what needs to be done. The standard deviation was 0.972 was above the composite standard deviation of 0.921 hence opinions diverged on this statement.

Statement I-17, the community through their elected leaders identified the road project as a priority to improve their welfare, 89(41.6%) indicated agreement, 85(39.7%) indicated strong agreement, 16(7.5%) indicated disagreement, and 23(10.7%) indicated neutral while 1(0.5%) indicated strong disagreement. The mean was 4.13 above the composite mean of 3.50 implying that the community through their elected leaders identified the road project as a priority to improve their welfare and this would positively influence the overall completion of urban road transport infrastructural projects. Obtained on this statement was a standard deviation was 0.913 rather lower than the composite standard deviation of 0.921 suggesting that opinions were consistent on this statement.

Statement I-18, the project was selected by the government because the existing road was in poor condition, 82(38.3%) indicated agreement, 80(37.4%) indicated strong agreement, 15(7.0%) indicated disagreement, and 33(15.4%) indicated neutral while 4(1.9%) indicated strong disagreement. A mean score of 4.02 obtained on this statement was higher than the composite mean of 3.50 implying that the projects were selected by the government because the existing road was in poor condition. A standard deviation of 0.990 above the composite deviation of 0.921 indicated inconsistency in opinions.

Statement I-19, involvement of the community in needs assessment surveys is important in ensuring their ownership of the project, 90(42.1%) indicated agreement, 90(42.1%) indicated strong agreement, 8(3.7%) indicated disagreement 26(12.1%) indicated neutral while 0(0.0%) indicated strong disagreement. A mean score of 4.22 was above the composite of 3.50 which implied that involvement of the community in needs assessment surveys is important in ensuring their ownership of the project hence positive influence on the completion of urban road transport infrastructure projects. A lower standard deviation on the statement was recorded which was 0.803 while the composite was 0.921 an indication that opinions were converging.

Statement 1-20, the community knew about the road project before they saw the construction equipment being brought to site by the contractor, 80(37.4%) indicated strong disagreement, 48(22.4%) indicated disagreement, 31(14.5%) indicated neutral, 30(14%) indicated agreement, 25(11.7%) indicated strong agreement. The mean score was 2.40 below the composite mean of 3.50 which refuted the claim and this implies that the community did not actually know about the road project before the construction equipment had been brought to site by the contractor and this would negatively influence the completion of urban road transport infrastructure projects. Involvement of community members in early stages of design remains crucial to avoid any apathy. A standard deviation of 1.407 recorded was above the composite standard deviation of 0.921 suggesting that opinions diverged.

4.6.2 Qualitative Information of Stakeholder Participation in Project Initiation and Completion of Urban Roads Transport Infrastructure

For the purpose of obtaining in depth information from the respondents on this variable understudy, this study obtained in-depth information through opened ended questions and interview guide. For instance, the respondents were asked to indicate whether they believed that participation in project initiation phase can improve Completion of urban road projects. The findings were as illustrated in Table 4.13.

Table 4.13: Participation in Project Initiation Phase

Responses	Frequency	Percent
Yes	202	94.4
No	12	5.6
Total	**214**	**100.0**

The results in Table 4.13, the respondents believed that participation in project initiation phase can improve completion of urban road projects as shown by 94.4% of the respondents. Asked why they believed so, they stated that participation in project initiation phase can improve completion of urban road project by elimination of pre-audits and lead to proper financial supply.

Further, all agreements made in that phase eliminated chances of disagreements during implementation and that their participation may lead to a clear establishment on the project scope which is essential for project completion. The respondents also indicated that stakeholder participation in the initiation phase of the project can help in establishing a clear working path to pursue the project goals and objectives and can be involved in reviewing the process to identify critical steps that are missed that may influence the project. The respondents also indicated that participation in project initiation can improve completion of urban road projects by, helping in faster identification of their ranks, documentations validation and approval to avoid taking too much time in that stage which can be used for other activities. Moreover, participatory processes are needed that bring together technical expertise, national thinking, public values and community preferences for better projects initiation outcomes. Further it can bring together community leaders along the location of the road, the business economic community in the area, the road financiers, the local national government leadership, the utility providers including other stakeholders who play a role in the economic activities within the locality.

The respondents also indicated that participation in project initiation phase can improve completion of urban road projects since it helps in knowing the challenges encountered when doing the project, contributes in the setting of the project goals, helps in the cooperation of identifying and controlling external risk, helps in creating the norm where all the stakeholders work together to shape the project, it ensures absolute compliance by all stakeholders and eliminates unnecessary delays in execution of road works.

It also ensures that the road project serves the majority of the stakeholders, therefore smoothness during project cycle, it helps in providing enough corridor since most of the time there are encroachments along the project road and also educate the locals on the importance and value of the project. The respondents also indicated that participation in project initiation phase can improve completion of urban road projects since it leads to designing of road projects that suit the needs and interest of stakeholders thus it gains all support and help in laying emphasis on combining assessment and dialogue which will build trust and instill a sense of inclusivity thus embracing the process.

The respondents were further requested to give an opinion on the critical stakeholders who contributes effectively to successful project completion. The respondents indicated that the critical stakeholders who contributed effectively to successful project completion in the initiation stage, in the projects they have been involved in, were members of the community, investors, county/national government, land owners, national land commission, the consultants, business owners, contractors, designers, surveyors and client representatives, the project manager, institutions in the area, for example hospitals, schools, NEMA , the engineers, local administration, government MDAs and utility providers.

The respondents were asked to share their opinion on the extent of stakeholder participation in the initiation phase of the projects that they have ever been involved in. Majority of the participants were neutral, while a few of them disagree on adequacy of participation. The respondents further indicated that stakeholder have inadequately participated in optimal decision making, designs and requirements that suit their needs at the initial stages; especially during the feasibility studies of the project and planned project activities.This went against Aken (2017) who noted that initiation phase offers stakeholders an opportunity to identify and prioritize needs and also identify possible sources of problems. As KPLC-4 said that;

> *"most of us were not consulted when some of these important were being initiated and for which we could not make meaningful suggestion that could have added value to the purpose of the projects. Our institution was only requested information on our major service lines"*

NLC-4 said that;

> *We are not usually adequately involved at that stage. The project implementers will only call on us when there are disagreements and*

conflicts from the land owners as a result of the project, and this situation often tend bring abnormal increases in land values due to activities of land speculators. This at times lead to undue projects cost and major delays in completion of road projects".

SACCO Rep-9 said,

"No, we were never involved and we don't know how the decision were arrived at on the location of bus stops and points of foot bridges were located because they are not serving us properly."

Other challenges observed by the interviewees were lack of long-term strategic plans, improper implementation of practices to embrace stakeholders' interest, demands by local residents to have some of them employed in the unskilled and semi- skilled labour sections during relocation or installation of transmission lines and lack of cooperation from the two authorities that is the Roads authority and KPLC. If the land owners are affected by the process, the company (KPLC) is affected in its supplies system.

Also, the land commission officials said that the challenges they faced in the land acquisition to facilitate road construction projects in Kenya were lack of sufficient funds for compensation especially where the government is the payer, poor coordination among different government agencies involved makes the process long and boring, poor coordination among government agencies brings about difficulties in identifying the affected persons, entitlements and assessment of assets for compensation to be paid thus causing delays in compensation, lack of government policies of resettling the affected persons which may bring about a hostile atmosphere by the victims seeking justice, insufficient compensation may lead to complaints and resistance by the affected persons and compulsory land acquisition in most cases results to distress, objection and violence in many parts of the country. Other challenges stated by land commission officials were; incitement by politicians to the locals land owners to reject and oppose development projects where they want to achieve personal political advantage over rivals, lack of professional land valuers who are trained on the environmental impact assessment which makes the process even more challenging, inadequate information since environmental assessment reports are not exhaustively carried out prior to the commencement of the acquisition process.

When asked about the challenges they faced in the process of land acquisition and or relocation of service lines to facilitate road construction, most of the PAPs said that they had to close their businesses hence experienced loses; loss of customers, land located far from the road and there is a lot of dust and it is affecting their health. This is an indication that land acquisition for projects posed a lot of challenges. For instance, several PAPs had a lot to narrate on, that:

> *KARA-3 said that, "I underwent a period of distress looking for an alternative way of earning some money after it became apparent that I couldn't operate by the roadside". KARA-4 said, "There were no ready places to relocate to and the process of moving the items was hectic. Also the building I had put up was demolished and the compensation did not give enough to put up such a building since the price for materials have increased."*
>
> *LandOwner-3 said that, "I was not notified about the commencement of the project on time. I just woke up on the shocking news of the destruction of my wall that covered my compound". LandOwner-4 said "I was not informed and the contractor was very rude he did not allow me to move my things away from destruction. They destroyed my belongings without even caring."*

When asked when they were notified to move out of the land to give way to the construction of the road, most of the affected persons said three months prior to the commencement and others were given one-month notice to sell the land. One of the PAPs, KARA-6 said that:

> *"The project team came and told me my bar was built on a road reserve and I had to relocate (demolish) the building". Another one said, "I was given a one-month notice which was too short that did not allow me to be prepared and move out and also the compensation was not done in that one month".*

When asked about the challenges they face in relocation of the service line for construction of urban roads, most of the officials of water companies said that leakage of sewer, customer's complaints, damages to pipes, unplanned cost of relocation and conflicts with service providers on utility tunnel. One of the water and sewarage company official, WASE-1, said

> *"One of the challenge I have ever faced in relocation of service line is that leakage in sewer lines may create a bad image of the company which may affect delivery of services to residents" WASE-2 said, "Among the challenges I have while relocating the services lines are complaints from the residents due to water supply being cut short and sewer lines leaking to the environment, lack of readily available service line conduits or routes to install our service lines, damage to the sewer line which caused havoc to the environment and this may also affect the residents around and unplanned costs of relocating the service lines also a challenge we face during such situations". WASE-3 said. "There are cases where we are not allowed to relocate our services lines to a road way –leave which also complicated relocation due to the legalities of such activities and assigning the right resource and organization to carry out the process and this led to late completion of the project."*

In effect, the findings from the qualitative and quantitative data and information indicate that there is a significantly strong and positive correlation between participation in project initiation and completion of urban road transport infrastructure projects. This therefore, justified the rationale for conducting this study mixed research method. It further shows project managers should as much as possible try to consult and engage the necessary key project stakeholders in the initial stages of road infrastructure projects in order to enhance their effective and efficient completion.

4.6.3 Correlation between Stakeholder Participation in Project Initiation and Completion of Urban Road Transport Infrastructure Projects

Analysis was carried out to establish the direction and magnitude of the relationship between the independent and dependent variables under investigation. This was in line with the first objective of this study, which was to assess how participation in project initiation influences completion of urban road transport infrastructure projects in Kenya. Participation in project initiation was measured by stakeholder identification, setting goals and objectives, feasibility studies and needs assessment while completion of urban roads transport infrastructure projects was measured by project completion within time, project completion within cost, project completion within quality and stakeholder satisfaction. Data was collected from the respondents on participation in project initiation variables and then the composite index on each of the participation in project initiation variable indicators (stakeholder identification, setting goals and objective, feasibility studies and needs assessment) was computed and used in the analysis. The results are presented in Table 4.14.

Table 4.14: Correlation between Stakeholder Participation in Project Initiation and Completion of Urban Road Transport Infrastructure Projects

Correlations

Variables		**Completion of urban road transport infrastructure projects**	**Stakeholder participation in project initiation**
Completion of urban road transport infrastructure projects	Pearson Correlation	1	0.859**
	Sig. (2-tailed)		0.015
	n	214	214
Stakeholder participation in project initiation	Pearson Correlation	0.859**	1
	Sig. (2-tailed)	0.015	
	n	214	214

**Correlation is significant at 0.05 level of significant (2-tailed)

Results in Table 4.14 indicate there was a strong correlation between the completion of urban road transport infrastructure projects and participation in project initiation (r=0.859) and the relationship was significant (p=0 .015<0.05).

4.6.4 Regression Analysis of Influence of Stakeholder Participation in Project Initiation on Completion of Urban Road Transport Infrastructure Projects

Linear regression analysis was further carried out to assess the extent to which participation in project initiation influences completion of urban road transport infrastructure projects in Kenya. In testing its hypothesis, likewise data was collected from the respondents on participation in project initiation variables and then the composite index for each of the project initiation variable indicators (stakeholder identification, goals and objective setting, feasibility studies and needs assessment) was computed and used in the analysis. The following hypothesis that was in line with objective one was formulated and tested.

Hypothesis Testing

The following hypothesis was tested using simple regression model to satisfy the first objectives.

1. **H_0:** Participation in project initiation does not significantly influence completion of urban road transport infrastructure projects in Kenya.

   H_1: There is a significant relationship between participation in project initiation and completion of urban road transport infrastructure projects in Kenya

Regression Model

The mathematical model used for testing the null hypothesis was as follows:

Completion of urban road transport infrastructure projects = f (Participation in project initiation)

$$Y = f(X_1, \varepsilon)$$

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon$$

Where

Y = Completion of urban road transport infrastructure projects

X_1 = Stakeholder participation in project initiation

β_0 = Constant term

β_1 = Beta coefficient

ε = Error term

Data was analyzed and the regression results for the influence of participation in project initiation on completion of urban road transport infrastructure projects in Kenya are presented in Table 4.15.

Table 4.15: Stakeholder Participation in Project Initiation and Completion of Urban Road Transport Infrastructure Projects

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.859	0.737	0.736	1.173

ANOVA						
	Model	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig**
1	Regression	818.029	1	818.029	594.869	.000
	Residual	291.53	212	1.375		
	Total	**1109.559**	**213**			

Regression Coefficients						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	0.897	0.198		4.530	.000
	Participation in project initiation	0.889	0.143	0.859	6.217	.000

Predictors: (constant), Stakeholder participation in project initiation
Dependent Variable: Completion of urban road transport infrastructure projects

Results in Table 4.15 show that r=0.859. This indicates that participation in project initiation has a strong relationship with completion of urban road transport infrastructure projects in Kenya. R^2 = 0.737 indicating that participation in project initiation explains 73.7% of the variations in the completion of urban road transport infrastructure projects in Kenya. The overall F statistics, (F = 594.869, p<0.000<0.05), indicated that there was a very statistical significant relationship between participation in project initiation and completion of urban road transport infrastructure projects in Kenya. The null hypothesis was therefore rejected and it was concluded that participation in project initiation significantly influences completion of urban road transport infrastructure projects in Kenya.

4.6.5 Discussion of Project Initiation and Completion if Urban Roads Transport Infrtastructure Projects

The findings established is that participation in project initiation significantly influences the completion of urban road transport infrastructure projects in Kenya. The findings support Wamugu and Ogollah (2017) that stakeholder participating in the initiation stage influences performance which was measured in terms of completion time, project scope and project cost. The current findings also show that community as part of stakeholders were not adequately involved in the initiation of the project whereby they did not participate in setting project goals and scope and neither their views were considered on the same (Statement I-05, I-06, I-07, I-08). This is in inconsistent with Dahan, Hauser and Kähkönen (2010) who noted that during project initiation emphasis must be given to idea generation, prioritization and project feasibility studies, screening, and selection. Moreover, initiation stage serves to generate decisions regarding project actors and implementers, stakeholders and whether the project has sufficient support are made. This indicates that stakeholders involvement in the road construction was not adequately observed, thus affecting other stages and consequently leading to delay in completion. Further, Dahan *et al.* state that during this phase, stakeholders conduct a needs analysis by identifying the needs and prioritizing them as well as identify the root causes of the problems. This was not equally observed during implementation of urban roads hence affecting the completion of road projects (Statement I-16). There is need, therefore, to enhance stakeholder involvement during initiation stage.

Kithinji and Kamaara (2017), however differs in the study on the influence of project initiation on the completion of Government road infrastructure projects in Kenya, a case of Meru County. The study found there was a negative correlation between project initiation and completion of Government road infrastructure projects in Meru County. This means that the significance of stakeholder involvement is contextual and their role will vary from project to project. However, Abowitz and Toole (2010) hold the view that initiation phase plays a significant role in projects life cycle management with respect to planning, execution and also determines the final result of the whole project. The qualitative views gathered from the respondents in the current study shows that there was participation of stakeholders in the initiation stage of the project which built the trust of the stakeholders. The findings resonate with Abdalla and Otieno (2017) study which found that stakeholder participation contributes to building trust and reduction of resistance to implementation of the projects by the local community members hence, improved relationships among stakeholders.

The quantitative results further showed that the community and other stakeholders were involved in the consultative meetings for environmental and social impact assessment studies. Stakeholders were also involved in determination of the capacity of the road including economic and financial viability of the project. They were however not involved in establishing the scope of the project based on available funds since this activity was reserved for the key stakeholders. This concurs with Amadi (2017) who notes that the whole community should be involved by allowing them to participate in the initiation and design phase of the project, to provide views on what they consider important including the operationalization or execution of the project. Albert (2014) argued that the initiation stage should include a plan that encompasses the following areas: analyzing the needs/requirements in measurable goals, reviewing of the current operations, financial analysis of the costs and benefits including a budget, stakeholder analysis, including users, and support personnel for the project, project charter including costs, tasks, deliverables, and schedule.

Another finding from the qualitative analysis was that the agency dealing with land acquisition for road expansion were not contacted early enough and neither were the land owners and squatters notified of the upcoming construction of the roads in good time. This supports the findings of Kamanga and Steyn (2013) and Inuwa, Saiva, and Alkizim (2014) who observed that community affected by the construction as their properties are along road reserve needs to be proclaimed and given notice in time during early stage of the planning; in addition, the extent to which they participate must be increased or improved. The current study affirms what Goodrum *et al.* (2009) found and recommended that systematic location of any facilities need to be carried out by ensuring not many utility lines are relocated and that mapping and collection of underground utility data to provide needed information.

Further the findings indicated that stakeholders dealing with power, water and other utility lines were not consulted at the initiation stage of road construction. This finding is in inconsistent with the study of Kamanga, and Steyn (2013) who observed that stakeholders for utilities in should be involved during the initial or planning stage of the project to coordinate and corporate with relocation of services to avoid delay that could have adverse effects on the completion of road projects . Lack or inadequate engagement of service line providers in early stages propagates late completion.

4.7 Stakeholder Participation in Project Planning and Completion of Urban Road Transport Infrastructure Projects

The study second objective was to assess how stakeholder participation in project planning influences the completion of urban road transport infrastructure projects in Kenya.

4.7.1 Descriptive Analysis for Stakeholder participation in Project planning and Completion of Urban Road Transport Infrastructure Projects

Stakeholder Participation in project planning was measured by indicators including; budgeting, resource planning, schedule of activities and scope planning. As a result, data was collected on each of the indicators and descriptively analyzed. The variable statements were measured using a 5 point Likert scale ranging from 5 = strongly agree, 4 = agree, 3 = Neutral, 2 = disagree and 1= strongly disagree. The findings are presented in Table 4.16.

Table 4.16: Stakeholder Participation in Project Planning and Completion of Urban Road Transport Infrastructure Projects

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev.	Total F (%)
Budgeting								
P-01 The community and other stakeholders were consulted during the budgeting process	47 (22.0%)	100 (46.7%)	35 (16.4%)	28 (13.1%)	4 (1.9%)	2.27	1.006	214 (100)
P-02 The client and land commission evaluated the cost of land acquisition and planned the related budget to reduce the associated risks during the design phase	46 (21.5%)	88 (41.1%)	62 (29.0%)	16 (7.5%)	2 (0.9%)	2.26	0.910	214 (100)
P-03 The client and the relevant service providers evaluated the cost and planned a budget for the removal and relocation of service lines to reduce risks.	43 (20.1)	100 (46.7)	41 (19.2)	27 (12.6)	3 (1.4)	2.29	0.973	214 (100)
P-04 Key stakeholders worked together with experts on cost estimates and budgeting process.	11 (5.1%)	32 (15.0%)	40 (18.7%)	75 (35.0%)	56 (26.2%)	3.63	1.172	214 (100)
P-05 There was a planned budget for environmental and social impacts studies and management during construction	0 (0.0)	9 (4.2)	32 (15.0)	96 (44.9)	77 (36.0)	4.14	0.815	214 (100)
Sub-Composite mean and standard deviation						2.91	0.975	
Resource Planning								
P-06 Key stakeholders gave their opinions on type and quantity of resources required for the project	3 (1.4%)	21 (9.8%)	39 (18.2%)	91 (42.5%)	60 (28.0%)	3.86	0.983	214 (100)
P-07 The client does not involve other stakeholders in sourcing of funding for the project	2 (0.9%)	18 (8.4%)	38 (17.8%)	59 (27.6%)	97 (45.3%)	4.08	1.025	214 (100)
P-08 The minimum quantity of construction machinery, tools and equipment required to deliver the project is estimated by the client/consultant	2 (0.9%)	13 (6.1%)	41 (19.2%)	91 (42.5%)	67 (31.3%)	3.97	0.914	214 (100)
P-09 Procurement of sub-contractors for the removal	7 (3.3%)	8 (3.7%)	37 (17.3%)	93 (43.5%)	69 (32.2%)	3.98	0.971	214 (100)

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev.	Total F (%)
and relocation of service lines was not carried out well in advance of start of construction								
P-10 Number and qualification of key personnel was established, and compiled into a project team during planning	0 (0.0%)	1 (0.5%)	33 (15.4%)	92 (43.0%)	88 (41.1%)	4.25	0.725	214 (100)
Sub-Composite mean and standard deviation						4.03	0.923	
Schedule of activities								
P-11 Stakeholders participate in establishing project deliverables	1 (0.5%)	16 (7.5%)	50 (23.4%)	85 (39.7%)	62 (29.0%)	3.89	0.926	214 (100)
P-12 Key stakeholders have the necessary qualification and experience in developing a Work Breakdown Structure for the project	3 (1.4%)	15 (7.0%)	29 (13.6%)	92 (43.0%)	75 (35.0%)	4.03	0.95	214 (100)
P-13 Activities for land acquisition are planned at this stage.	4 (1.9%)	6 (2.8%)	23 (10.7%)	102 (47.7%)	79 (36.9%)	4.15	0.859	214 (100)
P-14 Schedule of activities for relocation of service lines was prepared	2 (0.9%)	19 (8.9%)	37 (17.3%)	92 (43.0%)	64 (29.9%)	3.92	0.954	214 (100)
P-15 Programme of work was approved and signed off by stakeholders	5 (2.3%)	15 (7.0%)	31 (14.5%)	83 (38.8%)	80 (37.4%)	4.02	1.007	214 (100)
Sub-Composite mean and standard deviation						4.00	0.938	
Scope Planning								
P-16 Project beneficiaries are involved in clearly defining the scope of work	63 (29.4%)	71 (33.2%)	44 (20.6%)	26 (12.1%)	10 (4.7%)	2.29	1.152	214 (100)
P-17 The project scope is dependent on the amount of funds allocated to the project by the client and stakeholders have no input in decision making	1 (0.5%)	4 (1.9%)	36 (16.8%)	107 (50.0%)	66 (30.8%)	4.09	0.77	214 (100)
P-18The community request for adequate pedestrian walkways, zebra crossings and footbridges are taken into consideration by the client	70 (32.7)	49 (22.9)	30 (14)	43 (20.1)	22 (10.3)	2.52	1.390	214 (100)
P-19The scope of relocation of service lines is determined by relevant government agency based on information provided by stakeholders	0 (0.0%)	13 (6.1%)	37 (17.3%)	105 (49.1%)	59 (27.6%)	3.98	0.833	214 (100)
P-20 The scope of land acquisition was determined by the client during the design phase.	2 (0.9%)	6 (2.8%)	26 (12.1%)	95 (44.4%)	85 (39.7%)	4.19	0.826	214 (100)
Sub-Composite mean and standard deviation						3.42	0.993	
Composite mean and standard deviation						**3.59**	**0.958**	

As per the results in Table 4.16, a composite mean and standard deviation were computed whereby a line item mean and standard deviation were used for comparison. On one hand, where the line item was found to be lower than the composite mean, the statement or the item influenced the outcome negatively. On the other hand, a lower standard deviation to the composite standard deviation was an indication that the responses were convergent or consistent and vise-versa.

Statement P-01, the community and other stakeholders were consulted during the budgeting process, 100(46.7%) of the respondents disagreed, 47(22%) of them strongly disagreed, 35(16.4%) were neutral, 28(13.1%) agreed while 4(1.9%) strongly agreed. The mean score was 2.27 below the composite mean of 3.59; hence, this implies that community and other stakeholders are not consulted during the budgeting process. Participatory budget making or process is vital to avoid cost overruns and also ensure the whole team becomes aware of any cost implication incase the project begins to attract unnecessary costs. A standard deviation of 1.006 recorded on this statement was higher than the composite standard deviation of 0.958 and therefore it can be concluded that the opinions diverged.

Statement P-02, that the client and land commission evaluated the cost of land acquisition and planned the related budget to reduce the associated risks during the design phase, 88(41.1%) of the respondents disagreed, 62(29.0%) were neutral, 46(21.5%) strongly disagreed, 16(7.5%) agreed while 2(0.9%) strongly agreed. The mean score was 2.26 less than the composite mean of 3.59 and this implied that the road authority and land commission did not evaluate the cost of land acquisition and did not plan the related budget to reduce the associated risks during the design phase. Participatory land acquisition process is crucial in avoiding delays in project completion. The cost of land acquisition should be estimated and a budget plan made at the design stage of a project to facilitate early land acquisition process before the commencement of construction. A standard deviation of 0.910 was obtained below the composite mean of 0.958, hence the opinions converged.

Statement P-03, that the client and the relevant service providers evaluated the cost and planned a budget for the removal and relocation of service lines to reduce risks, 100(46.7%) of the respondents disagreed, 43(20.1%) disagreed, 41(19.2%) were neutral, 27(12.6%) agreed while 3(1.4%) strongly agreed. A mean score of 2.29 obtained was lower than the sub-composite mean of 3.59 implying that client and service providers did not evaluate the cost and did not plan a budget for removing and relocating service lines to pave the way for new construction. Such costs implication should be factored in the future projects to avoid cost overruns and also facilitate completion time. Participatory service lines removal and relocation process should be adopted to ensure minimum disruption to the construction programme. A standard deviation of 0.973 obtained on the statement was above the sub-composite standard deviation of 0.958 hence opinions recorded diverged.

Statement P-04, that key stakeholders worked together with experts on cost estimates and budgeting process for the construction of the new road project. The findings revealed that 75(35.0%) of the respondents agreed, 56(26.2%) strongly agreed, 40(18.7%) were neutral, 32(15.0%) disagreed while 11(5.1%) strongly disagreed. The mean score was 3.63 above the composite mean of 3.59 which implied that the majority of key stakeholders worked together with experts on cost estimates and budgeting process. Participatory budgeting process is critical to ensure that the project does not suffer delayed payments which lead increase in cost of road projects. A higher standard deviation of 1.172 was above the composite standard deviation of 0.958 hence divergence in opinions.

Statement P-05, that the client planned a budget for environmental and social impacts studies and management during construction. Findings indicated that 96(44.9%) of the respondents agreed, 77(36.0%) strongly agreed, 32(15.0%) were neutral, 9(4.2%) disagreed while 0(0.0%) strongly disagreed. The mean score was 4.14 above the sub-composite mean of 3.59 implying that the client planned a budget for environmental and social impacts studies and management during construction. This is important to assure the beneficiaries a final product with none or minimum environmental impact for their own safety. It was also evident that opinions converged give a lower standard deviation of 0.815 as compared to the composite standard deviation of 0.958.

Statement P-06, that key stakeholders gave their opinions on type and quantity of resources required for the project, the findings revealed that 91(42.5%) of the respondents agreed, 60(28.0%) strongly agreed, 39(18.2%) were neutral, 21(9.8%) disagreed while 3(1.4%) strongly disagreed. The mean score was 3.86 above the composite 3.59 which implies that key stakeholders gave their opinions on type and quantity of resources required for the road projects. This is very important to ensure completion of the project within time, cost and quality of the final product. A higher standard deviation of 0.982 above the composite of 0.958 indicated divergence in opinions.

Statement P-07, that client does not involve other stakeholders in sourcing of funding for the project; 97(45.3%) of the respondents strongly agreed, 59(27.6%) agreed, 38(17.8%) were neutral, 18(8.4%) disagreed while 2(0.9%) strongly disagreed. The mean score for this statement was 4.08 which was higher than the composite of 3.59 implying that the client does not involve other stakeholders in sourcing for funds for the project. This finding is in line with the government's responsibility of meeting the needs of its population by providing the required funding for road transport infrastructure need. This might be reasons why some roads take longer to be completed and eventually negatively influencing the overall completion of the road. Other methods of funding where more stakeholders could participate like PPP financing of projects should be adopted. A higher standard deviation of 1.025 compared to a composite standard deviation of 0.958 imply that opinions diverged.

Statement P-08, that minimum quantity of construction machinery, tools and equipment required to deliver the project is estimated by the client or consultant, 91(42.5%) of the respondents agreed, 67(31.3%) strongly agreed, 41(19.2%) were neutral, 13(6.1%) disagreed while 2(0.9%) strongly disagreed. The mean score for this statement was 3.97 above the composite which was 3.59 implying that the minimum quantity of construction machinery, tools and equipment required to deliver the project is well estimated by both the client and consultant. Inadequate construction machinery and tools are likely to adversely influence the period taken for completion hence need to improve this aspect in the future road construction assignments. A lower standard deviation of 0.913 on this statement compared to the composite mean of 0.958 is an indication of convergence in opinions gathered.

Statement P-09, that procurement of sub-contractors for the removal and relocation of service lines was not carried out well in advance of start of construction of the road, the findings showed that 93(43.5%) of the respondents agreed, 69(32.2%) strongly agreed, 37(17.3%) were neutral, 8(3.7%) disagreed and 7(3.3%) strongly disagreed. The mean score was 3.98 above the composite mean of 3.59 which implied that procurement of sub-contractors for the removal and relocation of service lines was indeed not adequately carried out well in advance of construction. Opinions on this statement diverged considering the fact that the statement's standard deviation was 0.971 higher than the composite standard deviation of 0.958.

Statement P-10, that number and qualification of key personnel was established, and compiled into a project team during planning, the findings revealed that 92(43.0%) of the respondents agreed, 88(41.1%) strongly agreed, 33(15.4%) were neutral, 1(0.5%) were disagreed and 0(0.0%) strongly disagreed. The mean score was 4.25 higher than the composite mean of 3.59. The findings imply that the number and qualification of key personnel was established, and compiled into a project team during planning which had a positive influence on the completion of the road. The standard deviation obtained on this statement was 0.725 lower than the sub-composite of 0.958 hence opinions were converging.

Statement P-11, that stakeholders participate in establishing project deliverables, the findings revealed that 85(39.7%) of the respondents had agreed, 62(29.0%) had strongly agreed, 50(23.4%) were neutral, 16(7.5%) disagreed and 1(0.5%) strongly disagreed. The mean score was 3.89 lower than the composite of 3.59 hence this finding implies that most of the stakeholders participate in establishing project deliverables. This eventually leads to beneficiary satisfaction hence early completion of road infrastructure projects. The standard deviation was 0.926 lower than the sub-composite standard deviation of 0.958 indicating that opinions were converging.

Statement P-12, that key stakeholders have the necessary qualification and experience in developing a work breakdown structure for the project; 92(43.0%) of the respondents agreed, 75(35.0%) strongly agreed, 29(13.6%) were neutral, 15(7.0%) disagreed and 3(1.4%) strongly disagreed. The mean score was 4.03 above the composite mean of 3.59. The findings imply that key stakeholders have the necessary qualification and experience in developing a work breakdown structure for the project. This helps in avoiding over-lapping of activities and hence completion of the project. A standard deviation of 0.946 was lower than the sub-composite standard deviation of 0.958 indicating that opinions converged.

Statement P-13, that activities for land acquisition are planned at this stage, the study found that 102(47.7%) of the respondents agreed, 79(36.9%) strongly agreed, 23(10.7%) were neutral, 6(2.8%) disagreed and 4(1.9%) strongly disagreed. The mean score was 4.15 higher than the composite mean of 3.59 implying that activities for land acquisition are planned at scheduling of activities stage hence increased completion rate in road infrastructure projects. Opinions converged on this statement since the line standard deviation was 0.859 lower than the composite standard deviation of 0.958.

Statement P-14, schedule of activities for relocation of service lines was prepared, 92(43.0%) of the respondents agreed, 64(29.9%) strongly agreed, 37(17.3%) were neutral, 19(8.9%) disagreed and 2(0.9%) strongly disagreed. The mean score was 3.92 higher than the composite mean of 3.59 and therefore this implies that the schedule of activities for relocation of service lines was properly prepared. Opinions converged since the line standard deviation was 0.954 lower than the composite standard deviation of 0.958.

Statement P-15, programme of work was approved and signed off by stakeholders, 38.8% of the respondents agreed, 80(37.4%) strongly agreed, 31(14.5%) were neutral, 15(7.0%) disagreed and 5(2.3%) strongly disagreed. The mean score was 4.02 above the composite mean of 3.59 implying that the programme of work was approved and signed off by stakeholders hence completion in road infrastructure projects. This implies that that the key stakeholders participated in the preparation of project schedule is vital to ensure that project duration had a consensus. Opinions diverged since the line standard deviation was 1.007 higher than the sub-composite standard deviation of 0.958.

Statement P-16, the influence of stakeholders' participation on scope planning of urban road transport infrastructure projects in Kenya. On the statement, project beneficiaries are involved in clearly defining the scope of work, the findings revealed that 71(33.2%) of the respondents disagreed, 63(29.4%) strongly disagreed, 44(20.6%) were neutral, 26(12.1%) agreed and 10(4.7%) strongly agreed. The mean score was 2.29 lower than the composite mean of 3.59 implying that the affected residents are not involved in clearly defining the scope of work. It is vital for project beneficiaries to be involved in capturing and defining work to be done to ensure they reap maximum benefits from the project. The standard deviation obtained on this statement was 1.152 higher than the sub-composite standard deviation of 0.958 hence opinions diverged.

Statement P-17, the project scope is dependent on the amount of funds allocated to the project by the client and stakeholders have no input in decision-making, the results were as follows: 107(50%) of the respondents agreed, 66(30.8%) strongly agreed, 36(16.8%) were neutral, 4(1.9%) disagreed and 1(0.5%) strongly disagreed. The mean score was 4.09 higher than the composite mean of 3.59 implying that project scope is very dependent on the amount of funds allocated to the project by the client; however, stakeholders have no input in decision-making. The opinions on the statement converged given a line standard deviation of 0.767 and composite standard deviation of 0.958.

Statement P-18, that the community request for adequate pedestrian walkways, zebra crossings and footbridges are taken into consideration by the client; the findings revealed that 70(32.7%) of the respondents strongly disagreed, 49(22.9%) disagreed, 43(20.1%) agreed, 30(14%) were neutral and 22(10.3%) strongly agreed. The mean score was 2.52 lower than the composite mean of 3.59 implying that community request for adequate pedestrian walkways, zebra crossings and footbridges was not taken into consideration by the client. From this statement, the opinions were not consistent because the statement's standard deviation was 1.390 higher than the composite standard deviation of 0.958.

Statement P-19, that the scope of relocation of service lines is determined by relevant government agency based on information provided by stakeholders, the findings revealed 105(49.1%) of the respondents agreed, 59(27.6%) strongly agreed, 37(17.3%) were neutral, 13(6.1%) disagreed while 0(0.0%) strongly disagreed. The mean score was 3.98 higher than the composite mean of 3.59 implying that the scope of relocation of service lines is determined by relevant government agency based on information provided by key stakeholders. The standard deviation recorded on the statement was 0.833 lower than the composite standard deviation of 0.958 hence convergence in opinions.

Statement P-20, the scope of land acquisition was determined by the client during the design phase, 95(44.4%) of the respondents agreed, 85(39.7%) strongly agreed, 26(12.1%) were neutral, 6(2.8%) disagreed and 2(0.9%) strongly disagreed. The mean score was 4.19 higher than the composite mean of 3.59 implying that the client determined the scope of land acquisition during the design phase. The standard deviation on the statement was 0.826 higher than the composite standard deviation of 0.958 hence this implied that opinions were consistent or convergent.

4.7.2 Qualitative Information of Stakeholder Participation in Project Planning and Completion of Urban Roads

The study further gathered some qualitative information from the opened ended questionnaires and key informant interviews, in order to fulfil the need for triangulation of information. In this respect, the respondents were further asked to indicate whether they think that the community participation in the design stage can improve project completion. The findings were as shown in Table 4.17.

Table 4.17: Whether Community Participation in the Design Stage can Improve Project Completion

Responses	Frequency	Percentage
Yes	194	90.7
No	20	9.3
Total	**214**	**100.0**

The results in Table 4.17 indicate that respondents indicated that they think that community participation in the design stage can improve project completion as shown by 90.7%. This is because community participation in the design stage increases accessibility, if the community is disregarded in construction of roads; it may lead to protest since such projects may mean surrender of land or other assets which may be reduced and helps the project manager to identify the inadequacies of the process at an early stage to enhance completion in the other stages thereby saving on time and ensuring all aspects are taken into consideration.

It was as well indicated that stakeholder participation gives clarity to the project purpose and objective and thus creating the preferred coordination and working environment between the client, contractor and community hence improves project completion, helps in optimizing use of available resources, promote peace and tranquility for such projects to thrive. These are highly important in project planning where resources are mobilized, conducts back checks against what has been used by the project manager to ensure all is well for them and reduces conflict during implementation as their demands were evaluated and agreed upon.

Information from the respondents also collaborate the fact that active community participation in project planning and implementation may improve project completion through; the use of local knowledge, increase project acceptability, produce more equitable distribution of benefits, promote local resource mobilization and help ensure project sustainability, provide vital information which will assist the planners/designers to include them on the initiation /design stage if they merit, reduces conflicts during implementation, involvement of community in the design stages helps make it easier when it’s time to relocate as there will be no clashes between the community and the clients, helps in accommodating the requirements of different stakeholders well in advance.

The respondents also indicated that community participation in the design stage enhances project ownership by the community, hence acceptability of projects. It helps in giving an indication on the difficulties to expect, so that they could be catered for in advance. By implication community participation in the design ensures that the community feels the project belongs to them and they will assist to ensure its completion within the time frame and eliminates protests that disrupt the progress of the project. Majority of the respondents noted that proper project planning with local population enhances projects awareness creation, promote community cooperation at the time of relocation of complementary service facilities. According to them, it allows the community contribute important suggestions and decisions that may benefit the project in the design stage and later in its development and that their early input would help capture the expectation of stakeholders and adequately provide the necessary infrastructure and financing.

Their opinion on the category of stakeholders that can contribute substantially to project success in the design phase, the respondents indicated the society, the community, investors, the government, government agencies, project managers, client, local authorities, consultants, the contractor, services providers, elected leaders, project affected persons, national road authority, local key informants, the project manager, the government, the construction company, Kenya power and water agency, NTSA, MOTIHUD & PW, material department, NLC and ministry of lands and business communities.

Information from specific interviews conducted with the professional stakeholders and complimentary service providers such as KPLC, NLC, and water service boards, also confirmed some of the major findings of the quantitative data. From Kenya power sector, the officials indicated that the process of power line relocation should always be commenced during the feasibility study (initiation) and implemented during the survey works, immediately after quotation and approval. But not at the execution, as usually practiced. In fact, the KPLC officials had the following to say:

> KPLC-10 said that,
>
> *"In my opinion the process of relocation of power lines should commence and end during design stage and never during construction to avoid delay to the contractor".*
>
> KPLC-11 said that,
>
> *"It should commence immediately after the officer from the county government or National government have given consent for the project to go on and also after the owner of the project has made all payment agreed by the two parties in full".*

On when should the process of land acquisition be commenced, the land commission officials said it should be commenced immediately after surveying/ mapping then evaluation and compensation, after surveying the land and defining the location and agreement on compensation and immediately after valuation and compensation to settle everything to avoid interference thereafter.

Further, most of the water companies' officials said that process of relocation of water pipes should be a major risk to project completion, since water and sewerage lines need to be out of the road construction sites, before anything happens and the contractor has to wait for it to happen. They particularly noted that the ill planned culture of limited integrated thinking has usually presents difficulties in the process since rushing will amount to doing wrong things, which will cause some challenges to project completion.

WASE-3 said,

> *"Anything that will affect human activities either directly or indirectly should be taken as a major risk because a bad option will cause more damages than good hence creating the conflict between the society and the project" Another water company official said "Yes, the process of water pipes relocation should be considered as a major risk to project completion because when they are doing the relocation it affects the people its health hazardous and without removal of the land the roads will lack enough space to be constructed according to the design laid."*

When some projects affected land owners were asked whether they were compensated on time, most of them said that they were not compensated on time. The PAPs had the following to say:

Land Owner-6

> *"I was not compensated on time because it took me a lot of time to find the involved parties in the construction and up to now I have never been compensated". LandOwner-7 said, "Yes I was compensated but not the amount I expected that could cover all my destroyed property and the compensation was not made on time it took a long time where I was forced to become a displaced person."*

Land Owner-7 said that,

> *"No, I was not compensated because there was a delay in the release of funds and the funds allocation took a lot of time so the compensation and was a delayed" and "We were not compensated on time, we had to follow a long process of legal follow-up and documentation before we were fully compensated."*

However, when some affected persons were asked to rate the design process of land acquisition of the project, some of the projects affected persons rated it to be good, while most rated it to be poor. Some of the PAPs further expressed their disappointments in various forms, for instance;

"The process of land acquisition of the project was very poor because of the short notice given to us did not provide enough time to prepare for the loss of their property," LandOwner-8.

Similar sentiments were shared by LandOwner-9 who said that,

"The land acquisition process was poor since all stakeholders were not involved in making of decisions and project team just planned on their own and come up with the solution that favoured them not caring about the land owners".

LandOwner-10 complained that,
"The land acquisition process in this project is very poor because the stakeholder is not involved in planning of the acquisition and also they are not professional enough on how they work on their project whereby they don't offer civil education to the affected parties."

4.7.3 Correlation between Stakeholder Participation in Project Planning and Completion of Urban Road Transport Infrastructure Projects

Analysis was carried out to establish the direction and magnitude of the relationship between the independent and dependent variables under investigation. This was in line with the second objective of this study, which was to establish how participation in project planning influences the completion of urban road transport infrastructure projects in Kenya. Participation in project planning was measured by budgeting, resource planning, schedule of activities and scope planning while completion of urban roads transport infrastructure projects was measured by project completion within time, project completion within cost, project completion within quality and stakeholder satisfaction. Data was collected from the respondents on participation in project planning variables and then the composite index on each of the participation in project planning variable indicators (budgeting, resource planning, schedule of activities and scope planning) was computed and used in the analysis. The results are presented in Table 4.18.

Table 4.18: Correlation between Stakeholder Participation in Project Planning and Completion of Urban Road Transport Infrastructure Projects

Correlations

Variables		Completion of urban road transport infrastructure projects	Stakeholder participation in project planning
Completion of urban road transport infrastructure projects	Pearson Correlation	1	0.838**
	Sig. (2-tailed)		0.011
	n	214	214
Stakeholder participation in project planning	Pearson Correlation	0.838**	1
	Sig. (2-tailed)	0.011	
	n	214	214

**Correlation is significant at 0.05 level of significant (2-tailed)

Table 4.18 indicate there was strong correlation between the completion of urban road transport infrastructure projects and participation in project planning (r=0.838) and the relationship was significant (p=0. 011<0.05).

4.7.4 Regression Analysis of Influence of Stakeholder Participation in Project Planning on Completion of Urban Road Transport Infrastructure Projects

Further Linear regression analysis was conducted to establish the influence of participation in project planning on completion of urban road transport infrastructure projects in Kenya. Additionally, in testing its hypothesis data was collected from the respondents on participation in project planning variables and then the composite index for each of the project planning variable indicators (budgeting, resource planning, schedule of activities and scope planning) was computed and used in the analysis. The following hypothesis that was in line with objective two was formulated and tested.

Hypothesis Testing

The following hypothesis was tested using simple regression model to satisfy the second objective.

2. **H_0:** Stakeholder participation in project planning does not significantly influence completion of urban road transport infrastructure projects in Kenya.

   H_1: There is a significant relationship between stakeholder participation in project planning and completion of urban road transport infrastructure projects in Kenya

Regression Model

The mathematical model used for testing the null hypothesis was as follows:

Completion of urban road transport infrastructure projects = f (Participation in project planning)

$$Y = f(X_2, \varepsilon)$$

$$Y = \beta 0 + \beta 2X2 + \varepsilon$$

Where

Y = Completion of urban road transport infrastructure projects

X2 = Participation in project planning

β0 = Constant term

β2 = Beta coefficients

ε = Error term

Data was analyzed and the regression results for the influence of participation in project planning on completion of urban road transport infrastructure projects in Kenya are presented in Table 4. 19.

Table 4.19: Participation in Project Planning and Completion of Urban Road Transport Infrastructure Projects

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.838	0.703	0.701	1.351

ANOVA						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	914.414	1	914.414	500.684	.000
	Residual	387.182	212	1.826		
	Total	**1301.596**	**213**			

Regression Coefficients						
		Unstandardized Coefficients		**Standardized Coefficients**	**t**	**Sig.**
Model		**B**	**Std. Error**	**Beta**		
1	(Constant)	0.987	0.208		4.745	.000
	Participation in project planning	0.895	0.245	0.838	3.653	.000
	Predictors: (constant), Stakeholder participation in project planning					
	Dependent Variable: Completion of urban road transport infrastructure projects					

Table 4.19 shows that r=0.838. This indicates that participation in project planning on has a strong relationship with completion of urban road transport infrastructure projects in Kenya. R^2 = 0.703 indicating that participation in project planning explains 70.3% of the variations in the completion of urban road transport infrastructure projects in Kenya.

The overall F statistics, (F = 500.684, $p=0.000<0.05$), indicated that there was a very statistical significant relationship between participation in project planning and completion of urban road transport infrastructure projects in Kenya. The null hypothesis was therefore rejected and it was concluded that participation in project planning significantly influences completion of urban road transport infrastructure projects in Kenya.

4.7.5 Discussion of Findings of Stakeholder participation in Project Planning and Completion of Urban Roads Transport Infrastructure

Although the current study has established that stakeholder participation in project planning account for 70.3 % (R^2 Squared) and that by increasing their particiapation during the planning of road project would enhance completion, the findings show that they were not involved in planning of the road projects (Statements P-01, P-02, P-03, However, the current study showed that Awini (2018) found that stakeholders are not always involved in planning. Awini opines that the stakeholders are neglected because of the misconception that beneficiaries are not capable of contributing meaningfully to the decision making of project. Awini concluded that by excluding stakeholders would fuel some challenges during implementation. The findings of this current study are further support by the descriptive study of Mwanga and Kayunze (2016) which indicated that 81.8% of stakeholders do not participate in planning the interventions.

The statements (P-01, P-02, P-03, P-04) in the current study have revealed that stakeholder participation in budget planning is not positive good enough. Even though planning (as a key variable under this study) correlates strongly and positively with completion of urban roads transport infrastructure projects ($r=0.838$, $p=0.001<0.05$). Futher, the study (Statements P-06, P-07, P-08, P-09, P-10) showed that stakeholders took part in resource planning. This explains the importance and the continued need to have a participatory resource planning as found by Ochieng and Sakwa (2018) whose study revealed a statistical significant influence between participative resource mobilization (budget) and efficiency in project implementation.

The findings in the current study supports the findings by Onyango, Bwisa and Orwa (2017) who failed to accept the null hypothesis that participatory planning processes do not influence implementation of public infrastructure projects. After the analysis the result indicated that participatory planning process would yield 24.5% of the variation in the implementation of the infrastructure projects, which was quite below the results of the current study with an impressive value of 70.3%. This findings lays a foundation for more emphasis of stakeholder involvement in planning or road construction works or projects. The current findings with a beta value of 0.895 affirm the findings of Musyoka and Moronge (2017) that by taking all other independent variables at zero, a unit increase in project planning would lead to a 0.765 increase (76.5) in the implementation of county government funded construction projects. This suggests that stakeholders should not be forsaken in the planning phase of road construction transport infrastructure projects since the adjusted R value of the current study has shown the significant influence the stakeholders could have in succeful completion of urban road projects in Kenya. Ling and Ma (2014) projects should be planned and designed with the aim of increasing the realization of stakeholders' rights survival, protection development and participation.

4.8 Stakeholder Participation in Project Execution and Completion of Urban Road Transport Infrastructure Projects

This was the third objective of the study, which sought to establish the extent to which stakeholder's participation in project execution influences completion of urban road transport infrastructure projects in Kenya.

4.8.1 Descriptive Analysis of Stakeholder Participation in Project Execution and Completion of Urban Road Transport Infrastructure

Stakeholders' participation was assessed by their involvement in the pre-construction meeting, execution of planned activities, monitoring and controlling of project activities and communication, using a 5 point Likert scale ranging from 5 = strongly agree, 4 = agree, 3 = Neutral, 2 = disagree and 1= strongly disagree. The results were presented in Table 4.20.

Table 4.20: Stakeholder Participation in Project Execution and Completion of Urban Road Transport Infrastructure Projects

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std Dv	Total F (%)
Pre-construction meeting								
E-01 All key project stakeholders attended the kick –off meeting	5 (2.3%)	8 (3.7%)	27 (12.6%)	112 (52.3%)	62 (29.0%)	4.02	0.883	214 (100)
E-02 The project goals were discussed and understood by stakeholders before embarking on any project work	4 (1.9%)	7 (3.3%)	15 (7.0%)	118 (55.1%)	70 (32.7%)	4.14	0.825	214 (100)
E-03 The scope of the project was well	4 (1.9%)	2 (0.9%)	17 (7.9%)	108 (50.5%)	83 (38.8%)	4.23	0.788	214 (100)

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std Dv	Total F (%)
articulated by the client during the meeting								
E-04 The role and responsibility of each stakeholder was spelt out during the kick –off meeting	4 (1.9%)	6 (2.8%)	28 (13.1%)	95 (44.4%)	81 (37.9%)	4.14	0.850	214 (100)
E-05 The contractor was asked to prepare the programme of works and cash flow projections for project execution.	0 (0.0%)	11 (5.1%)	29 (13.6%)	87 (40.7%)	87 (40.7%)	4.17	0.850	214 (100)
Sub-Composite mean and standard deviation						4.14	0.845	
Execution of Planned Activities								
E-06 As a key stakeholder I participated in the review and implementation of project activities through site inspections and regular site meetings.	1 (0.5%)	2 (0.9%)	25 (11.7%)	117 (54.7%)	69 (32.2%)	4.17	0.701	214 (100)
E-07 Key stakeholders were consulted whenever there was need to change the original planned activities.	3 (1.4%)	14 (6.5%)	23 (10.7%)	111 (51.9%)	63 (29.4%)	4.01	0.891	214 (100)
E-08 Government agencies remove and relocate service lines and acquire land far ahead of the planned construction activities.	60 (28.0 %)	109 (50.9%)	45 (21.0%)	0 (0.0%)	0 (0.0%)	1.93	0.699	214 (100)
E-09 The client participated in mobilizing and managing the project team.	0 (0.0%)	2 (0.9%)	5 (2.3%)	11 (5.1%)	196 (91.6%)	4.87	0.463	214 (100)
E-10 The community followed up construction activities to ensure their interests were taken care of.	3 (1.4%)	20 (9.3%)	36 (16.8%)	94 (43.9%)	61 (28.5%)	3.89	0.972	214 (100)
Sub-Composite mean and standard deviation						3.78	0.745	
Monitoring and Controlling of Project Activities								
E-11 The project management team controlled the project cost	1 (0.5%)	1 (0.5%)	27 (12.6%)	142 (66.4%)	43 (20.1%)	4.05	0.622	214 (100)
E-12 The project management team requested and received feedback from the other stakeholders regarding the quality of work	0 (0.0%)	3 (1.4%)	28 (13.1%)	122 (57.0%)	61 (28.5%)	4.13	0.677	214 (100)
E-13 Government agencies responsible for land acquisition and relocation of service	6 (2.8%)	21 (9.8%)	31 (14.5%)	113 (52.8%)	43 (20.1%)	3.78	0.972	214 (100)

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std Dv	Total F (%)
lines efficiently monitored their activities								
E-14 Community concerns were considered and incorporated in the agenda for monthly progress meetings.	4 (1.9)	13 (6.1)	45 (21)	87 (40.7)	65 (30.4)	3.92	0.9605	214 (100)
E-15 Quality of work was not properly monitored and controlled by the consultants.	80 (37.4 %)	60 (28.0%)	22 (10.3%)	29 (13.6%)	23 (10.7%)	2.32	1.375	214 (100)
Sub-Composite mean and standard deviation						3.64	0.921	
Communication								
E-16 All stakeholders received Information on the progress of work frequently from project supervision team through relevant communication channel.	0 (0.0%)	7 (3.3%)	23 (10.7%)	112 (52.3%)	72 (33.6%)	4.16	0.742	214 (100)
E-17 Meetings with the project team were organized to review the current status of the project, way forward, and challenges to progress including how to solve them.	0 (0.0%)	2 (0.9%)	23 (10.7%)	112 (52.3%)	77 (36.0%)	4.23	0.673	214 (100)
E-18 Meetings with political leaders were held to address community concerns	5 (2.3%)	21 (9.8%)	41 (19.2%)	99 (46.3%)	47 (22. 0%)	3.85	1.586	214 (100)
E-19 Communication with stakeholders was achieved through emails, telephone and public meetings.	0 (0.0%)	6 (2.8%)	27 (12.6%)	113 (52.8%)	68 (31. 8%)	4.14	0.735	214 (100)
E-20 Our project sociologists and environmentalists engaged the community continuously and explained how the project will affect or benefit them.	1 (0.5%)	1 (0.5%)	10 (4.7%)	112 (52.3%)	90 (42. 1%)	4.35	0.638	214 (100)
Sub-Composite mean and standard deviation						4.15	0.875	
Composite Mean and Standard deviation						**3.93**	**0.847**	

From Table 4.20, a composite mean and standard deviation were computed whereby a line item mean and standard deviation were used for comparison. On one hand, where the line item was found to be lower than the composite mean, the statement or the item influenced the outcome negatively. On the other hand, a lower standard deviation to the composite standard deviation was an indication that the responses were convergent or consistent and vise-versa.

Statement E-01, that all key project stakeholders attended the kick–off meeting, 112(52.3%) indicated an agreement, 62(29%) indicated a strong agreement, 27(12.6%) indicated neutral, 8(3.7%) indicated a disagreement and 5(2.3%) indicated a strong disagreement. The mean was 4.02 higher than the composite mean of 3.93 implying that all key project stakeholders attended the kick –off meeting and this would negatively influence the completion of urban road transport infrastructure projects. The standard deviation obtained was 0.883 lower than the composite standard deviation of 0.847 hence convergent opinions.

Statement E-02, that the project goals were discussed and understood by stakeholders before embarking on any project work, 118(55.1%) indicated an agreement, 70(32.7%) indicated a strong agreement, 15(7%) indicated neutral, 7(3.3%) indicated a disagreement and 4(1.9%) indicated a strong disagreement. The mean score was 4.14 higher than the composite mean score of 3.93 implying that project goals were discussed and understood by stakeholders before embarking on any project work and this would highly influence the completion of urban road transport infrastructure projects. The standard deviation was 0.825 lower than the composite standard deviation of 0.847 indicating convergence of opinions.

Statement E-03, that the scope of the project was well articulated by the client during the meeting, 108(50.5%) indicated an agreement, 83(38.8%) indicated a strong agreement, 17(7.9%) indicated neutral, 4(1.9%) indicated a strong disagreement and 2(0.9%) indicated a disagreement. The mean score was 4.23 higher than the composite mean of 3.93 hence this implies that the scope of the project was well articulated by the client during the meeting and this would positively influence the completion of urban road transport infrastructure projects. The standard deviation was 0.788 lower than the composite standard deviation of 0.847 suggesting the opinions were convergent.

Statement E-04, that the role and responsibility of each stakeholder was spelt out during the kick –off meeting, 95(44.4%) indicated an agreement, 81(37.9%) indicated a strong agreement, 28(13.1%) indicated neutral, 6(2.8%) indicated a disagreement and 4(1.9%) indicated a strong disagreement. The mean score was 4.14 while the composite mean was 3.93. The results imply that the role and responsibility of each stakeholder was spelt out during the kick –off meeting and this would moderately influence the completion of urban road transport infrastructure projects. The standard deviation of 0.880 lower than the composite standard deviation of 0.847 indicated convergence in opinions.

Statement E-05, that the contractor was asked to prepare the programme of works and cash flow projections for project execution, 87(40.7%) indicated an agreement, 87(40.7%) indicated a strong agreement, 29(13.6%) indicated neutral and 11(5.1%) indicated a disagreement. The mean score was 4.17 more than the composite mean of 3.93 implying that the contractor was asked to prepare the programme of works and cash flow projections for project execution and this would positively influence the completion of urban road transport infrastructure projects. The opinions were however divergent since the standard deviation on this statement was 0.850 higher than 0.847 for the composite standard deviation.

Statement E-06, that as a key stakeholder I participated in the review and implementation of project activities through site inspections and regular site meetings, 117(54.7%) indicated an agreement, 69(32.2%) indicated a strong agreement, 25(11.7%) indicated neutral, 2(0.9%) indicated a disagreement and 1(0.5%) indicated a strong disagreement. The mean was 4.17 higher than the composite mean of 3.93 implying that key stakeholder participated in the review and implementation of project activities through site inspections and regular site meetings and this would positively influence the completion of road transport infrastructure projects. The standard deviation was 0.701 lower than the composite standard deviation of 0.847 hence convergence in opinions.

Statement E-07, that key stakeholders were consulted whenever there was need to change the original planned activities, 111(51.9%) indicated an agreement, 63(29.4%) indicated a strong agreement, 23(10.7%) indicated neutral, 14(6.5%) indicated a disagreement, 3(1.4%) indicated a strong disagreement. The mean score was 4.01 higher than the composite mean of 3.93 which implied that key stakeholders were consulted whenever there was need to change the original planned activities and this would positively influence the completion of urban road infrastructure projects. The standard deviation was 0.891 higher than the composite standard deviation of 0.847 hence divergence in opinions.

Statement E-08, that government agencies remove and relocate service lines and acquire land far ahead of the planned construction activities, 109(50.9%) indicated a disagreement, 60(28%) indicated a strong disagreement, 45(21%) indicated neutral. The mean score was 1.93 lower than the composite mean of 3.93 implying that government agencies do not remove and relocate service lines and acquire land far ahead of the planned construction activities and this would negatively influence the road completion. The standard deviation was 0.699 lower than the composite mean of 0.847 implying convergence in opinions.

Statement E-09, that the client participated in mobilizing and managing the project team, 196(91.6%) indicated a strong agreement, 11(5.1%) indicated an agreement, 5(2.3%) indicated neutral, 2(0.9%) indicated a disagreement. The mean score was 4.87 higher than 3.93 the composite mean. This indicates that the client participated in mobilizing and managing the project team and this would positively influence road completion. The standard deviation of 0.463 lower than the composite mean of 0.847 indicated opinions were highly convergent.

Statement E-10, the community followed up construction activities to ensure their interests was taken care of, 94(43.9%) indicated an agreement, 61(28.5%) indicated a strong agreement, 36(16.8%) indicated neutral, 20(9.3%) indicated a disagreement and 3(1.4%) indicated a strong disagreement. The mean was 3.89 lower than composite mean of 3.93 which implies that the community did not follow up construction activities to ensure their interests were taken care of and this positively influenced the completion of road infrastructure projects. The standard deviation obtained on the statement was 0.972 higher than the composite standard deviation of 0.847 implying opinions was inconsistent.

Statement E-11, that the project management team controlled the project cost, 142(66.4%) indicated an agreement, 43(20.1%) indicated a strong agreement, 27(12.6%) indicated neutral, 1(0.5%) indicated a strong disagreement and 1(0.5%) indicated a disagreement. The mean was 4.05 higher than the composite mean of 3.93 implying that the project management team controlled the project cost and this would positively influence the completion of urban road infrastructure. The standard deviation was 0.622 lower than the composite mean of 0.847 suggesting opinions converged.

Statement E-12, that the project management team requested and received feedback from the other stakeholders regarding the quality of work, 122(57%) indicated an agreement, 61(28.5%) indicated a strong agreement, 28(13.1%) indicated neutral and 3(1.4%) indicated a disagreement. The mean score for this statement was 4.13 higher than a composite mean 3.93 indicating that the project management team requested and received feedback from the other stakeholders regarding the quality of work and this positively influenced completion of urban road transport infrastructure projects. Recorded also was a standard deviation of 0.677 lower than the composite standard deviation of 0.847 hence convergent opinions.

Statement E-13, that government agencies responsible for land acquisition and relocation of service lines efficiently monitored their activities, 113(52.8%) indicated an agreement, 43(20.1%) indicated a strong agreement, 31(14.5%) indicated neutral, 21(9.8%) indicated a disagreement and 6(2.8%) indicated a strong disagreement. The mean score obtained was 3.78 lower than the composite mean which was 3.93 implying that government agencies responsible for land acquisition and relocation of service lines did not efficiently monitor their activities and this would negatively influence completion of urban road infrastructure projects. A higher standard deviation of 0.972 recorded on this statement compared to composite standard deviation of 0.847 suggested that opinions diverged.

Statement E-14, that community concerns were considered and incorporated in the agenda for monthly progress meetings, 87(40.7%) indicated an agreement, 65(30.4%) indicated a strong agreement, 45(21%) indicated neutral, 13(6.1%) indicated a disagreement and 4(1.9%) indicated a strong disagreement. The mean score was 3.92 almost equal to 3.93 the composite mean which implied that community concerns were to some extent considered and incorporated in the agenda for monthly progress meetings hence this positively influenced the completion road infrastructure projects. The standard deviation was 0.961 higher than the composite mean of 0.847 hence divergence in opinions.

Statement E-15, quality of work was not properly monitored and controlled by the consultants, 80(37.4%) indicated a strong disagreement, 60(28%) indicated a disagreement, 29(13.6%) indicated an agreement, 23(10.7%) indicated a strong agreement, 22(10.3%) indicated neutral. The mean score was 2.32 lower than the composite mean of 3.93 implying that quality of work was indeed properly monitored and controlled by the consultants and this would positively influence the completion of road transport infrastructure projects. This implies that consultants collaboratively worked together hence need to pay more attention on this in the future. The standard deviation was 1.376 higher than the composite standard deviation of 0.847 hence inconsistency in opinions.

Statement E-16, that all stakeholders received information on the progress of work frequently from project supervision team through relevant communication channel, 112(52.3%) indicated an agreement, 72(33.6%) indicated a strong agreement, 23(10.7%) indicated neutral and 7(3.3%) indicated a disagreement. The mean score was 4.16 greater than the composite mean of 3.93 implying that stakeholders received information on the progress of work frequently from project supervision team through relevant communication channel and this positively influenced completion of road infrastructure projects. The standard deviation was 0.742 lower than the composite standard deviation of 0.847 hence convergence in opinions.

Statement E-17, that meetings with the project team were organized to review the current status of the project, way forward, and challenges to progress including how to solve them, 112(52.3%) indicated an agreement, 77(36%) indicated a strong agreement, 23(10.7%) indicated neutral and 2(0.9%) indicated a disagreement. The mean score was 4.23 greater than 3.93 the composite mean implying that meetings with the project team were organized to review the current status of the project, way forward, and challenges to progress including how to solve them and this influenced the completion of the road infrastructure projects positively. The standard deviation was 0.673 lower to the composite standard deviation of 0.847 indicating that opinions converged.

Statement E-18, that meetings with political leaders were held to address community concerns, 99(46.3%) indicated an agreement, 47(22%) indicated a strong agreement, 41(19.2%) indicated neutral, 21(9.8%) indicated a disagreement and 5(2.3%) indicated a strong disagreement. The mean score on the statement was 3.85 lower than 3.93 the composite mean which implied that meetings with political leaders were to a slightly high extent were held to address community concerns and this negatively affected completion of road infrastructure projects. The standard deviation of this statement was 1.586 greater than the composite standard deviation of 0.847 implying divergence in opinions.

Statement E-19, that communication with stakeholders was achieved through emails, telephone and public meetings, 113(52.8%) indicated an agreement, 68(31.8%) indicated a strong agreement, 27(12.6%) indicated neutral and 6(2.8%) indicated a disagreement. The mean score obtained was 4.14 higher than composite mean of 3.93 hence implying that communication with stakeholders was well achieved through emails, telephone and public meetings. This still showed that there was significant influence due to these communication channels on the completion of urban road transport infrastructure projects. The standard deviation was 0.735 lower than 0.847 of the composite standard deviation hence convergence in opinions.

Statement E-20, that project sociologists and environmentalists engaged the community continuously and explained how the project will affect or benefit them, 112(52.3%) indicated an agreement, 90(42.1%) indicated a strong agreement, 10(4.7%) indicated neutral, 1(0.5%)

indicated a strong disagreement 1(0.5%) indicated a disagreement. The item mean was 4.35 higher than 3.93 the composite mean. This implied that project sociologists and environmentalists engaged the community continuously and explained how the project would affect or benefit them and this positively influenced completion of road projects. The standard deviation recorded was 0.638 lower than the composite standard deviation of 0.847 implying convergence in opinions recorded in the study.

4.8.2 Qualitative Information of Stakeholder Participation in Project Execution and Completion of Urban Roads Transport infrastructure

The fact that this study was informed by mixed methods research relevant qualitative information was sought from key informant interviews as well as opened ended items. From the opened questions, the respondents were asked to indicate whether they think stakeholder participation in the execution phase contributes to successful completion of urban road projects. The findings were as illustrated in Table 4.21.

Table 4.21: Stakeholder Participation in the Execution Phase

	Frequency	Percent
Yes	201	93.9
No	13	6.1
Total	**214**	**100.0**

As indicated in Table 4.21, majority (93.9%) of the respondents agreed that their participation in the execution phase could contribute to successful Completion of urban road projects. To them, their involvement as stakeholders in the project execution can influence design implementation of the project and effectively increase the realization of their rights and as well minimize disputes arising from land acquisition.

The respondents also indicated other reasons were that “they help in team formation and execution of the task assignments together with updating the project schedule which works to the benefit of the project; their views can be used to improve the design of the project and also ensure important problems are addressed; there are stakeholders who are technically able and can offer expertise regarding some issues in execution and also in quality checks to ensure proper execution of the project plan; the works would not run well within the timelines without their proper involvement; they participate in the review of implementation of the project activities through site inspections and meetings; they offer guidance throughout the execution stages as well as other stages on crucial areas of the project”.

The respondents further indicated that they participated in the review and implementation of the project activities through site inspections, ensures all stakeholders follow up on their roles defined in design phase up to execution stage, they gauge the progress of the project based on the goals and objectives to see whether the project is being implemented accordingly, they have the mandate to inspect and evaluate completed works and check on the progress which is healthy for the project and increases early identification and solution to problem encountered when exercising planned activities.

During interview, the respondents were asked to give their opinion on extent of stakeholders' contribution to substantial project completion through the execution phase. They indicated that they help in speeding up relocation of service lines and land acquisition process to give way for the execution of the project. This to them served as a kind of motivation to the execution team, which is healthy for team building, update on the project schedule and evaluation of work done to ensure quality is observed. They also indicated their involvement in regular meetings for monitoring progress of work and solving challenge faced during project execution. This could ensure better management and project governance. However, on unique challenges that the authority faces in the implementation of urban roads.

KURA-2 said that,

> *"The Authority has faced a challenge related to funding where we have not at some instances been allocated adequate funds for project implementation".*

On how they identify the road projects to be implemented and whether they consult the beneficiaries in the identification of those projects KURA-3 said that,

> *"We identify the projects through Pre- feasibility and feasibility studies where all the stakeholders' including beneficiaries are consulted."*

When further asked to rate the level of participation of stakeholders in the projects they have been involved in various phases of the project life cycle management, KURA-4 representative said,

> *"The level of participation of stakeholders in the initiation phase was 80%, planning was 100% and at Execution was 50%".*

On phases of the project life cycle in which land owners and PAPS should be involved, KURA-5 representative said,

> *"The land owners and PAPS should be to a great extent be involved in the design stage of road projects."*

4.8.3 Correlation between Stakeholder Participation in Project Execution and Completion of Urban Road Transport Infrastructure Projects

Analysis was conducted to establish the direction and magnitude of the relationship between the independent and dependent variables under investigation. This was in line with the third objective of this study which was to assess how participation in project execution influences completion of urban road transport infrastructure projects in Kenya. Participation in project execution was measured by pre-construction meeting, execution of planned activities, monitoring and controlling of project activities and communication while completion of urban roads transport infrastructure projects was measured by project completion within time, project completion within cost, project completion within quality and stakeholder satisfaction. Data was collected from the respondents on participation in project execution variables and then the composite index on each of the participation in project execution variable indicators (pre-construction meeting, execution of planned activities, monitoring and controlling of project activities and communication) was computed and used in the analysis. The results are presented in Table 4.22.

Table 4.22: Correlation between Stakeholder Participation in Project Execution and Completion of Urban Road Transport Infrastructure Projects

Correlations

Variables		**Completion of urban road transport infrastructure projects**	**Stakeholder participation in project execution**
Completion of urban road transport infrastructure projects	Pearson Correlation	1	0.796**
	Sig. (2-tailed)		0.028
	n	214	214
Stakeholder participation in project execution	Pearson Correlation	0.796**	1
	Sig. (2-tailed)	0.028	
	n	214	214

**Correlation is significant at 0.05 level of significant (2-tailed)

Results in Table 4.22 show that participation in project execution has a positive strong and significant correlation with the completion of urban road transport infrastructure projects ($r=0.796$; $p=0.028<0.05$).

4.8.4 Regression Analysis of Influence of Stakeholder Participation in Project Execution on Completion of urban Road Transport Infrastructure Projects in Kenya

In addition, the linear regression analysis was done to assess how participation in project execution influences completion of urban road transport infrastructure projects in Kenya. In testing its hypothesis, likewise data was collected from the respondents on participation in project execution variables and then the composite index for each of the project execution variable indicators (pre-construction meeting, execution of planned activities, monitoring and controlling of project activities and communication) was computed and used in the analysis. The following hypothesis that was in line with objective three was formulated and tested.

Hypothesis Testing

The following hypothesis was tested using simple regression model to satisfy the third objectives.

3. H_0: Stakeholder Participation in project execution does not significantly influence completion of urban road transport infrastructure projects in Kenya.

H_1: There is a significant relationship between stakeholder participation in project execution and completion of urban road transport infrastructure projects in Kenya

Regression Model

The mathematical model used for testing the null hypothesis was as follows:

Completion of urban road transport infrastructure projects = f (Participation in project execution)

$$Y = f(X_3, \varepsilon)$$

$$Y = \beta_0 + \beta_3 X_3 + \varepsilon$$

Where

Y = Completion of urban road transport infrastructure projects

X_3 = Participation in project execution

β_0 = Constant term

β_2 = Beta coefficients

ε = Error term

Data was analyzed and the regression results for the influence of participation in project execution on completion of urban road transport infrastructure projects in Kenya are presented in Table 4.23.

Table 4.23: Stakeholder Participation in Project Execution and Completion of Urban Road Transport Infrastructure Projects

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.796	0.634	0.632	1.007

ANOVA						
Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig**
	Regression	372.054	1	372.054	367.208	.000
1	Residual	214.798	212	1.013		
	Total	**586.852**	**213**			

Regression Coefficients						
		Unstandardized Coefficients		**Standardized Coefficients**	**t**	**Sig.**
Model		**B**	**Std. Error**	**Beta**		
1	(Constant)	0.992	0.197		5.036	.000
	Participation in project execution	0.802	0.212	0.796	3.783	.000
	Predictors: (constant), Stakeholder participation in project execution					
	Dependent Variable: Completion of urban road transport infrastructure projects					

Results in Table 4.23 show that r=0.796. This indicates that participation in project execution has a strong relationship with completion of urban road transport infrastructure projects in Kenya. $R^2 = 0.634$ indicating that participation in project execution explains 63.4% of the variations in the completion of urban road transport infrastructure projects in Kenya.

The overall F statistics, ($F = 367.208$, $p<0.000<0.05$), indicated that there was a very statistical significant relationship between participation in project execution and completion of urban road transport infrastructure projects in Kenya. The null hypothesis was therefore rejected and it was concluded that participation in project execution significantly influences completion of urban road transport infrastructure projects in Kenya.

4.8.5 Discussion of Findings of Stakeholder Participation in Project Execution and Completion of Urban Roads Transport Infrastructure

The findings of the current study show that majority of stakeholders did not participate in monitoring and controlling of project activities, even though the government agencies responsible for land acquisition and relocation of service lines efficiently monitor the activities (Statement E-15). It is also evident that the community members are not keen on following up the construction activities thus their interests end up not being taken care of

(Statement-E-10). These findings thus agree with Sulemnana, Musah and Simon (2018) who showed that the participation in monitoring activities by the upper cadre of government stakeholders (Municipal Planning and Co-ordinating Unit members and the District Assembly members in M&E of projects and programmes) was higher as opposed to zonal Council and the community which negatively impacted on the development projects in terms of transparency, accountability and project sustenance. It is for this reason the road project are not completed on schedule. The current findings also support Sheikh (2010) whose study revealed that poor people [local people] at the grass root level did not take part in project implementation [execution]. This therefore imply that there is need to engage all the stakeholder in monitoring activities concurrently.

The findings of current study also reveal that communication was positively upheld and hence positive influence on completion of urban roads transport infrastructure. The findings resonate well with Asian Development Bank (2011) that noted that stakeholder participation and communication can lead to increased awareness, foster behavioral changes facilitate mobilization, and further establish partnerships in pursuit of project's common goals. However, the meetings with political leaders were not adequately held to address concerns affecting the community and community members at large (Statement E-18). In general, the correlational analysis of the current study ($r=0.796, p<0.05$) shows that there exist a strong positive influence between stakeholder participation in project execution and completion of urban road transport infrastructure. The findings supports Ndunda, Paul and Mbura (2017) who established that project beneficiary participation positively and significantly influenced implementation of road projects ($r=0.712$, $p< 0.05$). It can be deduced that stakeholder particpation during project implementation or execution is vital to ensure successful completion of development projects. Thus, the current study support Mugabo and Mulyungi (2019) who found in a strong positive relationship between stakeholder engagement in project execution and its success. The current study however contradicts Musyoki and Gakuu (2018) who found that stakeholders' participation does not influence implementation of the infrastructural projects although with a positive significance. a negative B coefficient of -0.0253 was reported as opposed to a B value of 0.802 in the current study. This implies that stakeholder should not be ignored in the important phase of project execution in the project life cycle management for this can facilitate in the efficient and effective project completion.

4.9 Stakeholder Participation in Project Closure and Completion of Urban Roads Transport Infrastructure Projects

The study objective was to establish how stakeholder participation in project closure influence completion of urban roads transport projects.

4.9.1 Descriptive Analysis of Stakeholder Participation in Project Closure and Completion of Urban Roads Transport Infrastructure Projects

In assessing the stakeholders' participation in project closure, the respondents were asked to indicate their level of agreement with various statements linked to influence of inspection and acceptance, project commissioning and lessons learned towards completion of urban road transport infrastructure projects in Kenya. The five statements were assessed using a 5- point Likert scale ranging from 5 = strongly agree, 4 = agree, 3 = Neutral, 2 = disagree and 1= strongly disagree. The findings are presented in Table 4.24.

Table 4.24: Stakeholder Participation in Project Closure and Completion of Urban Road Transport Infrastructure Projects

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev.	Total F (%)
Inspection and acceptance								
C-01Stakeholders participated in the final inspection meeting to check the quality of the completed works.	0 (0.0%)	6 (2.8%)	36 (16.8%)	107 (50.0%)	65 (30.4%)	4.09	0.762	214 (100)
C-02 The community was invited to participate in project inspection	159 (74.3%)	30 (14.0%)	11 (5.1%)	13 (6.1%)	1 (0.5%)	1.44	0.880	214 (100)
C-03 Community was invited to give comments on any uncompleted works	67 (31.3%)	84 (39.3%)	37 (17.3%)	26 (12.1%)	0 (0.0%)	2.10	0.983	214 (100)
C-04 Timely and appropriate inspections were collaboratively carried out to address quality problems	2 (0.9%)	6 (2.8%)	36 (16.8%)	115 (53.7%)	55 (25.7%)	4.00	0.790	214 (100)
C-05 Site construction managers brought on board project inspectors to identify detectable defects before they are covered up	7 (3.3%)	7 (3.3%)	31 (14.5%)	95 (44.4%)	74 (34.6%)	4.04	0.959	214 (100)
Sub-Composite mean and standard deviation						3.13	0.875	
Taking over of project documents								
C-06 Project team was involved in the preparation, review and submission of	0 (0.0%)	8 (3.7%)	29 (13.6%)	114 (53.3%)	63 (29.4%)	4.08	0.758	214 (100)

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev.	Total F (%)
as-built drawings and the project completion reports to the client.								
C-07 The stakeholders witnessed the client (government) taking over the project documents for use in the operation and maintenance phase after completion of the project.	0 (0.0%)	3 (1.4%)	32 (15.0%)	119 (55.6%)	60 (28.0%)	4.10	0.691	214 (100)
C-08 Client created an action plan which identified the best stakeholder who can assess and provide the best expert testimony of the project.	1 (0.5%)	11 (5.1%)	51 (23.8%)	98 (45.8%)	53 (24.8%)	3.89	0.852	214 (100)
C-09 Stakeholders confirmed that all project requirements were satisfactorily completed by the contractor, and all promises were kept.	0 (0.0%)	6 (2.8%)	27 (12.6%)	101 (47.2%)	80 (37.4%)	4.19	0.760	214 (100)
C-10 Stakeholders reviewed client notes to ensure that any requests have been attended to and that the site is truly ready to be handed over.	2 (0.9%)	1 (0.5%)	21 (9.8%)	104 (48.6%)	86 (40.2%)	4.27	0.731	214 (100)
Sub-Composite mean and standard deviation						4.11	0.875	
Project commissioning								
C-11 Stakeholders were invited to ceremonies to mark the completion of all the project execution activities after certification that the project work was completed to the specified quality standards.	0 (0.0%)	6 (2.8%)	22 (10.3%)	111 (51.9%)	75 (35.0%)	4.19	0.729	214 (100)
C-12 The community and other stakeholders witnessed the inauguration of the project by the political leaders.	2 (0.9%)	14 (6.5%)	36 (16.8%)	88 (41.1%)	74 (34.6%)	4.02	0.929	214 (100)
C-13 Project team prepared large volumes and complex commissioning data, to guarantee adequate traceability of information.	1 (0.5%)	8 (3.7%)	74 (34.6%)	91 (42.5%)	40 (18.7%)	3.75	0.816	214 (100)
C-14 Checking and testing all functions of the completed road was done according to the design parameters.	1 (0.5%)	18 (8.4%)	41 (19.2%)	112 (52.3%)	42 (19.6%)	3.82	0.859	214 (100)
C-15 The construction material borrow pits were reinstated to the satisfaction of the land owners and environmental authority	3 (1.4%)	7 (3.3%)	36 (16.8%)	81 (37.9%)	87 (40.7%)	4.13	0.905	214 (100)
Sub-Composite mean and standard deviation						3.98	0.848	
Lessons learned								
C-16 Stakeholders participated in the discussion and recording of	52 (24.3%)	72 (33.6%)	49 (22.9%)	33 (15.4%)	8 (3.7%)	2.41	1.125	214 (100)

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev.	Total F (%)
lessons learned during the implementation of the project.								
C-17 Recording of lessons learned is useful in getting information from the stakeholders as to whether the project was delivered to the community as initially designed	0 (0.0%)	1 (0.5%)	41 (19.2%)	109 (50.9%)	63 (29.4%)	4.09	0.706	214 (100)
C- 18 Effectiveness of risk identification and response strategies was collaboratively carried out	141 (65.9)	55 (25.7)	12 (5.6)	6 (2.8)	0 (0)	1.45	0.729	214 (100)
C-19 Stating lessons learned is useful in getting information from the community and other stakeholders as to whether the project met their goals and objectives	0 (0.0%)	2 (0.9%)	54 (25.2%)	92 (43.0%)	66 (30.8%)	4.04	0.774	214 (100)
C-20 Stakeholders presented a summary of project strengths and weaknesses	117 (54.7%)	62 (29.0%)	29 (13.6%)	6 (2.8%)	0 (0.0%)	1.64	0.819	214 (100)
Sub-Composite mean and standard deviation						2.73	0.831	
Composite mean and standard deviation						**3.49**	**0.828**	

From Table 4.24, a composite mean and standard deviation were computed whereby a line item mean and standard deviation were used for comparison. On one hand, where the line item was found to be lower than the composite mean, the statement or the item influenced the outcome negatively. On the other hand, a lower standard deviation to the composite standard deviation was an indication that the responses were convergent or consistent and vise-versa.

Statement C-01, that stakeholders participated in the final inspection meeting to check the quality of the completed works, 107(50%) indicated agreement, 65(30.4%) indicated strong agreement, 36(16.8%) indicated neutral and 6(2.8%) indicated disagreement. The mean score was 4.08 greater than 3.49 the composite mean implying that stakeholders participated in the final inspection meeting to check the quality of the completed works and this would positively influence the overall completion of urban road transport infrastructure projects. The standard deviation was 0.762 more than 0.828 the composite standard deviation hence convergence in opinions.

Statement C-02, the community was invited to participate in project inspection, 159(74.3%) indicated strong disagreement, 30(14%) indicated disagreement, 13(6.1%) indicated agreement, 11(5.1%) indicated neutral and 1(0.5%) indicated strong agreement. The mean score was 1.44 less than 3.49 the composite mean indicating that the community was not invited to participate in project inspection and this negatively influenced road completion. The standard deviation on the statement was 0.880 greater than the composite standard deviation of 0.828 which implied divergence in opinions.

Statement C-03, that the community was invited to give comments on any uncompleted works, 84(39.3%) indicated disagreement, 67(31.3%) indicated strong disagreement, 37(17.3%) indicated neutral and 26(12.1%) indicated agreement. The line item mean obtained was 2.10 lower than the composite mean of 3.49 implying that as part of the stakeholders, community were not invited to give their comments on any uncompleted works and this could have negatively influenced completion of road projects. The standard deviation was 0.983 greater than the composite standard deviation of 0.828 suggesting divergence in opinions.

Statement C-04, that timely and appropriate inspections were collaboratively carried out to address quality problems, 115(53.7%) indicated agreement, 55(25.7%) indicated strong agreement, 36(16.8%) indicated neutral, 6(2.8%) indicated disagreement, 2(0.9%) indicated strong disagreement. The mean was 4.00 greater than the composite mean of 3.49 implying that all stakeholders were involved in timely and appropriate inspections to address quality problems and hence positive influence on the completion of road infrastructure projects. Opinions converged since the statement had a lower standard deviation of 0.790 compared to composite standard deviation of 0.828.

Statement C-05, that site construction managers brought on board project inspectors to identify detectable defects before they are covered up, 95(44.4%) indicated agreement, 74(34.6%) indicated strong agreement, 31(14.5%) indicated neutral, 7(3.3%) indicated strong disagreement and 7(3.3%) indicated disagreement. The mean score was 4.04 greater than composite mean of 3.49 an indication that site construction managers bring on board project inspectors to identify detectable defects before they are covered up and this positively influence road completion in urban road transport infrastructure projects. The standard deviation was 0.959 greater than 0.828 the composite standard deviation implying divergence in opinions recorded.

Statement C-06, that project teams were involved in the preparation, review and submission of as-built drawings and the project completion reports to the client, 114(53.3%) indicated agreement, 63(29.4%) indicated strong agreement, 29(13.6%) indicated neutral, 8(3.7%) indicated disagreement. The statement had a mean score of 4.08 above the composite mean of 3.49 implying that the stakeholders were satisfied that project teams were involved in the preparation, review and submission of as-built drawings and the project completion reports to the client. It also means that it influenced completion of road infrastructure positively. The standard deviation obtained on the statement was 0.758 below the composite standard of 0.828 indicating convergence of opinions.

Statement C-07, that the stakeholders witnessed the client (government) taking over the project documents for use in the operation and maintenance phase after completion of the project, 119(55.6%) indicated agreement, 60(28%) indicated strong agreement, 32(15%) indicated neutral, 3(1.4%) indicated disagreement. The mean was 4.10 above the composite mean of 3.49, hence the finding imply that the client stored the project documents for use in the operation and maintenance phase after completion of the project and this would negatively influence the road completion. Proper documentation of vital information needs to be taken care of and maintained in the future projects. The standard deviation on this statement was 0.691 lower than 0.828 the composite standard deviation hence opinions converged.

Statement C-08, that client created an action plan which identified the best stakeholder who can assess and provide the best expert testimony of the project, 98(45.8%) indicated agreement, 53(24.8%) indicated strong agreement, 51(23.8%) indicated neutral, 11(5.1%) indicated disagreement, 1(0.5%) indicated strong disagreement. The mean was 3.89 above than 3.49 the composite mean. This implies that client created an action plan, which could helped identify the best stakeholder to assess and provide the best expert testimony of the project. This therefore positively influenced the completion of road infrastructure projects. The standard deviation was 0.852 higher than 0.828 the composite standard deviation indicating opinions diverged.

Statement C-09, that stakeholders confirmed that all project requirements were satisfactorily completed by the contractor, and all promises were kept, 101(47.2%) indicated agreement, 80(37.4%) indicated strong agreement, 27(12.6%) indicated neutral, 6(2.8%) indicated disagreement. The line item mean was 4.19 higher than 3.49 the composite mean which imply that the project team confirmed that the contractor satisfactorily completed all project requirements, while keeping all promises. This positively influenced road completion.

However, a standard deviation of 0.760 was rather low than the composite standard of 0.828 implying that opinions were consistent.

Statement C-10, that stakeholders reviewed client notes to ensure that any requests have been attended to and that the site is truly ready to be handed over, 104(48.6%) indicated agreement, 86(40.2%) indicated strong agreement, 21(9.8%) indicated neutral, 2(0.9%) indicated strong disagreement 1(0.5%) indicated disagreement. The mean was 4.27 above 3.49 the composite mean. The finding indicates many stakeholders agreed that they reviewed client notes to ensure that any requests had been attended to and that the site was truly ready to be handed over and this would positively influence the overall completion of urban road transport infrastructure projects. The standard deviation was 0.731 lower compared to composite standard deviation of 0.828 confirming that opinions among the respondents were largely converging.

Statement C-11, that stakeholders were invited to ceremonies to mark the completion of all the project execution activities after certification that the project work was completed to the specified quality standards, 111(51.9%) indicated agreement, 75(35%) indicated strong agreement, 22(10.3%) indicated neutral and 6(2.8%) indicated disagreement. A higher mean of 4.19 was obtained above the composite mean of 3.49 which implied that stakeholders were invited to ceremonies to mark the completion of all the project execution activities after certification that the project work was completed to the specified quality standards and this would positively influence the completion of road. The standard deviation was 0.729 lower than 0.828 the composite standard deviation indicating convergence of opinions.

Statement C-12, that the community and other stakeholders witnessed the inauguration of the project by the political leaders, 88(41.1%) indicated agreement, 74(34.6%) indicated strong agreement, 36(16.8%) indicated neutral, 14(6.5%) indicated disagreement, 2(0.9%) indicated strong disagreement. The mean was 4.02 above the composite mean of 3.49 implying that the community and other stakeholders witnessed the inauguration of the project by the political leaders. This item positively influenced the overall completion of urban road. The standard deviation was 0.929 higher than 0.828 the composite standard deviation indicating that opinions diverged.

Statement C-13, that stakeholders confirmed that the project team prepared large volumes and complex commissioning data, to guarantee adequate traceability of information, 91(42.5%) indicated agreement, 74(34.6%) indicated neutral, 40(18.7%) indicated strong agreement, 8(3.7%) indicated disagreement and 1(0.5%) indicated strong disagreement. The mean was 3.75 higher than the composite mean of 3.49 implying that project team actually prepared large volumes and complex commissioning data, which guaranteed adequate traceability of information hence a positive influence on the completion of road infrastructure projects. The standard deviation was 0.816 lower than the composite standard deviation of 0.828 implying that opinions converged.

Statement C-14, that checking and testing all functions of the completed road was done according to the design parameters, 112(52.3%) indicated agreement, 42(19.6%) indicated strong agreement, 41(19.2%) indicated neutral, 18(8.4%) indicated disagreement and 1(0.5%) indicated strong disagreement. The mean was 3.82 higher than the composite mean of 3.49, which implied that stakeholders ensured that checking and testing of all functions of the completed road was done according to the used design parameters. This in turn positively influenced the overall completion of urban road infrastructure projects. The standard deviation on this item was 0.859 higher than the composite standard deviation of 0.828 hence divergence in opinions.

Statement C-15, that the construction material borrow pits were reinstated to the satisfaction of the land owners and environmental authority, 87(40.7%) indicated strong agreement, 81(37.9%) indicated agreement, 36(16.8%) indicated neutral, 7(3.3%) indicated disagreement, 3(1.4%) indicated strong disagreement. The mean was 4.13 higher than the composite mean of 3.49 implying that client and the consultants ensured that the contractor reinstated and made good the construction material borrow pits to the satisfaction of the land owners and environmental authority. This in turn had a positive influence on the completion of road infrastructure projects. The standard deviation was 0.905 higher than the composite standard deviation of 0.828 hence divergence in opinions.

Statement C-16, that stakeholders participated in the discussion and recording of lessons learned during the implementation of the project, 72(33.6%) indicated disagreement, 52(24.3%) indicated strong disagreement, 49(22.9%) indicated neutral, 33(15.4%) indicated agreement and 8(3.7%) indicated strong agreement. The mean was 2.41 lower than composite mean of 3.49 which implied that stakeholders did not participate in the discussion and recording of lessons learned during the implementation of the project. This had a negative bearing on the completion of road infrastructure projects. The standard deviation was 1.125 higher than the composite standard deviation of 0.828 implying divergence in opinions.

Statement C-17, recording of lessons learned is useful in getting information from the stakeholders as to whether the project was delivered to the community as initially designed, 109(50.9%) indicated agreement, 63(29.4%) indicated strong agreement, 41(19.2%) indicated neutral, 1(0.5%) indicated disagreement. The mean was 4.09 higher 3.49 the composite mean implying that recording of lessons learned was useful in getting information from the stakeholders as to whether the project was delivered to the community as initially designed. This positively influenced the completion of road. The standard deviation was 0.706 lower than the composite standard deviation, 0,828, indicating that opinions gathered converged.

Statement C-18, that effectiveness of risk identification and response strategies was collaboratively carried out, 141(65.9%) indicated strong disagreement, 55(25.7%) indicated disagreement, 12(5.6%) indicated neutral and 6(2.8%) indicated agreement. The mean was 1.45 lower than 3.49 the composite indicating that stakeholders were not involved in assessment of whether risk identification and response strategies were effective and this negatively influenced the completion of urban road infrastructure projects. The standard deviation was 0.729 lower than 0.828 the composite standard deviation hence convergence of opinions.

Statement C-19, stating lessons learned is useful in getting information from the community and other stakeholders as to whether the project met their goals and objectives 92(43%) indicated agreement, 66(30.8%) indicated strong agreement, 54(25.2%) indicated neutral, 2(0.9%) indicated disagreement. The mean was 4.04 higher than the composite mean of 3.49 implying a strong agreement with the statement. This in turn positively influenced road completion. The standard deviation was 0.774 lower than the composite mean of 0.828, an indication that opinions converged.

Statement C-20, stakeholders presented a summary of project strengths and weaknesses 117(54.7%) indicated strong disagreement, 62(29%) indicated disagreement, 29(13.6%) indicated neutral and 6(2.8%) indicated agreement. The mean was 1.64 lower than the sub-composite mean of 2.73 implying that stakeholders did not present a summary of project strengths and weaknesses which negatively influenced the completion of road. The standard deviation on this item was 0.819 lower than 0.831 the sub-composite standard deviation, implying convergence of opinions recorded.

4.9.2 Qualitative Information of Stakeholder Participation in Project Closure and Completion of Urban Roads Infrastructure Projects

To facilitate deeper and more holistic understanding on this variable, qualitative information was gathered from expressed opinions through opened-ended questionnaires and face-to-faced interviews on the issues and indicators. The respondents were first of all asked to indicate whether they think whether it imperative to engage communities and stakeholder's in the project closure. The findings were as shown in Table 4.25.

Table 4.25: Community Participation in the Project Closure

Responses	Frequency	Percentage
Yes	201	93.9
No	13	6.1
Total	**214**	**100.0**

From the findings (Table 4.25), the respondents indicated that they think stakeholder should participate in the project closure as shown by 93.9%. According to them, this is very crucial because communities are the main beneficiaries of the projects, and as a result they; can offer suggestion on how to improve some sections of the road where they feel it was not done well, can witness and see the importance of the project, can ensure that the road is high standard before project is considered complete, and can as well ensure that any unresolved issue is solved and community will always act as the bench mark on which the final product is gauged thus they should participate. They also indicated that it is because they assess the quality of the project, they help identifying a problem that was not seen by the other stakeholders, they access whether the project objectives have been achieved.

The respondents were further asked to indicate which particular stakeholders are very critical in participation in the project closure phase. The responses indicated that; the society, the community, investors, the government, government agencies, project managers, client, local authorities, consultants, the contractor, services providers, elected leaders, project affected persons, national road authority, local key informants, the project manager, the government, the construction company, electric power and water agency are important stakeholders for urban road construction projects.

On whether or not the respondents think stakeholder participation assists to achieve a quality project during the final stage of the project, most of the respondents were in support of the statement. They particularly observed that it will ensure that; the contractor doesn't leave unnecessary gaps or holes along the road which might be dangerous to the residents, help avoid laxity in the process which may compromise the quality of the project, by maintaining the checks and balances to ensure the output is what was agreed on and that their concern and interests have been addressed, helps identify the problems and offering solutions, will ensure that monitoring and evaluation process led to both stakeholder empowerment and ownership of the project, by making sure that everything is completed according to the agreement and plan and by helping in confirming whether the project has achieved the intended objectives.

Upon seeking their opinion on whether the provision of foot paths and foot bridges reduced pedestrian and vehicle conflicts, most of SACCO representatives sounded affirmative.

For instance, SACCORep-10 noted that,

> *"Provision of foot paths and foot bridges have not reduced pedestrian/vehicle conflicts since the road has inadequate foot bridges and accidents between pedestrians and the vehicles are still high".*

SACCORep-11 said that,

> *"Yes, the pedestrians / vehicle conflict has been reduced due to the provision of foot path and footbridges because it has reduced traffic on the roads and the theft cases has been reduced and more so there is limited accidents".*

SACCORep-12 said that,

> *"Yes, the provision of foot path has really helped to reduce accidents and also it has somehow disciplined drivers who when avoiding traffic would use pedestrian footpaths."*

When asked about the condition of the road surface in terms of smoothness or passenger comfort, majority of the SACCO representatives said that the completed road sections roads are smooth and comfortable since pot holes are reduced, hence easy movement for vehicles and passengers.

SACCORep-13 said that:

> *"The roads are indeed smooth compared from before hence the vehicle does not affect passengers when transporting them because the roads are not bump. Also the road is very comfortable for the passengers since it is not bumpy and one enjoyed their journey to and from home".*

SACCORep-14 said that,

> *"The condition of the surface is very good. The smoothness is okay and passenger comfort has been enhanced due to the free- flowing journey they have come to enjoy to and from their residences. Passengers now enjoy a relaxed and quiet trip since the road is smooth in a way that suits passengers on board."*

However, SACCORep-5 complained that,

> *"There are too many bumps along the road which rather affects the comfort ability of the passengers each time vehicles drive over the bumps. The bumps are a source of inconvenience since passengers are slightly thrown back and forth as vehicles cross the bumps."*

4.9.3 Correlation between Participation in Stakeholder Participation in Project Closure and Completion of Urban Road Transport Infrastructure Projects

Analysis was carried out so as to establish the direction and magnitude of the relationship between the independent and dependent variables under investigation. This was in line with the fourth objective of this study which was establish how participation in project closure influences completion of urban road transport infrastructure projects in Kenya. Participation in project closure was measured by inspection and acceptance, taking over of project documents, project commissioning and lessons learned while completion of urban roads transport infrastructure projects was measured by project completion within time, project completion within cost, project completion within quality and stakeholder satisfaction. Data was collected from the respondents on participation in project closure variables and then of the composite index on each of the participation in project closure variable indicators (inspection and acceptance, taking over of project documents, project commissioning and lessons learned) was computed and used in the analysis. The results are presented in Table 4.26.

Table 4.26: Correlation between Participation in Project Closure and Completion of Urban Road Transport Infrastructure Projects

Correlations

Variables		Completion of urban road transport infrastructure projects	Stakeholder participation in project closure
Completion of urban road transport infrastructure projects	Pearson Correlation	1	0.855**
	Sig. (2-tailed)		0.042
	n	214	214
Stakeholder participation in project closure	Pearson Correlation	0.855**	1
	Sig. (2-tailed)	0.042	
	n	214	214

**Correlation is significant at 0.05 level of significant (2-tailed)

Results in Table 4.26 indicate participation in project closure has a positive strong and significant correlation with completion of urban road transport infrastructure projects ($r=0.855$; $p=0.042< 0.05$).

4.9.4 Regression Analysis of Influence of Stakeholder Participation in Project Closure and Completion of Urban Road Transport Infrastructure Projects in Kenya

Moreover, the study conducted linear regression analysis to establish how participation in project closure influences completion of urban road transport infrastructure projects in Kenya. The fourth hypothesis was also testing by collecting data w from the respondents on participation in project closure variables and then computing and using composite index for each of the project closure variable indicators (inspection and acceptance, taking over of project documents, project commissioning and lessons learned) in the analysis. The following hypothesis that was in line with objective four was formulated and tested.

Hypothesis Testing

The following hypothesis was tested using simple regression model to satisfy the fourth objective.

4. **H_0:** Stakeholder participation in project closure does not significantly influence completion of urban road transport infrastructure projects in Kenya.

H_1: There is a significant relationship between stakeholder participation in project closure on completion of urban road transport infrastructure projects in Kenya

Regression Model

The mathematical model used for testing the null hypothesis was as follows:

Completion of urban road transport infrastructure projects = f (Participation in project closure)

$$Y = f(X_4, \varepsilon)$$

$$Y = \beta_0 + \beta_4 X_4 + \varepsilon$$

Where: Y = Completion of urban road transport infrastructure projects

X_4 = Participation in project closure

β_0 = Constant term

β_4 = Beta coefficients

ε = Error term

Data was analyzed and the regression results for the influence of participation in project closure on completion of urban road transport infrastructure projects in Kenya are presented in Table 4.27.

Table 4.27: Participation in Project Closure and Completion of Urban Road Transport Infrastructure Projects

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.855	0.730	0.729	1.081

ANOVA						
Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig**
1	Regression	671.009	1	671.009	574.517	.000
	Residual	247.606	212	1.168		
	Total	**918.615**	**213**			

Regression Coefficients						
		Unstandardized Coefficients		**Standardized Coefficients**	**t**	**Sig.**
Model		**B**	**Std. Error**	**Beta**		
1	(Constant)	0.917	0.208		4.409	.000
	Participation in project closure	0.911	0.265	0.855	3.438	.001

Predictors: (constant), Stakeholder participation in project closure
Dependent Variable: Completion of urban road transport infrastructure projects

Results in Table 4.27 shows that r=0.855. This indicates that participation in project closure has a strong relationship with completion of urban road transport infrastructure projects in Kenya. R^2 = 0.730 indicating that participation in project closure explains 73% of the variations in the completion of urban road transport infrastructure projects in Kenya.

The overall F statistics, ($F = 574.517$, $p<0.000<0.05$), indicated that there was a very statistical significant relationship between participation in project closure and completion of urban road transport infrastructure projects in Kenya. The null hypothesis was therefore rejected and it was concluded that participation in project closure significantly influences completion of urban road transport infrastructure projects in Kenya.

4.9.5 Discussion of Findings Participation in Project Closure and Completion of Urban Road Transport Infrastructure Projects

The findings of the current show that there was little inspection and acceptance of the completed projects (Statements C-02, C-03) which eventually affected the lessons learned or otherwise 'knowledge transfer'by stakeholdwers not taking part in discussion of lessons learned, risk identification and presenting project strengths and weaknesses (Statements C-16, C-18, C-20) respectively). This implies that there was poor closure of the project since Maunda and Moronge (2016) noted that project closure is crucial in handing over the project deliverables to the concerned customers [stakeholders] to be able to consolidate best practices and or lessons learnt for improvement of future projects. It is therefore important to emphasize the presence of every stakeholder in the closure. This supports Bizon-Górecka and Górecki (2017) whose study revealed that project investor (owner), site manager and project supervisors should be present during closure of the project.

The findings from the current study study also contradicts O'Halloran (2014) who found that construction managers were engaging stakeholders during project closure. This implies that there is critical need to ensure that all stakeholders are involved or do participate even in the last phase of project execution to ensure that not only positive exchange of best practices are shared but also the challenges for future reference and especially avoiding to repeat the same mistakes.

4.10 Combined Stakeholder Participation in project lifecycle management and Completion of Urban Road Transport Infrastructure Projects

The fifth objective of this study was to examine how combined stakeholder participation in project lifecycle management influences the completion of urban road transport infrastructure projects in Kenya.

4.10.1 Descriptive Analysis of Combined Stakeholder Participation in project Lifecycle and Completion of Urban Road Transport Infrastructure Projects

The combination of participation in project initiation, participation in project planning, participation in project execution and participation in project closure was referred to as combined stakeholder participation in project lifecycle management. The combined influence of these factors on completion of urban road transport infrastructure projects was tested using inferential statistics.

Table 4.28: Descriptive Analysis of Combined Stakeholder Participation in project Lifecycle and Completion of Urban Road Transport Infrastructure Projects

Variable Dimension / indicator	Mean (M)	Std Dev
Stakeholder participation in project initiation	3.50	0.921
Stakeholder participation in project planning	3.59	0.958
Stakeholder participation in project execution	3.93	0.847
Stakeholder participation in project closure	3.49	0.828
Composite mean and standard deviation	3.63	0.889

Results in Table 4.28 indicate that the overall mean of combined stakeholder participation in project lifecycle was 3.63. Dominant was stakeholder participation in project execution (M=3.93), This shows that stakeholder got a chance to participate in execution pahse which significantly and positively influenced the road project performance in terms of completion. The standard deviation was 0.847 lower than the composite standard deviation of 0.889, which implied convergence of opinions.

Stakeholder participation in project initiation (M=3.50) did not influence completion of urban road transport infrastructure project positively since the line item mean was below the composite. The standard deviation on this item was 0.921 greater than the composite standard deviation of 0.889, which implied divergence of opinions.

Stakeholder participation in project planning (M=3.59)did not positively influence the completion of urban road transport infrastructure project. The standard deviation was 0.958 greater than the composite standard deviation of 0.889, which implied divergence of opinion.

Stakeholder participation in project closure (M=3.49), does not seem to influence the completion of urban road transport infrastructure projects. The standard deviation was 0.828 lower than the composite standard deviation of 0.889, which implied consistency in opinions.

4.10.2 Correlation between Combined Stakeholder Participation in project Lifecycle Management and Completion of Urban Road Transport Infrastructure Projects

Correlational analysis of combined stakeholder participation in project lifecycle management as the independent variable and completion of urban road transport infrastructure projects as the dependent variable was conducted to examine the strength and direction of the relationship. The results are presented in Table 4.29.

Table 4.29: Correlation between Stakeholder Participation in Project Lifecycle Management and Completion of Urban Road Transport Infrastructure Projects

Correlations

Variables		**Combined stakeholder particpation in project life cycle management**	**Participation in project initiation**	**Participation in project planning**	**Participation in project execution**	**Participation in project closure**
Completion of urban road transport infrastructure projects	Pearson Correlation	0.849	0.859	0.838	0.796	0.855
	Sig. (2-tailed)	0.000	0.015	0.011	0.028	0.042
	n	214	214	214	214	214

** Correlation is significant at 0.05 level of significant (2-tailed)

Results in Table 4.29 indicate positive and significant coefficients between the variables. Participation in project initiation had a strong and positive correlation on completion of urban road transport infrastructure projects (r=0.859, p=0.015), participation in project planning and completion of urban road transport infrastructure projects were strongly and positively correlated (r=0.838, p=0.011), participation in project execution and completion of urban road transport infrastructure projects were also strongly and positively correlated (r=0.796, p=0.028) while participation in project closure and completion of urban road transport infrastructure projects were established to have a strong and positive correlation (r=0.855, p=0.042). This is an indication that combined stakeholder participation in project lifecycle management (r=0.849, p=0.000) has a positive influence on completion of urban road transport infrastructure projects in Kenya.

4.10.2 Regresion Analysis of Combined Stakeholder Participation in Project Lifecycle Management on Completion of Urban Road Transport Infrastructure Projects

Additionally, multiple regression analysis was conducted in line with objective five which sought to examine how combined stakeholder participation in project lifecycle management influences the completion of urban road transport infrastructure projects in Kenya. Combined stakeholder participation in project lifecycle management included participation in project initiation, participation in project planning, participation in project execution and participation in project closure. A composite index for each of the variables was computed and used in the hypothesis testing. The null hypothesis in line with objective five was tested using the linear regression.

Hypothesis Testing

The following hypothesis was tested using simple regression model to satisfy the fifth objective

5. **H_0:** Combined participatory project life cycle management does not significantly influence completion of urban road transport infrastructure projects in Kenya.

H_1: There is a significant relationship between combined participatory project life cycle management and completion of urban road transport infrastructure projects in Kenya.

Regression Model

The mathematical model used for testing the null hypothesis was as follows:

Completion of urban road transport infrastructure projects = f (participation in project initiation, participation in project planning, participation in project execution and participation in project closure)

$$Y = f(X_1, X_2, X_3, X_4, \varepsilon)$$

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

Where Y = Completion of urban road transport infrastructure projects

X_1 = Stakeholder participation in project initiation

X_2 = Stakeholder participation in project planning

X_3 = Stakeholder participation in project execution

X_4 = Stakeholder participation in project closure

β_0 = Constant term

β_1, β_2, β_3 and β_4 = Beta coefficients

ε = Error term

Data was analyzed and the regression results for the influence of combined participatory project life cycle management on completion of urban road transport infrastructure projects in Kenya are presented in Table 4.30.

Table 4.30: Combined stakeholder participation in Project Life cycle Management and Completion of urban road transport infrastructure projects

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.849	0.721	0.715	1.298

ANOVA						
Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig**
	Regression	921.983	4	230.496	134.785	0.000[b]
1	Residual	357.41	209	1.710		
	Total	**1279.393**	**213**			

Regression Coefficients						
		Unstandardized Coefficients		**Standardized Coefficients**	**t**	**Sig.**
Model		**B**	**Std. Error**	**Beta**		
1	(Constant)	1.267	0.182		6.962	0.001
	Stakeholder participation in project initiation	0.889	0.143	0.859	6.217	0.014
	Stakeholder participation in project planning	0.895	0.245	0.838	3.653	0.013
	Stakeholder participation in project execution	0.802	0.212	0.796	3.783	0.007
	Stakeholder participation in post-closure	0.911	0.265	0.855	3.438	0.016

Predictors: (constant), Stakeholder participation in project initiation, Stakeholder participation in project planning, Stakeholder participation in project execution, Participation in project closure
Dependent Variable: Completion of urban road transport infrastructure projects

Table 4.30 shows that r=0.849. This indicates that combined stakeholder participation in project lifecycle management has a strong relationship with completion of urban road transport infrastructure projects in Kenya. R^2 = 0.721 indicating that combined stakeholder participation in project lifecycle management explains 72.1% of the variations in the completion of urban road transport infrastructure projects in Kenya.

The results on test of significance also indicate that; stakeholder participation in project initiation ($p<0.014$), stakeholder participation in project planning ($p<0.013$), stakeholder participation in project execution ($p=0.007$), stakeholder participation in project closure ($p=0.016$) were all-significant at $p<0.05$ and 95% confidence level. A beta value of 0.859 means that a unit increase of stakeholder participation in project initiation contributed to 85.9% increase in completion of urban roads transport infrastructure projects. A beta value of 0.838 means that a unit increase of stakeholder participation project planning contributed to 83.8% increase in completion of urban roads transport infrastructure projects. A beta value of 0.796 means that a unit increase of stakeholder participation in project execution contributed to 79.6% increase in completion of urban roads transport infrastructure projects. A beta value of 0.855 means that a unit increase of stakeholder participation in project closure contributed to 85.5% increase in completion of urban roads transport infrastructure projects. This result implies that combined stakeholder participation in project lifecycle management explains 72.1% of the variations in the completion of urban road transport infrastructure projects in Kenya.

The overall F statistics, ($F = 134.785$, $p<0.000<0.05$), indicated that there was a very statistical significant relationship between combined stakeholder participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya. The null hypothesis was therefore rejected and it was concluded that combined stakeholder participation in project lifecycle management significantly influences completion of urban road transport infrastructure projects in Kenya.

Using the statistical findings in Table 4.30, the regression model can be substituted as follows:

$$\mathbf{Y = 1.267 + 0.859X_1 + 0.838X_2 + 0.796X_3 + 0.855X_4}$$

Where; X_1 = Stakeholder participation in project initiation

X_2 = Stakeholder participation in project planning

X_3 = Stakeholder participation in project execution

X_4 = Stakeholder participation in project closure

4.10.4 Discussion of Findings of Combined Stakeholder Participation in Project Lifecycle Management on Completion of Urban Road Transport Infrastructure Projects

The findings of this study show that the indiviudal phases or variables of stakeholder participation in project life cycles have strong positive and significant relationship with completion of road projects. The cobination of the whole cycle too shows that it influences road completion, thus, the findings are consistent with the study of Ndegwa, Mavole and Muhingi, (2017) who found that public participation influences project identification, project planning, project planning and project M&E for successful implementation of public funded projects. The findings further support Maunda and Moronge (2016) who found that the combined project life cycle management influenced completion of public projects in Kenya. Based on the descriptive analysis of the current study, stakeholders particiapatin in project execution (M=3.93) have positive influence have positive influence on completion of road projects. The least contributors, with perceived negative influence, include closure (M=3.49), initiation (M=3.50) and finally planning (M=3.59). The findings are therefore consistent with Kobusingye, Mungatu and Mulyungi (2017) who found that stakeholder or community participation during what he termed as implementation (execution) has positive influence on the project outcome. Although stakeholders may have indicated inadequate involvement during initiation, planning and closure phases, Moodley (2012) opined that the number and nature of stakeholders must vary with the life of the project. This implies that although it is not necessary to involve stakeholders in all and every stage of the project life cycle, the use of all the variables (combined phases/stages) under stakeholder participation in project lifecycle management still remains and would play a critical role in contributing to successful completion of projects as opposed to focusing on one phase only. This therefore signifies the importance of engaging stakeholders in all the four phases of the project lifecycle as advocated for by Mkutano and Sang (2018). However, Nyaguthii (2013) noted that stakeholder participation in project implementation was still minimal in Kenya. These fidnings hope to address issues that have always led to late complettion, cost overruns and poor quality of final products or roads transport instrastructure projects.

4.11 Risk Management Practices and Completion of Urban Road Transport Infrastructure Projects

Project risk management was the sixth objective of the study, where data was sought to assess how risk management practices influence the completion of urban road transport infrastructure projects in Kenya.

4.11.1 Descriptive Analysis of Risk Management Practices and Completion of Urban Road Transport Infrastructure Projects

Risk management practices were measured by risk identification, risk assessment, risk mitigation and risk monitoring. The respondents were asked to indicate their level of agreement on various statements linked to risk management practices indicators. The questionnaire had a 5 point Likert scale ranging from 5 = strongly agree, 4 = agree, 3 = Neutral, 2 = disagree and 1= strongly disagree. The results were presented in Table 4.31.

Table 4.31: Risk Management Practices and Completion of Urban Road Transport Infrastructure Projects

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev.	Total F (%)
Risk Identification								
R-01 Stakeholders identified land acquisition and relocation of utility service lines as risks	0 (0.0%)	3 (1.4%)	10 (4.7%)	76 (35.5%)	125 (58.4%)	4.51	0.655	214 (100)
R-02 Fluctuation in the cost of fuel and construction materials was identified as a risk	1 (0.5%)	9 (4.2%)	25 (11.7%)	96 (44.9%)	83 (38.8%)	4.17	0.830	214 (100)
R-03 Prolonged heavy rains was identified as a risk	5 (2.3%)	23 (10.7%)	22 (10.3%)	77 (36.0%)	87 (40.7%)	4.02	1.075	214 (100)
R-04 Design changes arising from unforeseen underground geological condition were identified as a risk	3 (1.4%)	13 (6.1%)	34 (15.9%)	100 (46.7%)	64 (29.9%)	3.98	0.911	214 (100)
R-05 Delayed payments is a common risk in road construction projects	11 (5.1%)	13 (6.1%)	18 (8.4%)	71 (33.2%)	101 (47.2%)	4.11	1.120	214 (100)
Sub-Composite Mean and Standard Deviation						4.16	0.918	
Risk Assessment								
R-06 All stakeholders involved in the assessment of the risks and uncertainties during the design phase of the projects	13 (6.1%)	121 (56.5%)	21 (9.8%)	42 (19.6%)	17 (7.9%)	2.67	1.104	214 (100)
R-07 The probability and impact of the risks was assessed by key stakeholders	43 (20.1%)	89 (41.6%)	18 (8.4%)	48 (22.4%)	16 (7.5%)	2.56	1.246	214 (100)
R-08 Delay in payments is a risk to the completion of the project.	1 (0.5%)	10 (4.7%)	21 (9.8%)	47 (22.0%)	135 (63.1%)	4.43	0.884	214 (100)
R-09 There were adequate road designs to curb the risk of delayed completion of the project	5 (2.3%)	27 (12.6%)	51 (23.8%)	93 (43.5%)	38 (17.8%)	3.62	0.994	214 (100)
R-10 Fluctuation in the cost of materials is not a risk to the project	57 (26.6%)	72 (33.6%)	43 (20.1%)	42 (19.6%)	0 (0.0%)	2.33	1.073	214 (100)
Sub-Composite mean and standard deviation						3.12	1.060	
Risk Mitigation								
R-11 Avoidance of land acquisition helped in reducing the risk of delay in completion of	7 (3.3%)	15 (7.0%)	12 (5.6%)	78 (36.4%)	102 (47.7%)	4.18	1.039	214 (100)

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev.	Total F (%)
the project.								
R-12 Sub-contracting the works, increasing human resources and construction equipment reduced the risk of delay in the project.	3 (1.4%)	15 (7.0%)	36 (16.8%)	85 (39.7%)	75 (35.0%)	4.00	0.964	214 (100)
R-13 I Regular meetings held with stakeholders helped manage risks	8 (3.7%)	14 (6.5%)	20 (9.3%)	104 (48.6%)	68 (31.8%)	3.98	1.007	214 (100)
R-14 Purchase of construction materials at the beginning of construction reduces the risk of fluctuation in prices and foreign exchange	6 (2.8%)	16 (7.5%)	36 (16.8%)	66 (30.8%)	90 (42.1%)	4.02	1.070	214 (100)
R-15 Addition of 10% of the construction cost estimates as a contingency to cover risks associated with unforeseen risks helped in road projects completion	0 (0.0%)	2 (0.9%)	31 (14.5%)	37 (17.3%)	144 (67.3%)	4.51	0.774	214 (100)
Sub-Composite mean and standard deviation						4.14	0.971	
Risk Monitoring and Controlling								
R-16 Monitoring and controlling of the road project's schedule and cost was observed	10 (4.7%)	27 (12.6%)	26 (12.1%)	110 (51.4%)	41 (19.2%)	3.67	1.068	214 (100)
R-17 A risk matrix was used throughout the project life cycle	159 (74.3%)	39 (18.2%)	5 (2.3%)	10 (4.7%)	1 (0.5%)	1.39	0.790	214 (100)
R-18 A material-laboratory on site was effectively used to monitor and control risks associated with poor quality of materials and workmanship.	2 (0.9%)	7 (3.3%)	41 (19.2%)	86 (40.2%)	78 (36.4%)	4.08	0.877	214 (100)
R-19 Monthly progress meetings assisted in monitoring and controlling risks associated with community complaints and slow progress of works.	3 (1.4%)	7 (3.3%)	22 (10.3%)	100 (46.7%)	82 (38.3%)	4.17	0.846	214 (100)
R-20 Dispute resolution board assisted in controlling construction risks associated with the project's costs through expeditious evaluation of contractors claims	4 (1.9%)	132 (61.7%)	27 (12.6%)	37 (17.3%)	14 (6.5%)	2.65	1.004	214 (100)
Sub-Composite mean and standard deviation						3.19	0.917	
Composite mean and standard deviation						**3.65**	**0.966**	

From Table 4.31, a composite mean and standard deviation were computed whereby a line item mean and standard deviation were used for comparison. On one hand, where the line item was found to be lower than the composite mean, the statement or the item influenced the outcome negatively. On the other hand, a lower standard deviation to the composite standard deviation was an indication that the responses were convergent or consistent and vise-versa.

Statement R-01, that stakeholders identified land acquisition and relocation of utility service lines as risks, 125(58.4%) of the respondents strongly agreed with the statement, 76(35.5%) agreed, 10(4.7%) were neutral and 3(1.4%) of the respondents disagreed with the statement. The mean was 4.51 higher than the composite mean of 3.65, which implies that stakeholders identified land acquisition and relocation of utility service lines as risks. This had a positive influence on the completion of urban roads. The standard deviation on the statement was 0.655 lower than 0.966 the composite standard deviation indicating convergence of opinions.

Statement R-02, that fluctuation in the cost of fuel and construction materials was identified as a risk, 96(44.9%) of the respondents agreed with the statement, 83(38.8%) strongly agreed, 25(11.7%) were neutral, 9(4.2%) disagreed while 1(0.5%) of the respondents strongly disagreed with the statement. The mean was 4.17 above the composite mean of 3.65, which shows that fluctuation in the cost of fuel and construction materials were identified as a risk to the final cost of the project leading to a positive influence on the road infrastructural completion. The standard deviation was 0.830 below the composite standard deviation, which was 0.966 showing that opinions converged.

Statement R-03, that prolonged heavy rains was identified as a risk, 87(40.7%) of the respondents strongly agreed with the statement, 77(36%) agreed, 23(10.7%) disagreed and 22(10.3%) were neutral while 5(2.3%) of the respondents strongly disagreed with the statement. The item mean score was 4.02 higher than the composite mean of 3.65 implying that prolonged heavy rains was identified as a risk that could cause delay to the project hence a by identifying this risk in time, it impacted positively on the completion of the road. The standard deviation was 1.075 higher than the composite standard deviation of 0.966, indication that opinions diverged.

Statement R-04, that design changes arising from unforeseen underground geological condition was identified as a risk, 100(46.7%) of the respondents strongly agreed with the statement, 64(29.9%) strongly agreed, 34(15.9%) were neutral and 13(6.1%) disagreed while

3(1.4%) of the respondents strongly disagreed with the statement. The mean was 3.98 above the composite mean of 3.65 which implied that design changes arising from unforeseen underground geological condition were identified as a risk which could affect the cost of the road project leading thus this early identification led to a positive influence on the road project completion. The standard deviation obtained on the statement was 0.911 below the composite standard deviation of 0.966 yielding to convergence of the opinions.

Statement R-05, that delayed payments is a common risk in road construction projects, 101(47.2%) of the respondents strongly agreed with the statement, 71(33.2%) agreed, 18(8.4%) were neutral, 13(6.1%) disagreed while 11(5.1%) of the respondents strongly disagreed with the statement. The mean of the statement was 4.11 higher than the composite mean of 3.65 implying that delayed payments is a common risk in construction or road projects. The standard deviation was 1.120 above the composite standard deviation of 0.966 which indicated that opinions diverged.

Statement R-06, All stakeholders were involved in assessment of the risks and uncertainties during the design phase of the projects, 121(56.5%) of the respondents disagreed with the statement, 42(19.6%) agreed, 21(9.8%) were neutral, 17(7.9%) strongly agreed and 13(6.1%) of the respondents strongly disagreed with the statement. The mean was 2.67 was lower than the composite mean of 3.65 implying that stakeholders were not all involved in the assessment of the risks and uncertainties during the design phase of the projects. This had a negative influence on the project considering that inability to involve all the stakeholders in risk assessment would mean some challenges encountered along the implementation phase presented a new scenario that the project team could not handle. This therefore needs to be factored in the future road project planning stages. The standard deviation was 1.104 above the composite standard deviation of 0.966, hence divergence of opinions.

Statement R-07, that the probability and impact of the risks was assessed by key stakeholders and helped in controlling the project cost, time and quality, 89(41.6%) of the respondents disagreed with the statement, 48(22.4%) agreed, 43(20.1%) strongly disagreed, 18(8.4%) were neutral and 16(7.5%) of the respondents strongly agreed with the statement. The mean was 2.56 below the composite mean of 3.65 thereby indicating that the probability and impact of the risks was not assessed by key stakeholders and hence did not help in controlling the project cost, time and quality, hence poor or late completion of the road projects in urban areas. Generated on this statement was a higher a standard deviation of 1.246 compared to the composite standard deviation of 0.966 implying that opinions diverged.

Statement R-08, that delay in payments is a risk to the completion of the project, 135(63.1%) of the respondents strongly agreed with the statement 47(22%) agreed, 21(9.8%) were neutral, 10(4.7%) disagreed and 1(0.5%) of the respondents strongly disagreed with the statement. The mean score was 4.43 higher than the composite mean of 3.65 which implied that delay in payments was properly assessed and ranked as the highest risk to the completion of the project. This also indicates this item has a significant influence on the completion of road projects. Opinions on this statement converged since the standard deviation was 0.884 lower than the sub-composite standard deviation of 0.966.

Statement R-09, that there were adequate road designs to curb the risk of delayed completion of the project, 93(43.5%) of the respondents agreed with the statement, 51(23.8%) were neutral, 38(17.8%) strongly agreed, 27(12.6%) disagreed and 5(2.3%) of the respondents strongly disagreed with the statement. The mean score was 3.62 lower than the composite mean of 3.65. Based on these results, it is clear that inadequate road design has a medium risk hence it does have some negative influence on completion of the road if not properly considered during implementation period. The standard deviation was 0.994 lower than the composite standard deviation of 0.966 suggesting that opinions were consistent.

Statement R-10, that fluctuation in the cost of materials is not risk to the project, 72(33.6%) of the respondents disagreed with the statement, 57(26.6%) strongly disagreed, 43(20.1%) were neutral and 42(19.6%) of the respondents agreed with the statement agreed. The mean was 2.33 lower than the composite mean of 3.65 implying that fluctuation in the cost of materials was perceived as a risk to the completion of road projects hence it did negatively influence the completion of road project. This could indicate that the roads were constructed when the market pricess had stabilized hence delay in completion. The standard deviation of this statement was 1.073 higher than the composite standard deviation of 0.966 implying that opinions were not consistent.

Statement R-11, that avoidance of land acquisition helped in reducing the risk of delay in completion of the project, 102(47.7%) indicated a strong agreement, 78(36.4%) indicated an agreement, 15(7%) indicated a disagreement, 12(5.6%) indicated neutral, 7(3.3%) indicated a strong disagreement. The mean was 4.18 above the composite mean of 3.65, which implied that avoidance of land acquisition helped in reducing the risk of delay in completion of the project and this positively influence the completion of road. The standard deviation was 1.039 above 0.966 the composite standard deviaton hence opinions diverged.

Statement R-12, that sub-contracting the works, increasing human resources and construction equipment reduced the risk of delay in the project, 85(39.7%) indicated an agreement, 75(35%) indicated a strong agreement, 36(16.8%) indicated neutral, 15(7%) indicated a disagreement and 3(1.4%) indicated a strong disagreement. The mean score was 4.00 higher than the composite mean of 3.65 implying that sub-contracting the works, having increased human resources and construction equipment positively reduced the risk of delay in the project. The line item thus did influence road completion positively. The standard deviation was 0.964 below the composite standard deviation of 0.966 which indicated convergence in opinions from the respondents.

Statement R-13, that regular meetings held with stakeholders helped manage risks, 104(48.6%) indicated an agreement, 68(31.8%) indicated a strong agreement, 20(9.3%) indicated neutral, 14(6.5%) indicated a disagreement and 8(3.7%) indicated a strong disagreement. The mean score was 3.98 above 3.65 the composite mean implying that regular meetings were held with stakeholders to manage risks. This impacted positively on the completion of road. The standard deviation was 1.007 higher than the composite standard deviation of 0.966 indicating that opinions diverged.

Statement R-14, that purchase of construction materials at the beginning of construction reduces the risk of fluctuation in prices and foreign exchange, 90(42.1%) indicated a strong agreement, 66(30.8%) indicated an agreement, 36(16.8%) indicated neutral, 16(7.5%) indicated a disagreement, 6(2.8%) indicated a strong disagreement. The mean was 4.02 above the composite mean of 3.65 which implied that purchase of construction materials at the beginning of construction reduced the risk of fluctuation in prices and foreign exchange and this would have much influence on the completion of road. The standard deviation on this statement was 1.070 above 0.966 of the composite standard deviation, hence opinions on the statement diverged.

Statement R-15, that addition of 10% of the construction cost estimates as a contingency to cover risks associated with unforeseen risks helped in road projects completion, 144(67.3%) indicated a strong agreement, 37(17.3%) indicated an agreement, 31(14.5%) indicated neutral, 2(0.9%) indicated a disagreement. The mean score was 4.51 higher than the composite mean of 3.65. This implied that it is a normal practice in the construction sector to add 10% of the construction cost estimate as a contingency to cover risks associated with unforeseen risks in road projects hence positively influencing completion of the road. The standard deviation was 0.774 lower than 0.966 the composite standard deviation implying that opinions were convergent.

Statement R-16, that monitoring and controlling of the road project's schedule and cost was observed, 110(51.4%) indicated an agreement, 41(19.2%) indicated a strong agreement, 27(12.6%) indicated a disagreement, 26(12.1%) indicated neutral, 10(4.7%) indicated a strong disagreement. The mean was 3.67 higher than the composite mean of 3.65 implying that stakeholders were involved in the supervision of the project to monitor and control the project schedule and cost, which influenced completion of the road positively. The standard deviation was 1.068 greater than the composite standard deviation, 0.916, hence divergence in respondents' opinions.

Statement R-17, that a risk matrix was used throughout the project life cycle, 159(74.3%) indicated a strong disagreement, 39(18.2%) indicated a disagreement, 10(4.7%) indicated an agreement, 5(2.3%) indicated neutral, 1(0.5%) indicated a strong agreement. The mean was 1.39 below the composite mean of 3.65 implying that either a risk matrix was not there or if it was there then it was used sparingly accross the project life cycle. This could have had a negative influence on completion of road projects. The standard deviation was 0.790 below the composite standard deviation, 0.966, suggesting convergence in opinions gathered.

Statement R-18, that material-laboratory on site was effectively used to monitor and control risks associated with poor quality of materials and workmanship, 86(40.2%) indicated an agreement, 78(36.4%) indicated a strong agreement, 41(19.2%) indicated neutral, 7(3.3%) indicated a disagreement, 2(0.9%) indicated a strong disagreement. The mean score was 4.08 higher than the composite mean of 3.65. This implied that a material-laboratory on construction site was effectively used in monitoring and controlling risks associated with poor quality of materials and workmanship. This further implies that the statement positively influenced completion of road. The standard deviation of the statement was 0.877 below 0.966 the composite standard deviation, hence opinions were consistent.

Statement R-19, monthly progress meetings assisted in monitoring and controlling risks associated with community complaints and slow progress of works, 100(46.7%) indicated an agreement, 82(38.3%) indicated a strong agreement, 22(10.3%) indicated neutral, 7(3.3%) indicated a disagreement, 3(1.4%) indicated a strong disagreement. The mean was 4.17 higher than the composite mean of 3.65 implying that monthly progress meetings played key role in assisting in monitoring and controlling risks associated with community complaints and slowing progress of works. This exercise had a positive influence on the completion of road. Convergence of opinions on this statement was supported by a lower standard deviation of 0.846 compared to a sub-composite standard deviation of 0.966.

Statement R-20, that dispute resolution board assisted in controlling construction risks associated with the project's costs through expeditious evaluation of contractors claims, 132 (61.7%) indicated a disagreement, 37(17.3%) indicated an agreement, 27(12.6%) indicated neutral, 14(6.5%) indicated a strong agreement, 4(1.9%) indicated a strong disagreement. The mean was score generated on this statement was 2.65 lower than the composite mean of 3.65 implying that dispute resolution board did not assist in controlling construction costs-related risks. This could have been affected by failure to expeditiously evaluate the contractors' claims. Eventually, this had a significant negative influence on completion of road projects. The standard deviation obtained was 1.004 higher than the composite standard deviation of 0.966 indicating that the opinions recorded from this statement were diverging.

4.11.2 Qualitative Information of Risk Management Practices and Completion of Urban Roads Infrastructure Projects

The respondents were asked to indicate in their opinions if the practice of adding 10% of the construction cost estimate as contingencies to cover risks associated with unforeseen risks in road projects cause unnecessary costs to the project. The results were as illustrated in Table 4.32.

Table 4.32: Effect of Adding 10% of the Construction Cost Estimate

	Frequency	Percent
Yes	47	22.0
No	167	78.0
Total	**214**	**100.0**

As per the results (Table 4.32), the respondents indicated that the practice of adding 10% of the construction cost estimate as contingencies to cover risks associated with unforeseen risks in road projects will not cause unnecessary costs to the project as shown by 78% of the respondents. In justifying why the contingency is used, the respondents indicated that risks are not separately evaluated, improper selection of contractors who are financially and technically unqualified to execute the works to completion, incomplete design pushed to consultants to do design review when contractor is on site which create loopholes for extension of time claims, delays, lack of skilled personnel (nepotism) in quality control positions, poorly written contracts, incomplete designs incomplete B.O.Qs items left out, poor feasibility studies that fails to identity underground geological conditions, risk of abandonment of project due to inadequate budgetary provision by the project promoters. Risk of cost increment due to encroachment on the right of way and construction to close to its toe pegs, inefficient road safety devices, there are a lot of unseen risks that at times affect the scope of works thus adding 10.0% as contingencies will help cater for such works and also at times the funds set aside for relocation of utilities is less than what actually spent thus the 10% can come handy and at least when the adding of 10% of construction is there when you have a challenge of raising of materials it helps. The respondents also explained that the funds are specifically for any unforeseen occurrences and if nothing of the sort occurs the funds are not misappropriated or expended without reason, that there will be reduction of cost on the material supply and that the risk associated with unforeseen risk in road projects will lead to reduction of compensation payments delay.

The findings are an indication that structured risk management practices are not employed in the road construction projects and the addition of 10% of construction cost as a contingency is assumed to cover many risks associated with the construction. This implies that risks are not properly identified, are not adequately assessed, and therefore risk mitigation, control and monitoring practices are not properly implemented.

Risks Identification

On the most common risks that respondents have experienced in the implementation of most road infrastructure projects, they indicated that:

> *"Poor project management, labour shortage, poor project management, unexpected increase in materials costs, prolonged rainy periods making it difficult for work to be done, safety concerns, incompetent individuals in areas of specialization, lack of accountability in hiring of the team, contractor laxity, expectations disparities between stakeholders and execution team, fatal*

accidents during execution, financial risk, designs error, environment risk, breakdown of equipment during excavation or other processes, provision of insurance covers, risks of unforeseen costs associated with unknown conditions at the start such as sub-surface geological conditions, timely review of design and re-employment of qualified supervisors (mitigation) management of risk was done by the key staff and projects engineer."

The respondents also stated that:

"stakeholder participation and consultation, design changes, change management, complex change request sometimes escalate the complexity of the project may throw it off cases, fluctuation of the cost of fuel and materials, political interference, change of scope, faulty designs, unknown site conditions, community displeasures, evacuation of informal settlement, an assessment of the current connectivity gaps, identification of complementary policy and appraisal to ensure project quantities are controlled."

Risk Mitigation

On the methods used to respond to the risks in the projects involved in, respondents indicated that:

"requesting the stakeholders to relocate their services on time, making good use of the dry periods to speed up construction, preparation of adequate resources beforehand, proper communication to enhance stakeholder participation and cooperation, alerting all workers to keep the equipment, putting safety measures for up and the public, having a monitoring and evaluation committee to ensure resources are appropriated accordingly and money directed to the right channels, efficient communication to stakeholders to avoid spending too much time on the lagging behind in the project, clear establishment of expectations to reduce discrepancies, reduce the financial distribution and put more concern to material supply, having more than enough equipment and machinery before the construction begins. Proper recruitment to get trained and experienced team to carry out the project and putting tapes and barricades of point of construction to avoid accidents."

The respondents also indicated:

"*communication with stakeholders on the better ways to mitigate risks, involving the consultant and client in order to advice on way forward, holding meetings with the community and stakeholders and that there was a team assigned to deal with that risks, buying materials in bulk to reduce cost of materials and increase economies of scale, mass education of the public on their role in the success of such a project thereby encouraging them to accept land compensation awarded to give way to the project, making sure that there is a strong and experienced team, which makes it easier to work with the experts and making sure that the money is paid on time, advice planning and survey to avoid land acquisition where necessary, close supervision and prior identification of challenges and mapping out of solutions, having liason officer at site such as health officer and language translator and sourcing for stronger and suitable equipment to deal with the excavation of all types of*

> *materials including rock and good cooperation with stakeholders. Strict supervision of the workers to ensure a pleasant job to the seniors- proper discussion with the contractor on issues regarding the worker's money to avoid work going on strike, early communication to service providers in areas where relocation of utility lines is necessary and sourcing of funds by the contractor to pay workers to progress, awaiting money to be released*."

The respondents were also asked to indicate whether there was any specific risk management staff to handle risk management and indicated that, "*risk official, safety supervisor, risk management officers, safety officer, environment officers and resident engineer who had done basic course on risk management.*"

Monitoring and controlling

The respondents were asked which measures they consider vital in improving project risk management practices for enhancement of success of urban road projects and they indicated:

> *"monitoring of the project by the planning department through audits, cooperation from the utility service provides by relocating their services lines in good time, ensuring proper communication amongst all stakeholders to ensure good transition of activities, observing safety management practices for all the workers, mobilizing the public about road safety, procurement of resources and materials to avoid shortage in the middle of the construction process, proper handling of finances to ensure the project doesn't stop where funds are depleted, devotion by the contractor to support the project to completion."*

The respondents also indicated:

> *"coordination among all parties involved to speed up operations, creation of a risk management department that identifies and understand the risks that may occur in their processes and address them in time, that stakeholders should avoid corruption and promote honesty, transparency and business like attitude, certified payments should be made timely, compensations should be made on fixed/gazette government rates, riparian way leaves should be mapped and community advised in advance of commencement of construction and hiring the project team well in advance and ensuring well trained and experienced team is selected for project development."*

The respondents further indicated:

> *"Engaging all the stakeholders in frequent meeting and discussing the challenges, high involvement of stakeholders in decision making processes and risk evaluation to make them feel part of the project, conducting adequate trials during design in form of pits and traffic studies which will go a long way in reducing uncertainties, exhaustive identification of relevant stakeholders at the initiation stage and incorporation of collected requirements into the contract, involving the stakeholders to push for funding or release of more money by the sponsor of the project, giving out directions*

> *on how to make the project better by engaging all the involved parties, proper communication with the service providers on planned relocation of service lines, encouraging community participation in meetings and discussions to educate them and sensitize them on the need to embrace the project, proper planning and allocation of enough money and proper supervision of the project and development of risk management strategies is built in construction/ contract/ project project lifecycle management."*

The respondents also indicated:

> *"Adequate time to be associated at planning stage to ensure all risks are identified and involve stakeholders during planning, training is required for key staff handling the projects to know how to handle risks, engaging the community to let them learn and understand the process to avoid having questions during the execution phase from the residents, creation of a good working relationship between the workers and the management to ensure efficient and effective flow of activities, proper discussions between the client and contractors regarding availability of finances throughout the project to avoid strikes / go slows, public education and awareness on issues that may affect them during implementation of the project, ensuring efficient and effective communication occurs with the service providers, having a trained personnel in the contractors team who can repair equipment and machinery and careful handling of the host community to ensure peace in the process of construction."*

Respondents were further asked to give their opinion on how stakeholders can contribute to risk management in road infrastructure projects. They indicated stakeholders:

> *"can play an important role by participating in project progress / monitoring meetings and the help management to tackle the challenges caused by relocation of utilities/ land issues, through identification of problems and tackling them early and collectively as opposed to shifting blame/ responsibilities from one corner to the other, assigning a risk management team to specifically tackle arising issues during implementation of the works, communicating to authority / contractor on the site on position where service lines cross the roads, involving stakeholders at early stage of the project (before project commencement), by fully implementing comprehensive framework of policy process and resources for system based for road maintenance, planning and managing, being responsive to requests of relocating their service lines for the service providers or even being ready to offer/sell their land for use in the construction of roads and the stakeholders introduces the rise escalation clause for contracts of some duration which contributes to risk management in the road infrastructure project."*

The respondents also indicated that stakeholders can contribute to risk management in road construction projects by:

> *"assessing the project planning, by embracing their interests and concerns and putting efforts in attending to them and letting the stakeholders monitor the project, through efficient and effective communication among themselves is key and that improves idea sharing which will ultimately benefit the project*

> *by selection of the best solutions from suggested alternatives, by attending the meetings and doing site inspections, working together towards a common goal (completion of project successfully), by helping through monitoring and controlling risks due to community uproar, by creating awareness on the importance of the project to the community, making sure that funds are available for the project and through supervision and monitoring the crucial parts of the projects e.g. cost."*

The respondents further indicated they contribute to risk management in road infrastructure projects through:

> *"rational analysis and assessment of risks solving and offering advice on how risks should be avoided or handled for the betterment of the project, by enacting mechanisms that enhance stakeholder commitment to their obligations, by reducing and uncovering risks and then discussing a plan to mitigate them before issues arises which in turn has a higher change percentage to increase the success of the project, by involving the entire community and other stakeholders from the beginning to the end of the project as this will take care of most of project risks, through establishment of a first aid team to attend to any injured worker and through detailed discussions and analysis on expected effects on the environment and services and communicating with the residents."*

From the interviews conducted with officials of utility lines along the road (power, water and sewerage service lines) the respondents made various comments. Most of interviewees (KPLC officials) said that relocation of service lines affects road construction because road authorities request the relocation of power lines very late into the commencement of road construction. They further explained that the process of relocation of power lines is very long and leads to cost overruns which affects the cost and delays the projects. The KPLC official, KPLC-13, said:

> "*The process of relocating power lines is long and costly, and I sometimes wonder why the road authorities only approach us when the contractor is already on site. Obviously then, the projects will have to be extended at a cost and hence the construction time is affected."*

Other KPLC officials said that legalities of obtaining right of way may be extensive and involving and all this goes to affect implementation of the plans, acquisition of right of way is sometimes made intricate which may end up stalling the progress of the relocation of power lines which only starts after the extent of the road reserve is determined and this can also have a slowing effect on the project.

KPLC-15 said:

> "*Consultation with the residents is another involving process which must be done to avoid conflict and this also may take time which has an effect on the projected timeframes*."

On the same note, officials of water companies said that they were requested to commence the process of removal and relocation of water and sewerage service lines for construction of road projects when the contractor was already on site. When asked whether they think relocation of water and sewerage service line has an influence on the completion of roads, most of water companies' officials said that, getting the staff to help in the process and getting the materials needed is a very involving process which may take some time thus adversely affecting completion of such projects.

The water company official, WASE-7 said that,

> *"Relocation of the water and sewer line affects road construction because sometimes it is expensive to relocate and there is not enough money so the delay of the material became an issue"*

WASE-4 said that,

> *"Relocation of water and sewer lines affect road construction because when the relocation of pipes is being done pipes are damaged, and it takes a long period to repair them, hence it affects the customers in that the services are tampered with.*"

The KPLC officials said that in their opinion the process of power line relocation should be considered as a major risk to project completion, because poor planning and misunderstanding among the parties cause delay in the project, if not done on time the relocation will not be completed on time, because it results to interruption of services, spillages and sometimes blockage of service lines.

KPLC-10 said that:

> "*Relocation of power lines should be considered as a major risk to project completion since when the contractor doesn't employ effective communication that means the power company may not be well prepared to relocate the service lines in question. This may somehow cause delay in the process of implementation lines the power company may take time giving way to the contractor".*

The officials of NLC, who are responsible for land acquisition, said that the risks related to land acquisition can be mitigated through identification of land owners at initiation phase of the project and engaging them to eliminate any chances of events that may delay the project occurring. relocation of the informal settlers who have encroached the way leaves to ensure swift relocation of service lines whenever necessary and through enforcement of development control measures which may ensure smooth completion of such project in the absence of conflicts and other delay causing processes.

NLC-7 official said:

> *"A feasibility study may also be conducted to give a clear picture from the resident's perspective. This may help avoid any disagreements during project implementation."*

Most of the land commission officials said that land acquisition process for road construction has always been a problem in the country and has been disrupting the progress of road construction for a long time in Kenya. The interviewees said it is because if land is not acquired on time the completion of the road project is affected. Lengthy processes of land acquisition are normally observed arising from lack of coordination between government agencies whose end result is delayed commencement of the project due to unavailability of land on time. The land owners get agitated especially where it involves giving possession of their land along with other assets without getting prompt payment. That creates conflicts between the community and the law enforcement agency thereby delaying project implementation.

Interviewees also said that risks of land acquisition may be mitigated through creation of awareness campaigns about such projects and their expected effects. In that way the residents will be mentally prepared and be receptive of such negotiations. The respondents also noted that delayed communication and payments for land are some of the major risks that affect completion of a project.

On mitigating risks, the land commission officials said that the government should set up resettlement policies to cater for the affected persons to minimize disputes while cooperation and consensus should characterize all the government agencies involved in identifying the affected persons and assessment of assets for compensation. The government should also try to create a friendly atmosphere by trying out voluntary land sale before invoking compulsory land acquisition while at the same time the acquiring authority and the benefiting body should put up proper mechanisms to involve land owners in the initial design stage since most land owners learn of government projects during construction time and when land acquisition process kicks off, which should not be the case.

NLC-6 said:

> *"proper guidance must be made before any project can start and customers should avoid operating their business on road reserves. It's for their own benefits, when all the mitigation recommendations are employed, land acquisition or relocation of service lines cannot be risk to project completion because all the plans and possible cases will have been taken care of, public consultation process should also be employed to involve them in handling the issues that may arise due to actions by K.PLC or the contractor which may require relocation of such services and all the stakeholders should work together to the best interest of such projects which are meant to benefit the general public."*

4.11.3 Correlation between Risk Management Practices and Completion of Urban Road Transport Infrastructure Projects

Analysis was carried out so as to establish the direction and magnitude of the relationship between the independent and dependent variables under investigation. This was in line with the sixth objective of this study which was to assess how risk management practices influence the completion of urban road transport infrastructure projects in Kenya. Risk management practices was measured by risk identification, risk assessment, risk mitigation and risk monitoring and controlling while completion of urban roads transport infrastructure projects was measured by project completion within time, project completion within cost, project completion within quality and stakeholder satisfaction. Data was collected from the respondents on risk management practices variables and then the composite index on each of the risk management practices variable indicators (risk identification, risk assessment, risk mitigation and risk monitoring and controlling) was computed and used in the analysis. The results are presented in Table 4.33.

Table 4.33: Correlation between Risk Management Practices and Completion of Urban Road Transport Infrastructure Projects

Correlations

Variables		Completion of urban road transport infrastructure projects	Risk management practices
Completion of urban road transport infrastructure projects	Pearson Correlation	1	0.895**
	Sig. (2-tailed)		0.000
	n	214	214
Risk management practices	Pearson Correlation	0.895**	1
	Sig. (2-tailed)	0.000	
	n	214	214

**Correlation is significant at 0.05 level of significant (2-tailed)

Table 4.33 indicate risk management practices with r=0.895 was strongly correlated with completion of urban road transport infrastructure projects and the relationship was also significant ($p=0.000<0.05$).

4.11.4 Regression Analysis of Influence of Risk Management Practices and Completion of Urban Road Transport Infrastructure Projects

Linear regression analysis was further conducted to assess how risk management practices influence the completion of urban road transport infrastructure projects in Kenya. In testing its hypothesis, likewise data was collected from the respondents on risk management practices variables and then the composite index for each of the risk management practices variable indicators (risk identification, risk assessment, risk mitigation and risk monitoring and controlling) was computed and used in the analysis. The following hypothesis that was in line with objective six was formulated and tested.

Hypothesis Testing

The following hypothesis was tested using simple regression model to satisfy the sixth objective.

6. **H_0:** Risk management practices do not significantly influence completion of urban road transport infrastructure projects in Kenya.

H_1: There is a significant relationship between risk management practices and completion of urban road transport infrastructure projects in Kenya.

Regression Model

The mathematical model used for testing the null hypothesis was as follows:

Completion of urban road transport infrastructure projects = f (Risk management practices)

$$Y = f(X_5, \varepsilon)$$

$$Y = \beta 0 + \beta_5 X_5 + \varepsilon$$

Where Y = Completion of urban road transport infrastructure projects

X_5 = Risk management practices

β_0 = Constant term

β_5 = Beta coefficients

ε = Error term

Data was analyzed and the regression results for the influence of risk management practices on completion of urban road transport infrastructure projects in Kenya are presented in Table 4.34.

Table 4.34: Risk Management Practices and Completion of Urban Road Transport Infrastructure Projects

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.895	0.802	0.801	0.862

ANOVA						
Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig**
1	Regression	636.207	1	636.207	856.632	.000
	Residual	157.449	212	0.743		
	Total	**793.656**	**213**			

Regression Coefficients						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	0.978	0.122		8.016	.000
	Risk Management Practices	0.945	0.345	0.895	2.739	.007

Predictors: (constant), risk management practices
Dependent Variable: completion of urban road transport infrastructure projects

Table 4.34 shows that r=0.895. This indicates that risk management practices have a strong relationship with completion of urban road transport infrastructure projects in Kenya. R^2 = 0.802 indicating that risk management practices explains 80.2% of the variations in the completion of urban road transport infrastructure projects in Kenya.

The overall F statistics, (F = 856.632, p<0.000<0.05), indicated that there was a very significant statistical relationship between risk management practices and completion of urban road transport infrastructure projects in Kenya. The null hypothesis was therefore rejected and it was concluded that risk management practices significantly influences completion of urban road transport infrastructure projects in Kenya.

4.11.5 Discussion of Findings of Risk Management Practices and Completion of Urban Road Transport Infrastructure Projects

The current study has empirically demonstrated that risk management practices influence completion of urban roads transport infrastructure project. The findings hence support a study by Aduma and Kimutai (2018) on project risk management strategies and project performance. Whereas project risk management practices was explained by 69% of variations on project performance, the current study shows that 80.2% explains the variation in completion of urban roads transport infrastructure. This implies that there is need to strengthen and streamline risk management practices in road construction projects. The findings of the current study also reveal that land acquisition and relocation of utility services, fluctuation in fuel and construction materials costs and rains to be major risks. The findings support Wibowo, Hatmoko and Nurdiana (2018) that stakeholders have different perceptions about risks due to their unique interests in the project. This indicates that all risks must be identified, assessed, monitored and controlled to ensure the project is successfully implemented without going beyond set time, budget and compromising quality.

The current study further established that monthly progress meetings played a key role in assisting in monitoring and controlling risks associated with the complaints from the community and slowed progress of work (Statement R-19). In addition, a material laboratory was set up on the site for monitoring and controlling risks associated with poor quality of materials and workmanship. These findings are in agreement with Maru (2015) who opined that periodical risk monitoring can lead to successful completion of project. The findings affirm a claim by Kangari (2015) that contractors assume the risk related to actual quantities of work.

The current study found that neither was there an effective risk matrix developed nor reviewed and updated throughout the project life cycle (Statement R-17). This could be due to what El-Sayegh (2014) found to be the top three barriers to risk management practice; managers' understanding of the techniques, ability to find a suitable risk management method and difficulty experienced in obtaining both estimates and assessment of probability. These findings therefore point out the need to strengthen risk management practices in road construction industry especially in urban setups. Grant et al. (2009) noted that risk management is highly required for mega infrastructural to help project managers to anticipate any delays to project.

4.12 Moderating Influence of Risk Management Practices on Relationship between Stakeholder Participation in Project Lifecycle Management and Completion of Urban Road Transport Infrastructure Projects

The hypothesis seven stated, "Risk management practices does not have a significant moderating influence on the relationship between stakeholder participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya". Moderated influence in a regression model shows the influence of an independent variable on the dependent variable as a function of the third variable. The aim is to examine how the independent variables vary when a moderating variable is introduced in the model. The model was expressed as:

Completion of urban roads construction projects = f (Risk management practices +Participation in project initiation + Participation in project planning + Participation in project execution + Participation in project closure).

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6 X_1X_2X_3X_4X_5 + e$

Where:

Y= Completion of urban road transport infrastructure projects in Kenya

β_0= constant

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ = Beta coefficients

X_1= Stakeholder participation in project initiation

X_2= Stakeholder participation in project planning

X_3= Stakeholder participation in project execution

X_4 = Stakeholder participation in closure

X_5 = Risk management practices

($X_1X_2X_3X_4X_5$) = Interaction term (Product of $X_1X_2X_3X_4X_5$)

e = error term

Using Baron and Kenny (1986) to test moderating influence of risk management practice on the relationship between stakeholder participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya, analysis was carried out in two steps:

Step one: Influence of Stakeholder participation in Project Lifecycle Management on Completion of Urban Road Transport Infrastructure Projects in Kenya

In step one, the independent variable stakeholder participation in project lifecycle management was regressed on completion of urban road transport infrastructure projects in Kenya. The results are presented in Table 4.35.

Table 4.35: Combined Stakeholder Participation in Project Lifecycle Management and Completion of Urban Road Transport Infrastructure Projects in Kenya

Model Summary						
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error**	**F**	**p-value**
1	0.849	0.721	0.715	1.131	134.785	.000

ANOVA Tables						
Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig**
1	Regression	921.983	4	230.496	134.785	.000b
	Residual	357.41	209	1.710		
	Total	1279.393	213			

Regression Coefficients						
		Unstandardized Coefficients		**Standardized Coefficients**	**T**	**Sig.**
Model		**B**	**Std. Error**	**Beta**		
1	(Constant)	1.267	0.182		6.962	.001
	Stakeholder participation in project initiation	0.889	0.143	0.859	6.217	.014
	Stakeholder participation in project planning	0.895	0.245	0.838	3.653	.013
	Stakeholder participation in project execution	0.802	0.212	0.796	3.783	.007
	Stakeholder participation in project closure	0.911	0.265	0.855	3.438	.016

Predictors: (constant), Stakeholder participation in project initiation, Stakeholder participation in project planning, Stakeholder participation in project execution, Stakeholder participation in project closure

Dependent Variable: Completion of urban road transport infrastructure projects

Step Two: Influence of Combined Stakeholder participation in project lifecycle management and Risk Management Practice on Completion of urban road transport infrastructure projects in Kenya

In step two the influence of the moderator (risk management practice) was introduced into the model between stakeholder participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya. The results are presented in Table 4.36.

Table 4.36: Combined Stakeholder Participation in Project Lifecycle Management, Risk Management Practice and Completion of Urban Road Transport Infrastructure Projects in Kenya

Models Summary

Model	R	R Square	Adjusted R Square	Std. Error	F	p-value
1	.849	.721	0.715	1.131	134.785	.000
2	.929	.863	.860	.724	260.874	.000

Model		Sum of Squares	Df	Mean Square	F	Sig
1	Regression	921.983	4	230.496	134.785	.000[b]
	Residual	357.41	209	1.710		
	Total	1279.393	213			

ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig
2	Regression	909.918	5	181.984	260.874	.000[b]
	Residual	145.099	208	0.698		
	Total	1055.017	213			

Regression Coefficients

		Unstandardized Coefficients		Standardized Coefficients	T	Sig
		B	Std. Error	Beta		
2	(Constant)	1.278	0.191		6.691	.000
	Stakeholder participation in project initiation	0.817	0.311	0.718	2.627	.009
	Stakeholder participation in project planning	0.612	0.217	0.609	2.820	.005
	Stakeholder participation in project execution	0.599	0.278	0.489	2.155	.032
	Stakeholder participation in project closure	0.789	0.316	0.611	2.497	.013
	Risk management practice	0.576	0.104	0.459	5.538	.000

Predictors: (constant), Stakeholder participation in project initiation, Stakeholder participation in project planning, Stakeholder participation in project execution, Stakeholder participation in project closure, Risk Management practices
Dependent Variable: Completion of urban road transport infrastructure projects

The results in Table 4.36 indicates that after introduction of risk management practices into the relationship, and the interaction term in model 2 increased the R square by 0.142. This implies that the interaction between risk management practices and Combined Stakeholder participation in project lifecycle management explains 14.2% variations in completion of urban road transport infrastructure projects. F was at F (5,208) =106.341, p<0.001<0.05) and therefore the overall moderating influence was significant.

The null hypothesis was therefore rejected and it was concluded that the significant relationship between Combined Stakeholder participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya depends on risk management practices.

4.12.1 Discussion of Findings of Moderating Influence of Risk Management Practices on Relationship between Stakeholder Participation in Project Lifecycle Management and Completion of Urban Road Transport Infrastructure Projects

The findings show that risk management practices significantly moderate completion of urban roads transport infrastructure projects. This is similar to the findings of Naeem, *et al.* (2018), although the risk management was used as a mediator. This shows that the variable can either way be used as moderator or a mediator.

The current study found that by including risk management practices in the second model, there was a significant impact from 71.5% to 86.0% implying that the use of the moderator can improve performance in terms of completion of urban roads transport infrastructure projects by 14.5%. This is very much in line with Zwikael, *et al.* (2014) and Zailani, *et. al* (2016) that project risk moderates the impact of planning on success. The current findings further support Urbański, *et al.* (2019) found that risk management has a moderate influence on successful implementation of project planning, and that would eventually result to the project success.

The findings of the current study also show that project completion was not within scheduled time (Mean of 3.72). According to Mohamed (2015), project's delays and cost overruns are directly related to risks of poor stakeholder-needs-identification. However, with risk management practices mechanism in place then stakeholder participation and completion of roads would positively be moderated thus improved completion of road transport projects. The current study further points out that risk management practices can significantly moderate risks within project life cycle and completion of road as Goh and Hoffman (2013) who opined that by having a robust risk management in construction, the contractors should be able to achieve the objectives of the project by identifying risks in each and every stage of project life cycle.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter focuses on summary of findings, conclusions and recommendations. The summary of findings presents the results for each of the hypothesis in the study in terms of either rejected or failed to reject. The conclusions presented in this section were guided by the research objectives and informed by the findings, analysis, interpretation and discussions in the current study. Out of the conclusions made from the study, contributions to the body of knowledge were elaborated. Finally, recommendations for policy, practice, methodology and suggestions for further research were made.

5.2 Summary of Findings

The purpose of this study was to examine the influence of risk management practices on the relationship between stakeholder participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya. This aim of the study was achived through seven objectives and hypotheses to guide the study. The target population for sampling comprised on KURA project implementation team members, KURA project planners and designers, 781 Road contractors, 85 Consultants, 213 representatives of Project Affected Persons PAPs (bodaboda, roadside stall owners and resident associations), 116 complimentary service providers such as, KPLC, Water and Sewerage companies, National land commission and network providers (Safaricom, Airtel, Telcom and Faiba). The data was collected from the respondents using questionnaire and interview guide for various category of stakeholders.

The hypotheses were tested using simple and multiple regressions. Simple linear regression was used to determine the influence of participation in project initiation, participation in project planning, participation in project execution, participation in project closure and risk management practices on the completion of urban road transport infrastructure projects in Kenya. Multiple regression analysis was used to determine whether combined stakeholder participation in project lifecycle management influences completion of urban road transport infrastructure projects in Kenya and also whether risk management practices had a moderating influence on the relationship between combined stakeholder participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya.

5.2.1 Stakeholder Participation in Project Initiation and Completion of Urban Road Transport Infrastructure Projects

The first objective of the study was to assess how participation in project initiation influences completion of urban road transport infrastructure projects in Kenya. First, it was established that with a composite mean of 3.5 and a standard deviation of 0.92 stakeholder to a moderate extent, participated during project initiation. Second, the study findings further revealed that participation in project initiation significantly influences completion of urban road transport infrastructure projects in Kenya. In respect to this, 73.7% change in the completion of urban roads was accounted for by stakeholder participation in project initiation.

5.2.2 Stakeholder Participation in Project Planning and Completion of Urban Road Transport Infrastructure Projects

The second objective for the study was to establish how participation in project planning influences the completion of urban road transport infrastructure projects in Kenya. The findings of the study affirm that stakeholder were involved in project planning though some extent. This is supported by a compsite mean and standard deviation of 3.59 and 0.958 respectively. However the importance of this variable, in testing of the hypothesis. Showed that it significantly influences completion of urban road transport infrastructure projects in Kenya. This is whereby, it was evident that stakeholder participation in project planning explained the witnessed variation in completion of urban roads by 70.3%. Thus, stakeholders should not ignored during planning phase to ensure everything about project implementation remains on course.

5.2.3 Stakeholder Participation in Project Execution and Completion of Urban Road Transport Infrastructure Projects

The third objective of the study was to establish how participation in project execution influences completion of urban road transport infrastructure projects in Kenya. Although stakeholders take part in execution of road projects, the extent to which that happens needs a lot more to be done since it is moderately being observed by all stakeholders. This is well explained by a composite mean of 3.93 and a standard deviation of 0.847. Participation in project execution, however, significantly influences completion of urban road transport infrastructure projects in Kenya. This is further supported by the results that 63.4% of variations in completion of urban road is essentially covered by this variable hence its usefulness can not be ignored if at all urban roads have to be completed on time while meeting stakeholders expectations and quality mark.

5.2.4 Stakeholder Participation in Project Closure and Completion of Urban Road Transport Infrastructure Projects

The fourth objective sought to examine how participation in project closure influences the completion of urban road transport infrastructure projects in Kenya. Based on the results recorded, project closure as the last phase of project life cycle is reported to be moderately engaging stakeholders. A composite mean of 3.49 and a standard deviation of 0.828 depicted the true picture on the results ercorded. Considering this an important phase of the whole project life cycle, inadequate or complete lack of stakeholder participation could thwart sustainability of the road projects upon completion. It is found out that, however, participation in project closure significantly influences completion of urban road transport infrastructure projects in Kenya. This is supported by the result recorded that out of the total completion of the urban road projects, 73.0% of variations are explained by level of stakeholder participation during closure phase.

5.2.5 Combined Stakeholder Participation in Project Lifecycle Management and Completion of Urban Road Transport Infrastructure Projects

The fifth objective of this study was to examine how combined stakeholder participation in project lifecycle management influences the completion of urban road transport infrastructure projects in Kenya. Given a composite mean and composite standard deviation of 3.63 and 0.889 the results adduced evidence that road construction projects in urban set up were able to follow the entire project life cycle phases by ensuring all stakeholders take part in this phase. That such a complete cycle if adopted and utilized, the results in completion of road projects can be tremendous. Furthermore, the findings of this study is that combined stakeholder participation in project lifecycle management significantly influences completion of urban road transport infrastructure projects in Kenya. This is supported by 72.1% that shows the combined effect of the project life cycle in explaining the variations in completion of the urban road projects.

5.2.6 Risk Management Practices and Completion of Urban Road Transport Infrastructure Projects

The study sixth objective sought to assess how risk management practices, influence the completion of urban road transport infrastructure projects in Kenya. Recorded on this variable was a composite mean of 3.65 and a standard deviation of 0.966. It is evident that risk management is averagely practiced hence need to fully embrace it within all the road projects in the urban setups. The findings of this study is that risk management practices significantly influences completion of urban road transport infrastructure projects in Kenya. In fact with 80.0% variations in completion of urban road projects, it can be concluded that risk management should be part and parcel of any road construction to effectively achieve the benefits that come along with this effect.

5.2.7 Moderating Influence of Risk Management Practices on Stakeholder Participation in Project Lifecycle Management and Completion of Urban Road Transport Infrastructure Projects in Kenya.

The seventh objective sought to establish the moderating influence of risk management practices moderates on the relationship between combined stakeholder participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya. The null hypothesis linked to this objective stated that risk management practices does have a not significant moderating influence on the relationship between stakeholder participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya. The impact of risk management practices a moderator accounts for 14.2%. A clear indication that this variable should be instituted in all road projects for enhanced performance. In essense, the moderator the significantly influences relationship between combined stakeholder participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya. Thus, it is dependable and it not be dispensed away with.

5.3 Conclusions

This section presents conclusions based on the findings of the study for each objective and corresponding hypothesis. The conclusions are drawn from the key findings of the study.

5.3.1 Stakeholder Participation in Project Initiation and Completion of Urban Road Transport Infrastructure Projects in Kenya

The findings of the study show that stakeholder identification at initiation stage promotes the engagement of the stakeholders which eventually influences the overall completion of urban road transport infrastructure projects in Kenya and that feasibility studies through traffic surveys, consultative meetings with the key stakeholders and economic and financial viability studies are vital influencers towards completion of urban road transport infrastructure projects in Kenya. Further, the study implication is that projects managers for the urban road transport infrastructure projects need to identify the stakeholders at the initiation stage and engage them through letters, email and advertisement in local daily. The Stakeholders interest, power and influence should as well be analyzed to assist in establishing how to manage them.

5.3.2 Stakeholder Participation in Project Planning and Completion of Urban Road Transport Infrastructure Projects in Kenya

Project planning is important in ensuring that stakeholders take part in resource planning, scope planning and also budgeting. However, community request to have adequate pedestrian walkways, zebra crossings and footbridges and scope of relocation of service lines being determined by relevant government agency based on information provided by stakeholders was not treated with seriousness. It was therefore concluded that there was a positive influence of participation in project planning on completion of urban road transport infrastructure projects in Kenya and there is need for key stakeholders to have the necessary qualification and experience in developing a work breakdown structure for the project.

5.3.3 Stakeholder Participation in Project Execution and Completion of Urban Road Transport Infrastructure Projects in Kenya

Although information concerning the progress of work was frequently channeled through project supervisors and that there were meetings organized for discussing the progress of the projects, stakeholders still need to be involved fully. In the other words, it can be concluded that there is need for all the stakeholders to participate in addressing community concerns since stakeholders somehow were not consulted whenever there was a proposed change in original planned activities. Monitoring and controlling of project activities has the greatest influence on the completion of urban road transport infrastructure projects in Kenya. Thus, the project sociologists and the environmentalists need to continuously engage the community and explain to them how the project would affect or benefit them. It was, however, concluded that there was a positive influence of participation in project execution on completion of urban road transport infrastructure projects in Kenya. This implies that key stakeholders should participate in the review and implementation of project activities through site inspections and regular site meetings.

5.3.4 Stakeholder Participation in Project Closure and Completion of Urban Road Transport Infrastructure Projects in Kenya

Stakeholders get rare chance to participate in project closure. Thus, the study findings leads to a conclusion that the stakeholders need to participate in the final inspection meeting to check the quality of the completed works as well as being involved in timely and appropriate inspections to address quality problems. Generally, it emerged that participation in project closure have a positive and significant influence on completion of urban road transport infrastructure projects in Kenya. This implies that, as a ressult, project team should prepare large volumes and complex commissioning data, to guarantee adequate traceability of information and also a need for storage of project documents for use in the operation and maintenance phase after completion of the project.

5.3.5 Combined Stakeholder Participation in Project Lifecycle Management and Completion of Urban Road Transport Infrastructure Projects in Kenya

The combination of participation in project initiation, participation in project planning, participation in project execution and participation in project closure shows that combined stakeholder participation in project lifecycle management have a positive statistically significant influence on the completion of urban road transport infrastructure projects in Kenya. However, participation in project initiation by the stakeholders is not keenly observed alongside project planning and project closure phases hence impacting negatively on completion of the road projects in urban areas. Although stakeholder appears to be fully involved during project implementation, most of the activities scheduled for execution may not have been spelt out during initiation and planning and phases. This is something that needs to be observed at all times to have positive influence in completion of urban road projects.

5.3.6 Risk Management Practices and Completion of Urban Road Transport Infrastructure Projects in Kenya

Risk management practices included risk identification, risk assessment, risk mitigation and risk monitoring and controlling. Even though risk identification remains top on the list, there is critical need to engage in proper risk assessment, risk mitigation and then risk monitoring and controlling. This was attributed to the fact that it is very important to assess the risks and uncertainties at the design phase to ensure that the appropriate strategies are formulated to mitigate them during the implementation of the projects. Identified as list included: delay in payments, inadequate road design, fluctuation in the cost of materials, land acquisition and relocation of utility service lines, prolonged heavy rains and design changes arising from unforeseen underground geological condition as a risk which could affect completion of urban road transport infrastructure projects in Kenya. Therefore, it was concluded that risk management practices have a statistical significant influence on completion of urban road transport infrastructure projects in Kenya. Therefore, all contractors all construction firms should practically embrace risk management practices for proper completion road projects.

5.3.7 Moderating Influence of Risk Management Practices on Relationship between Stakeholder Participation in Project Lifecycle Management and Completion of Urban Road Transport Infrastructure Projects

Based on the findings it was concluded that the significant relationship between Combined Stakeholder participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya depends on risk management practices. This implies that there a need for development, reviewing as well as updating of an effective risk matrix throughout the project life cycle. This will assist in in monitoring and controlling risks associated with community complaints and slow progress of works. The stakeholders should also be engaged in identifying risks which affects the completion of urban road transport infrastructure projects in Kenya. These risks include delay in payments, inadequate road design, fluctuation in the cost of materials, land acquisition and relocation of utility service lines, prolonged heavy rains and design changes. This will generally improve the overall completion of urban road transport infrastructure projects since the appropriate strategies would be formulated to mitigate these risks.

5.4 Contributions of the Study to Knowledge

Literature on stakeholders participation project life cycle management revealed that stakeholders take part in various phases of the cycle for the purpose of either project performance (success) or implementation. Although you may find their participation still remains effective despite being restricted to a few of the phases than the whole cycle. Moreover, none of the studies reviewed demonstrated the importance and need to involve the stakeholders in all stages or phases. Thus, this current study established the importance of involving these stakeholders in every stage throughout the project life cycle. The results on the combined effect lay the foundational knowledge and need to have stakeholders involved in the implementation of the road construction projects to avert serious issues of claims and court cases that are likely to be filed as a result of disagreements and disputes that arise as a result of being locked out of the implementation process. Similarly, stakeholders should assume an active role during planning stage where it ought to be manifested in the budget planning and scheduling of activities to ensure the projects remain on course. A lot of emphasis, though, should be focused on initiation and closure phases where the input of the stakeholders is almost nil.

Risk management practices as a variable was tested independently and subsequently tested as a moderator on the relationship between stakeholder participation in project life cycle management and completion of urban roads transport inftrastructure projects. The findings showed that better results can be realized when the risk management practices is used as a moderator in road construction industry, this is especially when project life cycle is the guiding tool towards completion of roads and positive outcome is highly anticipated. Since it is demonstrated that this moderator has a strongest influence, it is a pointer to the successful completion of road construction projects and any other infrastructural projects. The study is therefore an insight to Project Management Principles (PMP) that must be followed to the latter.

5.5 Recommendations of the Study

This section presents the recommendations made in the study based on the research findings, analysis, interpretation and discussion. These include recommendations for policy, practice, methodology.

5.5.1 Recommendations for Policy

1. Although there may have been some form of planning, the obvious mistake that happened is that community requests to have important road safety measures taken seriously was ignored. The requests revolved around adequate zebra crossing, foot bridges and pedestrians' walkways. In the future, road contractors, construction companies and road construction agency (KURA) should seek to draft a policy framework that guides adherence to know what the road users would wish to see upon the completion of the road to enhance even better performance of the same projects.
2. It is evident that there was poor monitoring of activities such as relocation of service lines and land acquisition. The study also wishes to recommend that the government agencies, KPLC, NLC and KURA, should endeavor to work together during project implementation to ensure that service lines and acquisition of land is done much ahead of time to avoid delay in completion. Moreover, this will ensure quality of work is achieved by both the client and the consultant through a collaborative stakeholder engagement.

3. There is need to conduct community awareness among the community and other stakeholders about the road projects before commencement. This could be done by conducting Environmental and Social Impact Assessment (ESIA). As per the study findings, community members did not share their views during initiation stage which would have given a reprieve to this impetus. Furthermore, the ESIA would open a forum for consultative dialogues or meetings.

5.5.2 Recommendations for Practice

1. From the findings of the study, it was clear that the road projects were not on schedule, either at starting or completion. As a result, the closure was not properly done since some of the stakeholders were not present to share projects' strengths and weaknesses that might have emerged during the initial life cycle of the projects. Thus, there was no discussion and recording of lessons learnt in the course of implementation or shade light on any incomplete projects. In this regard, the study recommends that all stakeholders must be present at this important stage if at all sustainability of these projects need to be achieved.
2. KURA need to have a special task force in place for all the projects mandated to supervise. Subsequently, all the matters arising would be recorded by this task force and also remain in place for a while as a watchdog to ensure everything agreed upon or noted is effectively incorporated and implemented.
3. The study also presented some findings on risk management. It was established the dispute resolution board did not perform fairly in controlling projects; whereby, the risk management matrix was not utilized throughout the project life cycle and neither were there adequate road designs. In addition, some risks were assumed and subsequently the probability of them occurring and the impact they would cause were not effectively assessed. This was further noted that not all stakeholders were involved in the design phase, a clear pointer to why risk management requires a paradigm shift within the road construction industry. Thus, the study recommends that the current dispute resolution should be more empowered to effectively execute its mandate. There is also need to engage stakeholders at the design phase to be able to share what they might perceive as a potential risk prior to embarking on construction.

5.6 Suggestions for Further Research

This study focused on influence of risk management practices on the relationship between stakeholder participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya. The study recommends further research on influence of risk management practices on the relationship between stakeholder participation in project lifecycle management and performance of rural road transport infrastructure projects in Kenya.

The study also focused only on risk management practices as the only moderating variable in the study. Therefore the study recommends further studies to be conducted focusing on other moderating variables affecting the relationship between stakeholder participation in project lifecycle management and completion of urban road transport infrastructure projects in Kenya like compliance with legal framework.

Future studies may also venture in establishing the influence of risk management practices on the relationship between stakeholder participation in project lifecycle management and performance of building construction projects in Kenya. The study should also establish others affecting the completion of urban road transport infrastructure projects in Kenya other than stakeholder participation like project funding.

REFERENCES

Aaltonen, E. (2011). *Advising on Research Methods. A Consultants Companion*. Huizen: Johannes Van Kessel Publishing.

Abdalla, A., & Otieno, M. (2017). Determinants of Implementation of County Government Projects: A Case of Infrastructural Projects Inkilifi County, Kenya. *International Journal of Latest Research in Engineering and Technology*,3(9), 108-118.

Abdelgawad, M. & Fayek, A. (2010). Risk Management in the Construction Industry Using Combined Fuzzy FMEA and Fuzzy AHP Risk Management in the Construction Industry. *Journal of Construction Engineering and Management*, 136(9), 45-52.

Abdou, O. A. (2012). Managing construction risks. *Journal of Architectural Engineering*, 2(1), 3-10.

Abdul-Rahman, H., Loo, S. C. & Wang, C. (2012). Risk identification and mitigation for architectural, engineering, and construction firms operating in the Gulf region. *Canadian Journal of Civil Engineering*, 39(1), 55-71.

Abowitz, D. & Toole, T. (2010). Mixed method research: fundamental issues of design, validity, and reliability in construction research. *Journal of Construction Engineering and Management*, 136(1), 108-116.

Achuka, V. (2016). Expansion of Outer Ring Road in Nairobi proving to be big challenge to contractor. https://www.nation.co.ke/news/expansion-outer-ring-road-nairobi-proving-to-be-big-challenge/1056-3418190-12wnt7oz/index.html

Achuka, V. (2017). Why Outer Ring road's design is causing challenges ahead of commissioning.https://www.standardmedia.co.ke/article/2001263265/designflaws-on-outer-ring-road-put-pedestrians-at-risk

Achuka, V. (2018). *Why thousands of Kibera residents stare at a looming mass eviction*. https://www.standardmedia.co.ke/business/article/2001270163/road-cutsthroughkibera-as-residents-face-eviction

Aduma, L. K., & Kimutai, G. (2018). Project risk management strategies and project performance at the National Hospital Insurance Fund in Kenya. *International Academic Journal of Information Sciences and Project Management*, 3(2), 80-110.

Africa Competitiveness Report (2013). *Engineering Education and Construction industry*.

African Development Bank (AfDB). (2014). *Country Strategy Paper (2014 – 2018) for Kenya*.

Agrawal, A. (2012). Risk mitigation strategies for renewable energy project financing. *Strategic planning for energy and the environment*, 32(2), 9-20.

Aje, I. (2012). The impact of contractors' prequalification on construction project delivery in Nigeria. *Engineering, Construction and Architectural Management*, 19(2), 159-172.

Aken, S.R. (2017). *Influence of stakeholder's role on performance of constituencies development fund projects a case of Isiolo North Constituency, Kenya*. Unpublished Masters in project planning and management, University of Nairobi.

Albert, M. J. (2014). Risk Analysis and Management in Construction, a lean construction pilot project, Supply Chain Management: An International Journal, Vol. Allocation: Cooperative Approach. *Journal of Construction Engineering and Allocation*, 2(6), 80-85.

Albert, R. & Ada, T. (2014). *Success and failure in urban transport infrastructure projects.* KPMG International.

Ali, R., Barra, A. F., Berg, C., Damania, R. & Nash, J.R., (2015). Highways to Success or Byways to Waste : Estimating the Economic Benefits of Roads in Africa. Africa Development Forum. Washington, DC: World Bank; and Agence Française de Development. © World Bank.https://openknowledge.worldbank.org/handle/10986/22551 License: CC BY 3.0 IGO

Ali, Y. A. & Gitonga, A. (2019). Influence of stakeholders role on the performance of national government constituency development fund projects in Wajir West constituency, Kenya. *International Academic Journal of Information Sciences and Project Management*, 3(3), 289-311

Amadi, J.O. (2017). The Role of Planning on Performance of Community Projects in Kenya. *Developing Country Studies*, 7(1), 1-7.

Aminbakhsh, S.; Gunduz, M.; Sonmez, R. 2013. Safety risk assessment using analytic hierarchy process (AHP) during planning and budgeting of construction projects, Journal of Safety Research 46: 99–105.

Amnesty International (2015). *Driven Out from Development: Forced Evictions in Mombasa, Kenya*. United Kingdom: Amnesty International Ltd, Peter Benenson House https://www.amnesty.org/download/Documents/AFR3224672015ENGLISH.PDF

Andersen, L. R. (2009). The influence of gender diversity on corporate performance. *Revista de contabilidad: Spanish accounting review*, 13(1), 53-88.

Antonakis, J., & Dietz, J. (2011). *Looking for Validity or Testing It? The Perils of Stepwise Regression, Extreme-Scores Analysis, Heteroscedasticity, and Measurement Error. Personality and Individual Differences*, 50(3), 409-415.

Arca, G.J. & Prado, J.C.P. (2011). Personnel participation as a key factor for success in maintenance program implementation: A case study. *International Journal of Productivity and Performance Management,* 57(3), 247-258.

Arikan, R., Dağdeviren, M. & Kurt, M. (2013). A fuzzy multi-attribute decision making model for strategic risk assessment. *International Journal of Computational Intelligence Systems*, 6(3), 487-502.

Armah, F. A., Yawson, D. O. & Johanna, A. O. (2009). The gap between theory and practice of stakeholder participation: The case of management of the Korle Lagoon, Ghana. *Law Environmentv't & Development. J.*, 5(2), 73-75.

Asher, C.C., Mahoney, J.M. & Mahoney, J.T. (2015). Towards a property rights foundation for a stakeholder theory of the firm. *Journal of Management and Governance*, 9(1), 5-32.

Asian Development Bank. (2011). *Improving Project Success through Effective Communication and Participation*. Manilla Philippines.

Atkinson, R. (2011). Project Management: Cost, Time and Quality, Two Best Guesses and A Phenomenon, It's Time to Accept Other Success Criteria. *International Journal of Project Management*, 17(6), 337-42.

Awini, R.A. (2018). Challenges of the Implementation of Water and Sanitation Projects in Gushegu District. *Texila International Journal of Management*, 4(2)

Badri, A., Gbodossou, A. & Nadeau, S. (2012). Occupational health and safety risks: Towards the integration into project management. *Safety science*, 50(2), 190-198.

Baker, S. E. & R. Edwards, R. (2013). *How many qualitative interviews is enough?* Wallingford: National Centre for Research Methods. CAB International, National Centre for Research Methods.

Barasa, F., & Jelagat, T. (2013). Community Participation in Project planning, Management and Implementation: Building the Foundation for Sustainable Development. *International Journal of Current Research*, 5(2), 398-401.

Barclay, C. & Osei Bryson, K. M. (2010). Project performance development performance development framework: An approach for developing performance criteria & measures for information systems (IS) projects. *International Journal of Production Economics*, 124(1), 272-292.

Baron, R.M. & Kenny, D.A. (1986). The moderator-mediator variable distinction in social Psychological research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.

Basu, R. (2013). Managing quality in projects: An empirical study. *International journal of project management*, 32(1), 178-187.

Battaineh, R.K. (2006). Causes of Delay in Large Building Construction Projects. *Journal of Management Engineering*, 11 (2)

Bi, X. & Tan, H. T. (2010). The study on risk assessment of EPC contractor based on fuzzy analytic hierarchy process. *In Industrial Engineering and Engineering Management (IE&EM), 2010 IEEE 17Th International Conference*, 1(1), 1129-1132.

Biskupek, A. (2016). The Research of Stakeholder Power Impact on Project Implementation. *Trends Economics and Management*, 27(3), 9-19.

Bititci, U., Cocca, P. & Ates, A. (2015). Impact of visual performance management systems on the performance management practices of organisations. *International Journal of Production Research*, 54(6), 1571-1593.

Bizon-Górecka, J. & Górecki, J. (2017). Influence of Selected Stakeholders of Construction Investment Projects on the Course of Project. *IOP Conference Series: Materials Science and Engineering*, 245 072018.

Bonazzi, L. & Islam, S. M. (2014). Agency theory and corporate governance: A study of the effectiveness of board in their monitoring of the CEO. *Journal of Modelling in Management*, 2(1), 7-23.

Boukanos, A.K. (2017). *The Criteria of Project Success School of Business and Management of City University*. Clerkenwell: The Press.

Bourne, L. & Walker, D.H.T. (2015). The paradox of project control. *Team Performance Management*, 11(5/6), 157-178.

Bourne, L. (2016). *Project relationships and the stakeholder circle*. Montreal: Stakeholder Management PTY Limited.

Box, A. & Jenkins, B. (2013). Risk management perspectives. *In Risk Management*, 5(3), 19-28.

Bryman J. F. (2012). High job performance through co-developing performance measures with employees. *Human resource management journal*, 56(1), 59-84.

Bryman, R. C. & Cramer, S. K. (2011). *Qualitative Research for Education: An introduction to Theories and Methods*. New York: Pearson Education group.

Buchan, K. & Pharoah, T. (2014). Better roads for England. *A report from the Local Government Association based on independent research*, 2(1), 24-45.

Burcar Dunovic, B. I., Radujkovic, M. & Vukomanovic, M. (2016). Internal and external risk based assessment and evaluation for the large infrastructure projects., *Journal of Civil Engineering and Management*, 22(5), 673–682.

Burns, C. (2012). *Globak Risk Technology Survey*. Atlanta: Aon E-Solutions.

Burns, R. (2009). *Introduction to research method*. (Ed.) reed. Melbourne: Longman.

Burton, I., Malone, E. & Huq, S. (2013). *Adaptation Policy Frameworks for Climate Change: Developing Strategies, Policies and Measures*. Cambridge: Cambridge University Press.

Cadle, R. M. & Yeates, D.A. (2014). The moderator - mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173-1175.

Caldwel, M., & Usadolo, S. (2016). *A Stakeholder Approach to Community Participation in a Rural Development Project.* An article distributed by the Creative Commons Attribution.

Caron, A.P.L. (2010). Key performance indicators for measuring construction success. *Benchmarking: An international journal*, 11(1), 203–221.

Carr, V. & Tah, J. H. M. (2017). A fuzzy approach to construction project risk assessment and analysis: construction project risk management system. *Advances in engineering software*, 32(10-11), 847-857.

Cha, J. & Maytorena-Sanchez, E. (2019). Prioritising project management competences across the project life cycle. *International Journal of Managing Projects in Business*, 9(5), 59-61.

Chakrabartty, S. N. (2013). Best split-half and maximum reliability. *IOSR Journal of Research & Method in Education*, 3(1), 1-8.

Chan Daniel M. M. & Kumaraswamy M., (2017). Compressing construction durations: lessons learned from Hong Kong building projects, International Journal Management, 20, 23-35

Chan, J. H., Chan, D. W., Chan, A. P., Lam, P. T. & Yeung, J. F. (2011*). Developing a fuzzy risk assessment model for guaranteed maximum price and target cost contracts in construction. Journal of facilities management*, 9(1), 34-51.

Chang, A., Chih, Y.-Y., Chew, E. & Pisarski, A. (2013). Re-conceptualising mega project success in Australian Defense: Recognising the importance of value co-creation. *International Journal of Project Management* 31(8), 1139-1153.

Chapman, R. J. (2017). The Effectiveness of Working Group Risk Identification and Assessment Techniques. *International Journal of Project Management*, 16(1), 333-343.

Chelishe, N., & Kikwasi, G. J. (2014). Critical Success Factors for Implementation of Risk Assessment and Management Practices Within the Tanzanian Construction Industry. *Engineering, Construction and Architectural Management*, 21(3), 291-319.

Chikati, J. (2009). *Participatory Project Identification and Planning, A Regional Partnership for Resource Development publication*. Nairobi: Signal Press Ltd.

Chioma, Z. (2012). Risk identification of public infrastructure projects based on VFPE. *In Computer and Automation Engineering (ICCAE)*, 4(1), 173-176.

Cochran, W.G. (1977) Sampling Techniques. 3rd Edition, John Wiley & Sons, New York.

Connell, J., Kubisch, A., Schorr, L. & Weiss, C. (Eds.) (2009). *Voices from the field: New approaches to evaluating community initiative*'. Washington, DC: Aspen Institute.

Constitution of Kenya (2010). Nairobi: Government Printer.

Cooper & Schindler (2014). *Business Research Methods,* (9th Ed.). New Delhi: Tata McGraw Hill.

Creswell, J. W. & Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd Ed.). Thousand Oaks: Sage.

Creswell, J. W. (2012). *Research methods.* Sage: Sage publications.

Dahan, W., Dahan, D. S., Hauser, S. & Kähkönen, K. (2010). Evaluating Temporal Planning Domains. *In ICAPS*, 2(5), 105-112.

Dainty, A. R. J., Cheng, M. & Moore D.R. (2014). A competency based performance model for construction project managers. *Journal of Construction Management and Economics,* 22(8), 877-886.

Darlington, R. B. (1968). *Multiple regression in psychological research and practice. Psychological Bulletin*, 69, 161-182.

Davis, K. (2014). Different stakeholder groups and their perceptions of project success. *International Journal of Project Management.* 32(2), 189-201.

Deloitte & Forbes. (2012). *Key Risks Not Being Continually monitored: Deloitte Surve*. New York: Deloitte.

Dey, P.K. (2010). Managing project risk using combined analytic hierarchy process and risk map. *Applied Soft Computing*, 10 (4), 990–1000.

Dikmen, W. E. (2009). Out of the crisis. Massachusetts Institute of Technology. *Center for advanced engineering study*, 510(1), 419-425.

Donald, S. & Cooper, C.W. (2017). Strategic Risk Management. *Journal of Applied of Applied Corporate Finance*, 2(4), 59-6.

Ebrahimnejad, S., Mousavi, S. & Seirafi Pour, H. (2010). *Risk identification and assessment Economic Recovery Strategy for Wealth and Employment Creation 2013-2014 (ERS), economics: New issues and challenges,* 1(1), 18-20.

El-Sayegh, S.M. (2014). Project risk management practices in the UAE construction industry. *Int. J. Project Organisation and Management*, 6, (1/2),121-137.

Eriksson, P. E. (2010). Partnering: what is it, when should it be used, and how should it be implemented? *Construction management and economics*, 28(9), 905-917.

Evan, D. (2011). *How to write a better thesis or report.* Melbourne: Melbourne University Press Carlton.

Fan, Z. P., Li, Y. H. & Zhang, Y. (2015). Generating project risk response strategies based on CBR: A case study. *Expert Systems with Applications,* 42(6), 2870-2883.

Fang, C., Marle, F., Xie, M. & Zio, E. (2013). An integrated framework for risk response planning under resource constraints in large engineering projects. *IEEE Transactions on Engineering Management*, 60(3), 627-639.

Fellows, R. & Liu, A. (2011). *Research methods for construction*. Oxford: Blackwell Publishing Ltd.

Freeman, M.D. (2010). Self-determination theory and work motivation. *Journal of Organizational Behaviour*, 26(1), 331-362.

Freeman, R.E. (1984). *Strategic Management: A Stakeholder Approach.* Boston: Pitman Press, Boston, Ma p46.

Fukayama, H., Fernandes, E. & Ebecken, N. F. F. (2009). Risk management in the aeronautical industry: Results of an application of two methods. *WIT Transactions on Information and Communication Technologies,* 39(1), 195-204.

Gatotoh, A.M., Keiyoro, P.N. & Gakuu, C.M. (2017). Learner Attitude and mLearning Adoption among Community Health Cares Trainees, Kenya. *International Journal of Current Research*, 9(11), 60834-60838.

Gardiner, N. D. (2015). Construction of a robust microarray from a non- model species largemouth bass, Micropterus salmoides (Lacèpede), using pyrosequencing technology. *Journal of Fish Biology*, 72(9), 2354-2376.

Glaister, A. O. (2010). *Effects of Infrastructure Project Cost Overruns and Schedule Delays in Sub-Saharan Africa*. Amsterdam: Elsevier.

Goh, K. & Hoffman, S. (2013). *The Law and Business of International Project Finance*. Ardsley: Kluwer Law International.

Gorald, J. (2013). The changing basis of performance measurement. , *International Journal of Operations & Production Management,* 16(8), 63-80.

Government of Kenya. (2008). *Nairobi Metro Vision 2030 A World Class African Metropolis: Building a Safe, Secure and Prosperous Metropolitan*. Ministry of Nairobi Metropolitan Development.https://www.namsip.go.ke/wpcontent/uploads/2018/05/Metro2030_Strategy.pdf

Government of Kenya. (2015). *Machakos County Strategic Plan 2015-2018*. Machakos: Government of Kenya.

Grant, K. & Cashman, M.A. & Christensen, A. P. (2009). Large UK companies and derivatives. *European Financial Management,* 3(2), 191-208.

Greiman, V. A. (2013). *Megaproject management: Lessons on risk and project management from the Big Dig*. Hoboken: John Wiley & Sons.

Gupta, J., Pouw, N.R.M. & Ros-Tonen, M.A.F. (2015) Towards an elaborated theory of inclusive development. *European Journal for Development Research*, 27(4), 541–559.

Gustafsson, B. & Yadav, B. (2013). Closing IT Projects: A Swedish Public Sector Perspective. http://www.diva-portal.org/smash/get/diva2:653326/FULLTEXT01.pdf

Haifang, C., Shimiao, J. & Danfeng, Z. (2010). 'Risk identification of public infrastructure projects based on VFPE'. *The 2nd International Conference on Computer and Automation Engineering (ICCAE), Computer and Automation Engineering (ICCAE),* 4(1), 173-175.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis (Vol. 6).* Upper Saddle River, NJ: Pearson Prentice Hall.

Hallowell, M. R. & Gambatese, J. A. (2009). Construction safety risk mitigation. *Journal of Construction Engineering and Management*, 135(12), 1316-1323.

Hanna, A. S., Swanson, J. R. & Aoun, D. G. (2014). Proper risk allocation during construction: Differing site conditions. *Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, 6(4), 45-140.

Hansen, T. P. (2014). *Stakeholders participation In Project implementation and Delivery*. London: New age International Publishers.

Haponava, T. & Al-Jibouri, S. (2009). Identifying key performance indicators for use in control of pre-project stage process in construction, *International Journal of Productivity and Performance Management*, 58(2), 160–173.

Hartwell, J. C., Upadhyay, Y. & Sourani, A. (2019). Influential factors of life cycle management in education PFI projects. *Built Environment Project and Asset Management*, 4(2), 15-49.

Hassan, J. R. (2012). Construction risk identification and allocation: Cooperative approach. *Journal of Construction Engineering and Management*, 139(9), 1098-1107.

Heldman, K. (2018). *Project management jumpstart*. New Jersey: John Wiley & Sons.

Heravi, A., Coffey, V. & Trigunarsyah, B. (2015). Evaluating the level of stakeholder involvement during the project planning processes of building projects. *International Journal of Project Management*, 33(5), 985-997.

Hietbrink, M., Hartmann, A. & Dewulf, G. (2012). Stakeholder Expectation and Satisfaction in Road Maintenance. *Procedia-Social and Behavioral Sciences*, 48(1), 266-275.

Hinton, G., Deng, L., Yu, D., Dahl, G. E., Mohamed, A. R., Jaitly, N., & Kingsbury, B. (2012). Deep neural networks for acoustic modeling in speech recognition: The shared views of four research groups. *IEEE Signal processing magazine*, 29(6), 82-97.

Hopkin, P. (2014). Achieving enhanced organisational resilience by improved management of risk: Summary of research into the principles of resilience and the practices of resilient organisations. *Journal of business continuity & emergency planning*, 8(3), 252-262.

Hormozi, A. M, McMinn, R. D. & Nzeogwu, O. (2010). The project life cycle: The termination phase. *S.A.M. Advanced Management Journal; Corpus Christi*, 65(1), 45-51.

Hurmerinta-Peltomaki, L. & N. Nummela. (2016). Mixed methods in international business research: A valuea added perspective. *Management International Review*, 46(4), 439-459.

Hwang, B., Zhao, X. & Gay, M. (2013). Public private partnership projects in Singapore: Factors, critical risks and preferred risk allocation from the perspective of contractors. *International Journal of Journal of Project Management, Management*, 31(1), 424 - 433.

International Association for Public Participation. (2011). *Painting the Landscape: A Cross-Cultural Exploration of Public-Government Decision Making*. Louisville: IAPP.

Jaafari, A. (2011). Management of risks, uncertainties and opportunities on projects: time for a fundamental shift. *International Journal of Project Management*, 19(2), 89-101.

Jaapar, A., I. R. Endut, N. A. A., Bahri, C. & Takim, R. (2009). The impact of value management implementation in Malaysia. *Journal of Sustainable Development*, 2(2), 56-66.

Jacobs, J. (2016). *Sustainable Community Planning Guide and Stakeholder Participation*.

Jailaubekov, A. E., Willard, A. P., Tritsch, J. R., Chan, W. L., Sai, N., Gearba, R. & Zhu, X. Y. (2013). Hot charge-transfer excitons set the time limit for charge separation at donor/acceptor interfaces in organic photovoltaics. *Nature materials*, 12(1), 66-69.

Jarque, K. & Bera, J. (2011). The influence of proportional and perceptual conflict composition on team performance. *International. Journal. Conflict Management*. 11(1), 56–73.

Jha, N. K. & Iyer, C.K. (2016). What attributes should a project coordinator possess? *Journal of Construction Management and Economics*, 24 (9), 977–988.

Joaquin, V. W., Hernandez, D. & Aspinwall, B. B. (2010). The impact of personal resources and job crafting interventions on work engagement and performance. *Human resource management journal*, 56(1), 366-372.

Jones, G. (2011). Time and Cost Overruns in Power Projects in Kenya. *A Case Study of Kenya Electricity Generating Company Limited*.

Kalantari, H., E. Kalantari, E. & Malekic, S. (2011). E-survey (surveys based on e-mail & web). *Elsevier, Procedia Computer Science*, 1(3), 935-941.

Kangari, R. (2015). Risk management perceptions and trends of U.S. construction. *Journal of Construction Engineering and Management*, 121(4).

KARA. (2012). *Thika Highway Improvement Project: The Social/Community Component of the Analysis of the Thika Highway Improvement Project*. May 2012. http://csud.ei.columbia.edu/files/2012/11/KARA-report_FINAL.pdf

Keith , Z. T. (2006). Multiple Regression and Beyond. Pearson Education

Kelly, C.R. (2017). Are your performance measures obsolete? *Management Accounting*, 70(12), 45-50.

KeNHA.(2019).*KenyaRoadClassifiedNetwork*. http://www.kenha.co.ke/index.php/road-network

Kerote, O. A. (2014). *The Role of the Local Community in the Management of Constituency Development Funds in Sabatia Constituency in Vihiga.* A research Project, University of Nairobi.

Kerzner, H. & Kerzner, H. R. (2017). *Project management: a systems approach to planning, scheduling, and controlling*. New Jersey: John Wiley & Sons.

Key, S. (2011). Toward a new theory of the firm: a critique of stakeholder “theory”. *Journal of management history*, 6(7), 317-328.

Khwaja, J. (2014). A success measurement model for construction projects. *In Proceedings of the International Conference on Financial Management and Economics*, 2(5), 186-190.

Kipkurui, H. K. & Obura, J. (2018). Effect of Road Assets Management on Performance of Road Agencies in Kenya. *European Journal of Business and Innovation Research*, 6(6),1-13.

Kithinji, G. R. & Dr. Kamaara, M. (2017). *Factors Influencing Completion Of Government Road Infrastructure Projects In Kenya: A Case Of Meru County. The Strategic Journal of Business & Change Management.* ISSN 2312-9492

Kliem, R.L. (2009). *Effective communications for project management*. Boca Raton: Auerbach/Taylor & Francis.

Kobusingye, O. J., Mungatu, K. & Mulyungi, O. M. (2017). Improving Success in Public Investment Projects. *Lessons from a Government Initiative in Norway to Improve Quality at Entry*. In 19th IPMA World Congress.

Koehler, H.F. (2010). Risk management agonists. *Risk Analysis*, 10(1), 201-205.

Kolk, B. R. & Pinkse, S. (2016). Education and work-experience-influence on the performance. *Journal of Business and management*, 16(5), 104-110.

Kolltveit, B. J. & Grønhaug, K. (2014). The importance of the early phase: the case of construction and building projects. *International Journal of Project Management*, 22(7), 545-551.

Kong, M., Chen, X. G., Kweon, D. K. & Park, H. J. (2011). Investigations on skin permeation of hyaluronic acid based nanoemulsion as transdermal carrier. *Carbohydrate Polymers*, 86(2), 837-843.

Kothari, C.R. (2010). *Research Methodology; Methods and Techniques,* (2nd Ed). Delhi: New Age Int. (P) Ltd.

Kothari, C. R. & Garg G. (2014), Research Methodology, Third Edition, New Age International Publishers, NewDelhi

Kothari, C.R. (2014). *Research Methodology: Methods and Techniques.* New Delhi: New Age International Publishers.

KPMG. (2010). *International Annual Review.* Stockholm: KPMG International Cooperation.

Krejcie, R.V. & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurements*, 30, 607-610.

Kulkarni, R., Bargstädt, H. J. & Huckfeldt, J. (2014). *Differential role of alliance leadership at various phases on projects in cross-cultural milieu*. Budapest: In Proceedings of the IPMA world congress on Project Management.

KURA (2017). *Using control systems to improve construction project outcomes*.

Latham, M. (2015). Constructing the team: Joint review of procurement and contractual arrangements in the UK construction industry. *Department of the Environment, UK.*

Lazzerini, B. & Mkrtchyan, L. (2011). Analyzing risk impact factors using extended fuzzy cognitive maps. *IEEE Systems Journal*, 5(2), 288-297.

Lehtiranta, M.Z. (2014). Criteria of Project Success: An Exploratory Re-examination. *International Journal of Project Management*, 17(4), 243–248.

Lewis, T. (2010). Teamwork quality and project success in software development: A survey of agile development teams. *Journal of systems and software*, 122(2), 274-286.

Li, J. & Zou, P. (2012). Risk identification and assessment in PPP infrastructure projects using fuzzy analytical hierarchy process and life-cycle methodology. *Construction Economics and Building*, 8(1), 34-48.

Lindborg, H.J. (2013). "Stake Your Ground: Unearthing the origins of stakeholder management". *Quality Progress*, 2(1), 1-3.

Ling, F. Y. Y. & Ma, Y. (2014). Effect of competency and communication on project outcomes in cities in China. *Habitat International*, 44(1), 324-331.

Liu, H. T. & Tsai, Y. L. (2012). A fuzzy risk assessment approach for occupational hazards in the construction industry. *Safety science*, 50(4), 1067-1078.

Liu, J. Y., Ren, F. & Liu, Y. (2011). Research on Monitoring-based Risk Management of Deep Excavation Engineering. *In Management and Service Science (MASS), 2011 International Conference on IEEE*, 1-4.

Lopes, L., & Antonio, A. V. (2013). Delays in IT Projects due to Failures in the Stakeholders Management. *Future Studies Research Journal*, 5(2), 158-185.

Love, P. E., Edwards, D. J. & Irani, Z. (2012). Moving beyond optimism bias and strategic misrepresentation: An explanation for social infrastructure project cost overruns. IEEE *Transactions on Engineering Management*, 59(4), pp. 560-571.

Lyons, T. & Skitmore, M. (2014). Project risk management in the Queensland engineering construction industry: a survey. *International journal of project management*, 22(1), 51-61.

Madeeha, S. & Naqvi, I. H. (2014). Impact of Internal Stakeholder's Engagement on Project portfolio Management Success, IT Industry in Lahore, Pakistan. *Sci.Int.(Lahore),* 26(4), 1777-1782.

Madeeha, S. & Naqvi, I. H. (2014). Impact of Internal Stakeholder's Engagement on Project portfolio Management Success, IT Industry in Lahore, Pakistan. *Sci.Int.(Lahore),* 26(4), 1777-1782.

Maichuhie, K. (2017). Official says roads will take 24 months to complete at Sh1.5 billion. https://www.standardmedia.co.ke/article/2001261366/official-says-roads-will-take-24-months-to-complete-at-sh1-5-billion

Maina, K. (2013). United Nations: a key player in a global movement for child friendly cities. *In Creating child friendly cities*, 5(7), 25-44.

Maina, S. M. & Kimutai, G. (2018). Stakeholder Management and Project Performance of Open Air Market Projects in Nyeri County, Kenya. *IOSR Journal of Business and Management (IOSR-JBM),* 20(7), 47-56.

Marhavilas, P. K., Koulouriotis, D. & Gemeni, V. (2011). Risk analysis and assessment methodologies in the work sites: On a review, classification and comparative study of the scientific literature of the period 2010–2009. *Journal of Loss Prevention in the Process Industries*, 24(5), 477-523.

Maru, A. A. (2015) Project Risk Management: Methodology Development for Engineering, Procurement and Construction Projects a Case Study in the Oil and Gas Industry. *American Journal of Civil Engineering*. 3(3),75-79. doi: 10.11648/j.ajce.20150303.14

Masrom, M. (2012). The enterprise systems experience-from adoption to success. *Framing the domains of IT research: Glimpsing the future through the past*, 173(2), 207-173.

Maunda, F. M., & Moronge, M. (2016). Influence of Project Life Cycle Management on Completion of Public Projects in Kenya: A Case Of Makueni Constituency. *The Strategic Journal of Business & Change Management*, 4(9), 162-184.

Mavuti, B. M., Kising'u, T. M. & Oyoo, J. J. (2019). Effect of project management practices on implementation of Kenya Ports Authority Funded projects. *The Strategic Journal of Business & Change Management,* 6 (2), 1110 – 1129.

Mbaabu, D. L. (2012). Econometric analysis of qualitative response models. *Handbook of econometrics*, 2(1), 1395-1457.

Mbaaru, D. (2012). Understanding and managing risks in large engineering projects. *International. Journal on Project. Management*, 19(2), 437–443.

Menoka, R. (2014). Stakeholder Engagement and Sustainability-related Project Performance in Construction. *Journal of Project Management*, 3.

Menoka,B, L, 1., David, B., Damian, F., & Edward, O. (2013). Stakeholder Engagement: Achieving Sustainability in the Construction Sector. *Sustainability* 2013, 6, 695-710; doi:10.3390/su5020695.

Meredith, J. R. & Mantel, S. J. J. (2009). *Project management: A managerial approach*. New York: John Wiley & Sons.

Miller, D. (2015). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research*, 1(1), 48-76.

Mkutano, S. M. & Sang, P. (2018). Project management practices and performance of non-governmental organizations projects in Nairobi City County, Kenya. *International Academic Journal of Information Sciences and Project Management*, 3(3), 1-22

Mohammed, P. (2015). Evidence on the role of age in team performance. *A comparative study in Peru and Spain. Employee Relations*, 31(3), 264 – 275.

Moodley, K. (2012). *Project Stakeholders, Engineering Project Management*. Edited by N. J.

Morris, P. (2014). *The anatomy of Major Projects*. Chichester: Wiley.

Morse, J. M., Barrett, M., Mayan, M., Olson, K. & Spiers J. (2002). Verification Strategies for Establishing Reliability and Validity in Qualitative Research. *International Journal of Qualitative Methods*, 1(2),13-22.

Mugabo, J. & Mulyungi, P. (2019).. *International Journal of Management and Commerce Innovations*, 6(2), 270-282.

Mugata, R. J. & Muchelule Y. (2018). Effect of Stakeholder Analysis on Performance of Road Construction Projects in Elgeyo Marakwet, County. *International Journal of Research in Education and Social Sciences* 1 (2), 88-106.

Mugenda, M. & Mugenda, G. A. (2003). *Research Methods: Qualitative and Quantitative Approach.* Nairobi: Acts Press, Nairobi.

Mugenda, M. & Mugenda, G. A. (2009). *Research Methods: Qualitative and Quantitative Approach.* Nairobi: Acts Press, Nairobi.

Mugenda, M. & Mugenda, G. A. (2013). *Research Methods: Qualitative and Quantitative.* , Nairobi: Acts Press, Nairobi.

Mulwa, F. W. (2011). *Participatory monitoring and evaluation of community projects. Community Based Project Monitoring, Qualitative Impact Assessment and People Friendly Evaluation Methods*. Eldoret: Zapf Chancery and P. Olivex Publishers.

Mulyungi, P. (2019). Construction of bypass roads in Meru, Kenya to be completed by December this year. https://constructionreviewonline.com/2019/08/construction-of-bypass-roads-in-meru-town-to-be-completed-by-december-this-year/

Mushori, J., Rambo, C. M. & Wafula, C.M. (2020). Influence of Management Ability of contractors on performance of road construction infrastructural projects: Beyond project implementation. *International journal of Science and Research*, 9(6), 968-979.

Musyoka, K.M. & Moronge M., (2017). Determinants of Implementation of County Government Construction Projects in Nairobi, Kenya. The Strategic Journal of Business & Change Management, Vol. 4, Iss. 2 (31), pp 524 -540,

Musyoki, A. N. & Gakuu, C. (2018). Institutional factors influencing implementation of infrastructure projects by county governments in Kenya: A case of Embu County, Kenya. *International Academic Journal of Information Sciences and Project Management*, 3(2), 446-471

Mutai, E. (2019). Bomas sues Attorney General over Langata Road land. https://www.businessdailyafrica.com/economy/Bomas-sues-AG-over-Langata-Road-land/3946234-5101532-uasxh2z/index.html

Mwakajo, I. S. & Kidombo, H.J.(2017). Factors influencing project performance: A case of county road infrastructural projects in Manyatta Constituency, Embu County, Kenya. *International Academic Journal of Information Sciences and Project Management*, 2(2), 111-123.

Mwanga, J.E. & Kayunze, K.A. (2016). Determinants of Community Participation in Planning HIV and AIDS Interventions under National Multisectoral Strategic Framework in Mtwara Region, Tanzania, *International Journal of Ebola, AIDS, HIV and Infectious Diseases and Immunity* 2(1), 29-46.

Naeem, S., Khanzanda, B., Mubashir, T & Sohail, H. (2018). Impact of Project Planning on Project Success with Mediating Role of Risk Management and Moderating Role of Organizational Culture. *International Journal of Business and Social Science*, 9(1), 88-98.

Nalweyiso, G., Nangoli, S., Muwanga, R., Byomire, G., Musasizi, Y. & Simiyu, S.W. (2015). Strategizing for project success in multifaceted public-sector stakeholder environments. *Journal of Economics and International Business Management,* 3(2), 46-50.

Nankoris, T., & Gakuu, C. M. (2017). Influence of Community Participation in Projects Identification and Project Design on Completion of CDF Funded Projects in Matapato South Ward, Kajiado Central Constituency, Kenya. *Journal of Entrepreneurship and Project Management*, 2(2), 20-33.

Naoum, E. (2014). Paving Roads to Prosperity for Africa's Farmers. *World Policy Journal*, 2(1), 23-65.

Ndegwa, M. N., Mavole, J.N., & Muhingi, W. N. (2017). Influence of Public Participation on Successful Implementation of Public Health Projects in Nyeri South Sub-County, Nyeri County, Kenya. *International Journal of Social and Development Concerns*,1.

Ndunda, A. N., Paul, S. N. & Mbura, L. K. (2017). Influence of stakeholder activities on implementation of rural road projects in Machakos County. *International Academic Journal of Information Sciences and Project Management, 2*(2), 1-20

Neely, A., Adams, C. & Kenerley, M. (2012). *The performance prism: the scorecard for measuring and managing business success, Financial Times, Prentice-Hall, London*. New York: Taylor & Francis.

Newcombe, W.L. (2013). *Social research methods: qualitative and quantitative approaches*. (6th Ed.). Boston: Pearson Education.

Newell, C.J. & South, J. (2009). Participating in community research: exploring the experiences of lay researchers in Bradford. *Community Work Family* 12(1), 75–89.

Ngige, F. (2014). *Impasse between Nyeri county government and Kura stalls road works*. https://www.standardmedia.co.ke/article/2000131686/impasse-between-nyeri-county-government-and-kura-stalls-road-works

Ngoma, D. (2012). A performance evaluation framework of development projects: An empirical study of Constituency Development Fund (CDF) construction projects in Kenya. *International Journal of Project Management*, 32(3), 492-507.

Ngundo, J. M. (2014). *Factors affecting effectiveness of risk management in public housing construction projects in Kenya: Case of Kibera slum upgrading housing scheme in Nairobi.* Unpublished.

Nijkamp, Y. Y. (2012). The risk monitoring of coal construction project based on system dynamics model. *In Information Systems for Crisis Response and Management (ISCRAM), 2011 International Conference on IEEE*, 1(10), 330-334.

Njenga, T.M. (2009). *A Critical Analysis of Public Participation in the Integrated Development Plans (IDP) of Selected Municipalities in Some Provinces (Gauteng, Eastern Cape, KwaZulu-Natal and Western Cape) in South Africa*. Master's Thesis, University of KwaZulu-Natal.

Njue, N. G., Mulwa, A. S., Kyalo, D. N. & Mbugua, J. M. (2019). Risk Management Practices And Performance Of Jua-Kali Empowerment Programmes In Nairobi, Kenya. *International Journal of Contemporary Applied Researches*, 6(2), 62-78.

Noble, H. & Smith, J. (2015). Issues of Validity and Reliability in Qualitative Research. *Evid Based Nur,* 18(12): 34-35.

Nyaguthii, T. (2013). *Stakeholders participation in project implementation.* Nairobi: Africa Center for Technology Studies.

Nyandika, F. O., & Ngugi, K. (2014). Influence of Stakeholders' Participation on Perormance of Road Projects at Kenya National Highways Authority. *European Journal of Business Management*, 1(11), 1-20.

Nyarangi, E. (2019). *Kenya Power on the spot over loose electricity lines*. https://www.standardmedia.co.ke/business/article/2001344756/kenya-power-on-the-spot- over-loose-electricity-lines

O'Halloran, B. C. (2014). *Awareness of stakeholder management amongst project managers in the construction industry in Ireland*. Ireland Press. https://esource.dbs.ie/bitstream/handle/10788/2071/poster_ohalloran_b_2014.pdf?sequence=2&isAllowed=y

Obare, J. O., Kyalo, D. N., Mulwa, A. S. & Mbugua, J. (2016). Implementation process of project control systems and performance of rural roads construction project in Kenya: Role of project team experience diversity. *European Scientific Journal*, 12(29), 408-422.

Ochieng, F.O., & Sakwa, M. (2018). Impact of Participatory Resource Mobilization in The Implementation of Community Water Projects on the Well-Being of Beneficiaries' Households in Kisumu County. *The Strategic Journal of Business & Change*, 5(4), 1709-1720.

Ogweno, B., Muturi, W. & Rambo, C. (2016). Determinants of Timely Completion of Road Construction Projects Financed by Kenya Roads Board in Kisumu County. *International Journal of Economics, Commerce and Management*, 4(11), 360-402.

Olander, S. & Landin, A. (2015). Evaluation of stakeholder influence in the implementation of construction projects. *International journal of project management*, 23(4), 321-328.

Oliveira, G. F. & Rabechini Jr, R. (2019). Stakeholder management influence on trust in a project: A quantitative study. *International Journal of Project Management*, 37(1), 131-144.

Oloo, R. O. & Ngugi, P. K. (2016). Challenges Facing Timely Completion of Road Projects Managed by Kenya National Highways Authority. *The Strategic Journal of Business & Change Management*, 3(4/62), 1210-1225.

Ondara,E., A., Bula H., Kamau L.(2017). Risk Management Strategies and Performance of Construction Firms in Selected Counties in Kenya. *International Journal of Management and Commerce Innovations* ,Vol. 5(2), pp: (917-923

Onyango, L.B., Bwisa, H., & Orwa, G. (2017). Critical Factors Influencing the Implementation of Public Infrastructure Projects in Kenya: A case of Thika Sub-County, Kiambu County Kenya. *International Journal of Scientific and Research Publications*, 7(5), 200-211.

Osborne, J. W., & Waters, E. (2002). *Four assumptions of multiple regression that researchers should always test. Practical Assessment, Research & Evaluation*, 8(2).

Osoro, E. (2012). Four assumptions of multiple regression that researchers should always test. *Practical Assessment, Research, and Evaluation*, 8(2), 26-31.

Oyugah, N. M. & Onyango, J. O. (2019). Effect of Stakeholder Involvement on Performance of Road Construction Projects in Uasin Gishu County, Kenya. *International Journal of Research in Education and Social Sciences (IJRESS)*, 2 (2), 29-42.

Paddock, D. J. (2013). Assessing and controlling the quality of a project end product: the earned quality method. *IEEE Transaction on Engineering Management*, 47(2), 88–97.

Pallant, L. (2014). Risk and its management in construction projects. *Proceedings of the Institution of Civil Engineers*, 78(3), 499-521.

Park, H. M. (2015). *Univariate analysis and normality test using SAS, Stata, and SPSS*.

Paton, S. & Andrew, B. (2019). The role of the Project Management Office (PMO) in product lifecycle management: A case study in the defence industry. *International Journal of Production Economics*, 208(2), 43-52.

Patton, M. Q. (2012). *Qualitative evaluation and research methods*. Ed. 3, *Thousand Oaks*: Sage Publications.

Pheng, L. S. & Wei, P. K. (2012). *A framework for implementing TQM in construction. In TQM. PICMET 2014 Proceedings*. Oregon: PICMET.

Phillip, L.A. (2013). Prejudice toward female leaders: backlash effects and women's impression management dilemma. *Social and Personality Psychology Compass*, 4(10), 807-820.

PMBOK. (2016). *Report on the Structure and Management of Public Spending publications*.

PMI. (2013). *A Guide to Project Management Body of Knowledge, 5th Ed*. Newtown Square: Project Management Institute.

Pole, G. & Lampard, B. (2010). A comparison of fuzzy logic and multiple regression analysis models in determining contingency in international construction projects. *Construction Innovation*, 13(4), 445-462.

Price Waterhouse Coopers, PWC (2013). *Cities of Opportunity: Building the future.*

Pritchard, C. L. (2015). *Risk Management – Concepts and Guidance*. Boca Raton: Proc Institute Civil Engineering.

Rao, P.C.K. (2017). *Project Management and Control*. New Delhi: Sultan Chad & Sons.

Raza, A. (2016). *Wasa Plan to supply water to citizens rejected*. Lahore.

Reed, M. S., Graves, A., Dandy, N., Posthumus, H., Hubacek, K., Morris, J. ... & Stringer, L. C. (2009). Who's in and why? A typology of stakeholder analysis methods for natural resource management. *Journal of environmental management*, 90(5), 1933-1949.

Regional Partnership for Resource Development (REPARED). (2009). *Conflicts: Kenya*., IFDM Gardens: John Chikati.

Richman, S. (2012). A Review on Critical Risk Factors in the Life Cycle of Construction Projects: *Journal of Civil Engineering Research*, 4(2), 31-36.

Rolstadås, A., Hetland, P. W., Jergeas, G. F. & Westney, R. E. (2011). A New Strategic Planning Model. *In Risk Navigation Strategies for Major Capital Projects*, 19(1), 109-117.

Rosario, J. G. (2010). On the leading edge: critical success factors in PROJECTS implementation. *Journal of project management*, 4(3), 26-36.

Rose, K. H. (2013). A Guide to the Project Management Body of Knowledge (PMBOK® Guide) Fifth Edition. *Project management journal*, 44(3), 11-31.

Salah, A. & Moselhi, O. (2015). Quantitative and qualitative risk in EPCM projects using fuzzy set theory. *In IFSA World Congress and NAFIPS Annual Meeting (IFSA/NAFIPS), 2013 Joint IEEE*, 5(5), 1177-1181.

Sambasivan, M. & Soon, Y.W. (2017). Causes and effects of delays in Malaysian construction industry, International Journal of Project Management, 25 (27), 517–526.

Sanghera, M. (2016). The impact of gender diversity on the performance of business teams: Evidence from a field experiment. *Journal of Management Science*, 59(7), 1514-1528.

Sarantakos, S. (2010). *Social Research*. (2nd Ed.). Melbourne: MacMillan Educational.

Sarnoe, L., Paucar-Caceres, A., Pagano, R. & Castellini, M. (2019). Using SSM in Project Management: Aligning Objectives and Outcomes in Organizational Change Projects. In *Problem Structuring Approaches for the Management of Projects*. Palgrave Macmillan, Cham.

Saunders, M., Lewis, P. & Thornhill, A. (2009). *Research methods for business students*, Essex: FT Prentice Hall.

Save the Children (2010).*Working with Social research*. London: Palgrave Macmillan.

Scherer, T. (2019). *The BIM impact on stakeholder management in airport construction projects*. A Doctoral dissertation, École de technologie supérieure.

Seboru, M. A., Mulwa, A. S., Kyalo, D.N. & Rambo, C.M. (2016). Acquisition of Materials and Performance of Road Construction Projects in Kenya: A Case of Nairobi County. *European Scientific Journal*. 12(32), 221-250.

Sekaran, U. & Bougie, R. (2009). *Research methods for business: A skill building approach*. Chichester: John Wiley & Sons.

Sekaran, U. (2003). *Research Methods for Business: A Skill-Building Approach. 4th Edition*, John Wiley & Sons, New York.

Sevier, A. C. Francis (1957). *Testing the Assumptions Underlying Multiple Regression, The Journal of Experimental Education*, 25:4, 323-330, DOI: 10.1080/00220973.1957.11010578

Shaheen, A. A. M., Wan, A. F. & Myers, R. P. (2014). FibroTest and FibroScan for the prediction of hepatitis C-related fibrosis: a systematic review of diagnostic test accuracy. *The American journal of gastroenterology*, 102(11), 2589-2591.

Shamas, B. S., Toora, H. & Ogunlana, K. (2010). *Construction Claims and Contracting Strategies*. Chichester: John Wiley and Sons.

Shapiro, S.P. (2015). Agency theory. *Annual Review of Sociology*, 31(2), 41-42.

Shariatfar, M., Beigi, H. & Mortaheb, M. M. (2019). Assessing Lifecycle Success of Petrochemical Projects–based on Client's Viewpoint. *KSCE Journal of Civil Engineering*, 23(1), 21-28.

Sheikh, N. (2010). *People's Participation in Development Projects at Grass-root Level: A case of a Lampur and Jagannathpur Union Parishad.* North South University, Bangldesh.

Shen, L.Y. (2009). Project Risk Management in Hong Kong., *International Journal of Project Management*, 15(2), 101-105.

Shenhar, A. J. & Dvir, D. (2017). *Reinventing Project Management: The diamond approach to successful growth and innovation*. Boston: Harvard Business School Press.

Silva, F. P., Jerónimo, H. M. & Vieira, P. R. (2019). Leadership competencies revisited: A causal configuration analysis of success in the requirements phase of information systems projects. *Journal of Business Research*, 5(41), 159-4.

Smith, N.J., Merna, T., & Jobling, P. (2006). Managing Risk in Construction Projects. Oxford: Blackwell.

Soetanto, R., D. G., Proverbs, D. G. & Holt, G. D. D. (2017). Achieving quality construction projects based on harmonious working relationships. *International Journal of Quality & Reliability Management* 18 (5), 528-548.

Standard Digital. (2019). *Meru bypasses construction still on course, says KURA* https://www.standardmedia.co.ke/business/article/2001337973/meru-bypasses-construction-still-on-course-says-kura

Stein, D. (2012). *Understanding the theory of change in International development*. London: Justice and Security Research Programme.

Sulemnana, M., Musah, A. B., & Simon, K.K. (2018). An Assessment of Stakeholder Participation in Monitoring and Evaluation of District Assembly Projects and Programmes in the Savelugu-Nanton Municipality Assembly, Ghana. *Ghana Journal of Development Studies*,15 (1), 173-195.

Sudhir, R. P & Xuemao, Z. (2009). *Testing for normality in linear regression models, Journal of Statistical Computation and Simulation*, 80:10, 1101-1113, DOI: 10.1080/00949650902964275

Sweeting, P. (2011). *Financial Enterprise Risk Management.* Cambridge: University Press.

Tabish, K. (2012). Success Traits for a construction Project. *Journal of Construction and Engineering*, 34(2), 51-60.

Tam, C. M., Zeng, S. X. & Deng, Z. M. (2014). Identifying elements of poor construction safety management in China. *Safety Science*, 42(7), 569-586.

Tammer, M. (2009). *XEarly stakeholder involvement in projects; Maturity Model for Construction Firms*. Published in Institute for Business Engineering, Utrecht University of Applied Science, Faculty of Natural Sciences & Technology

Taroun, A. (2014). Towards a better modelling and assessment of construction risk: Insights from a literature review. *International journal of Project management*, 32(1), 101-115.

TISA (2010). *Policy Proposals on Citizen Participation in Devolved Governance in Kenya*. Nairobi: Government Printer.

Tong-yin, S. (2011). Lao People's Democratic Republic: Health financing reform and challenges in expanding the current social protection schemes. *Promoting sustainable strategies to improve access to health care in the Asian and Pacific Region*, 8(5), 71-102.

Too, E. (2009). *Capabilities for strategic infrastructure asset management*. Queensland: Queensland University of Technology.

Turner, A., Baccarini, S. & Collins, B. A. (2014). *Demographic differences in organizations: Current research and future directions*. New York: Lexington Books/Macmillan.

Turner, J. R., Grude, K. V. & Thurloway, L. (Eds.). (2012). *The project manager as change agent: leadership, influence and negotiation*. London: McGraw-Hill.

Uher, T. E. & Toakley, A. R. (2011). Risk management in the conceptual phase of a project. *International Journal of Project Management*, 17(3), 161-169.

UKaid. (2015). *Uraban Infrastructure in Sub-Saharan Africa – Harnessing Land Values, Housing and Transport*. Report on Nairobi Case Study, Report No 1.8, 31 July, 2015.

Urbanski, M.,Haque, A., & Oino, I. (2019). The Moderating Role of Risk Management in Project Planning and Project Success; Evidence from Construction Business of Pakistan and the UK. *Engineering Management in Production Services*, 11(1), 23-25.

Usadolo, S.E. & Caldwe, M. (2016). *A Stakeholder Approach to Community Participation in a Rural Development Project*. California: SAGE Open.

Usman, N.D., Kamau, P.K. & Mireri, C. (2014).The Influence of Implementation Phase Principles on Project Performance within the Building Industry in Abuja, Nigeria. *Journal of Environmental Sciences and Resource Management*, 6(1), 125 –135.

United Nations Conference on Trade and Development (UNCTAD) (2017). Trade and development report, 2017: Retrieved from: https://unctad.org/en/PublicationsLibrary/tdr2017_en.pdf

UNRWA (2017). Annual operational report 2017for the reporting period 01 January – 31 December 2017. Retrieved from: https://www.unrwa.org/sites/default/files/content/resources/2017_annual_operational_report_final_lr.pdf

Vogel, I. (2012). Review of the use of 'Theory of Change' in International Development. *UK Department of International Development.*

Wambugu, L. N., Kyalo, N. D., Mbii, M. & Nyonje, R. O. (2015). *Research Methods: Theory and Practice*. Nairobi: Aura Publishers.

Wambui, D. W., Ombui, K. & Kagiri, A. (2015). Factors Affecting Completion of Road Construction Projects in Nairobi City County: Case Study of Kenya Urban Roads Authority (KURA). *International Journal of Scientific and Research Publications*, 5(11), 525-547.

Wamugu, J. W. & Ogollah, K. (2017). Role of stakeholders participation on the performance of constituency development fund projects in Mathira East constituency in Kenya. *International Academic Journal of Information Sciences and Project Management*, 2(1), 104-125

Wang, X. & J. Huang, J. (2016). The relationships between key stakeholder's project performance and project success: Perceptions of Chinese construction supervising engineers. *International Journal of Project Management*, 24(2), 253-260.

Watson, W.E., Kumar, K., & Michaelson, L.K. (2012). Cultural diversity's impact of interaction process and performance: comparing homogenous and diverse task groups'. *Academy of Management Journal,* 36(1), 590–602.

Watts, T. & McNair-Connolly, C. J. (2012). New performance measurement and management control systems. *Journal of Applied Accounting Research,* 13(3), 226-241.

Waweru, R. (2015). Factors which Promote Community Participation in the Community Driven Development Approach. *International Journal of Humanities & Social Science Studies,* 1(5), 13-18.

Wen, Q. & Qiang, M. (2019). Project Managers' Competences in Managing Project Closing. *Project Management Journal*, 8(28), 1983-2783.

Wi, H. & Jung, M. (2010). Modelling and analysis of project performance factors in an extended project-oriented virtual organization (EProVO). *Expert Systems with Applications,* 37(2), 1143-1151.

Wibowo, M.A., Hatmoko, J. U D., & Nurdiana, A. (2018). Risk Management in Indonesia Construction Project: A Case Study of a Toll Road Project. file:///C:/Users/Administrator/Downloads/62555%20(1).pdf

Wibowo, M.A., Hatmoko, J. U D., & Nurdiana, A. (2018). Risk Management in Indonesia Construction Project: A Case Study of a Toll Road Project. file:///C:/Users/Administrator/Downloads/62555%20(1).pdf

Willar, D. (2012). *Improving quality management system implementation in Indonesian construction companies. PhD, Civil Engineering and Built Environment*. Australia: QUT.

Williams, T. (2009). Allocation of contingency in activity duration networks. *Construction Management & Economics*, 17(4), 441-447.

Wilson, R. (2015). *Mastering Risk and Procurement in Project Management*. New Jersey: Pearson.

Wood, M., Daly, J., Miller, J. & Roper, M. (2011). Multi-method research: An empirical investigation of object-oriented technology. *Elsevier, The Journal of Systems and Software,* 48(5),13-26.

World Bank. (2014). *Implementation Status and Results Kenya: Kenya Transport Sector Support Project (P12409)*. Report No: ISR13712.

Wysocki, L. C. (2014). Performance Measurement and Adoption of Balanced Scorecards. A Survey of Municipal Governments in the USA and Canada. The *International Journal of Public Sector Management*, 17(3), 204 – 221.

Xie, L. L., Yang, Y., Hu, Y. & Chan, A. P. C. (2014). Understanding project stakeholders' perceptions of public participation in China's infrastructure and construction projects: Social effects, benefits, forms, and barriers. *Engineering, Construction and Architectural Management,* 21(2), 224 – 240

Xu, Y., Yeung, J. C., Chan, D., Wang, S. & Ke, Y. (2010). Developing a risk assessment model for PPP projects in China. *A fuzzy synthetic evaluation approach. Automation in Construction*, 19(7), 929-943.

Yamane, T. (1967). *Statistics: An introductory analysis*. New York: Harper & Row.

Yang, J., Shen, G. Q., Ho, M., Drew, D. S. & Xue, X. (2010). Stakeholder management in construction: An empirical study to address research gaps in previous studies. *International journal of project management*, 29(7), 900-910.

Yin, R. K. (2009). *Case study research: Design and methods (applied social research methods)*. London: Sage.

Yin, R. K. (2017). *Case Study Research and Applications :- Design and Methods*. 6th Edition. London: Sage.

Young, K. A. (2011). Using the case survey method to analyze policy studies. *Administrative Science Quarterly*, 20 (3), 371-381.

Yu, A. T., Shen, Q., Kelly, J. & Hunter, K. (2016). Investigation of critical success factors in construction project briefing by way of content analysis. *Journal of Construction Engineering and management*, 132(11), 1178-1186.

Zailani, S., Ariffin, H. A. M., Iranmanesh, M., & Moeinzadeh, S. (2016). The Moderating Effect of Project Risk Mitigation Strategies on the Relationship Between Delay Factors and Construction Project Performance. *Journal of Science and Technology Policy Management*, 7(3).

Zhang, L. & Fan, W. (2013). Improving performance of construction projects: A project manager's emotional intelligence approach. *Engineering, Construction and Architectural Management*, 20(2), 195-207.

Zhang, Y. & Fan, Z. P. (2014). An optimization method for selecting project risk response strategies. *International Journal of Project Management*, 32(3), 412-422.

Zhao, D., Lucas, J. & Thabet, W. (2010). Using virtual environments to support electrical safety awareness in construction. *In Simulation Conference (WSC), Proceedings of the 2009 winter*, 5(1), 2679-2690.

Zikmund, W. G., Babin, B. J., Carr, J. C. & Griffin, M. (2012). *Business research methods*. Cengage Learning

Zi-mei, L. & Ke-fan, X. (2013). *Fuzzy Set-based Risk Management for Construction Projects*. Canada: Concordia University.

Zwikael, O., & Ahn, M. (2011). The Effectiveness of Risk Management: An Analysis of Project Risk Planning Across Industries and Countries. *Risk Analysis: An International Journal*. Vol. 31, Iss. 1; pp.25-37

Zwikael, O., Pathak, R. D., Singh, G., & Ahmed, S. (2014). The moderating effect of risk on the relationship between planning and success. *International Journal of Project Management,* 32(3), 435-441.

Zuo, P.X.W., Zhang, G., Wang, J. & Jiayuan, M. (2014). Understanding the key risks in construction projects in China. *International Journal of Project Management*, 25(6), 601–614.

APPENDICES

Appendix I(a): Transmittal Letter

Matu Johnson Mwangi
University of Nairobi
School of Open and Distance Learning
P.O. Box 48413- 00100
Nairobi

Dear Respondent

I am a candidate at the University of Nairobi pursuing a degree of Doctor of Philosophy in Project planning and Management and part of the requirement for successful completion of my studies is to conduct a research. The topic of my research is; **Stakeholder participation in project lifecycle management, Risk Management Practices and Completion of urban road transport infrastructure projects in Kenya.** The purpose of this study is to examine the influence of stakeholder participation in project lifecycle management on urban road projects in the country. Through this survey, the level of stakeholder participation in the individual phases of the project life cycle will be assessed and the influence of better stakeholder participation in completion of road projects will be examined. For the purpose of this study stakeholders considered in the study include; Client Project Implementation team, Project planners, Contractors, Consultants, Service Providers (Power, Water, communication), Land Authorities, Land Owners, and Community).

You have been identified to participate in this study as a respondent because of your role as a participant in the implementation of road infrastructure projects in Kenya. The purpose of this letter is to request you to kindly participate in this research by filling the attached questionnaire as accurately as you can. I seek your understanding and assistance in this research. The information you provide will be treated as **strictly confidential**.

The data, including findings, will be used for academic purposes only.

I thank you most sincerely for your time and cooperation.

Yours Faithfully,

Matu Johnson Mwangi

Appendix I(b): Introductory Letter

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

Your Ref:

Our Ref:

Telephone: 318262 Ext. 120

REF: UON/ODeL/NLC/29/333

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

2nd October, 2018

TO WHOM IT MAY CONCERN

RE: JOHNSON MWANGI MATU -REG NO: L83/51493/2017

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 Doctor of Philosophy in Project Planning and Management.

He has successfully completed the coursework and currently working on Research Thesis titled "**Stakeholder Participation in Project Lifecycle Management, Risk Management Practices and Completion of Urban Road Transport Infrastructure Projects in Kenya.**"

Any assistance accorded to him will be highly appreciated.

04 OCT 2018

CAREN AWILLY
CENTRE ORGANIZER
NAIROBI LEARNING CENTRE

Appendix II: Authorization Letter from National Commission for Science, Technology and Innovation (NACOSTI)

NACOSTI

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471,
2241349,3310571,2219420
Fax:+254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/19/39452/27617**

Date: **17th January, 2019**

Johnson Mwangi Matu
University of Nairobi
P. O Box 30197-00100
NAIROBI

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Stakeholder participation in project lifecycle management, risk management practices and completion of urban road transport infrastructure projects in Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **selected Counties** for the period ending **15th January, 2020.**

You are advised to report to **the County Commissioners and the County Directors of Education of the selected Counties** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

Kalerwa
GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Approved
13/3/2019
COUNTY COMMISSIONER
NAIROBI COUNTY
P. O. Box 30124-00100, NBI
TEL: 341666

COUNTY DIRECTOR OF EDUCATION
14/3/19
FOR THE
KIAMBU COUNTY

Copy to:

The County Commissioners
Selected Counties.

The County Directors of Education
Selected Counties.

Appendix III: Research Permit from National Commission for Science, Technology and Innovation (NACOSTI)

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014.

CONDITIONS

1. The License is valid for the proposed research, location and specified period.
2. The License and any rights thereunder are non-transferable.
3. The Licensee shall inform the County Governor before commencement of the research.
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
5. The License does not give authority to transfer research materials.
6. NACOSTI may monitor and evaluate the licensed research project.
7. The Licensee shall submit one hard copy and upload a soft copy of their final report within one year of completion of the research.
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice.

National Commission for Science, Technology and innovation
P.O. Box 30623 - 00100, Nairobi, Kenya
TEL: 020 400 7000, 0713 788787, 0735 404245
Email: dg@nacosti.go.ke, registry@nacosti.go.ke
Website: www.nacosti.go.ke

REPUBLIC OF KENYA

NACOSTI

National Commission for Science, Technology and Innovation

RESEARCH LICENSE

Serial No.A 22788

CONDITIONS: see back page

THIS IS TO CERTIFY THAT:
MR. JOHNSON MWANGI MATU
of UNIVERSITY OF NAIROBI, 0-300 NAIROBI, has been permitted to conduct research in *Kiambu , Kisii , Laikipia , Machakos , Meru , Nairobi, Nyeri , Uasin-Gishu , Westpokot Counties*

on the topic: *STAKEHOLDER PARTICIPATION IN PROJECT LIFECYCLE MANAGEMENT, RISK MANAGEMENT PRACTICES AND COMPLETION OF URBAN ROAD TRANSPORT INFRASTRUCTURE PROJECTS IN KENYA*

for the period ending:
15th January,2020

Permit No : NACOSTI/P/19/39452/27617
Date Of Issue : 17th January,2019
Fee Recieved :Ksh 2000

....
Applicant's Signature

....
Director General
National Commission for Science, Technology & Innovation

Appendix IV: Research Authorization Letters from County Commissioners and County Directors of Education

REPUBLIC OF KENYA

MINISTRY OF EDUCATION, SCIENCE & TECHNOLOGY
STATE DEPARTMENT OF BASIC EDUCATION

-Email: elimu|cdewest pokot @ education.go.ke
Web: www.education.go.ke
-cdewestpokot@yahoo.com.
When replying please quote date $ Ref.

COUNTY EDUCATION OFFICE
WEST POKOT COUNTY
P.O. BOX 17
KAPENGURIA.

27th March, 2019.

REF: WPC/EDUC/ADM/15/20/VOL.1/115

JOHNSON MWANGI MATU
P.O Box 3786-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your authorization, you are hereby permitted to carry out research on ***"Stakeholder participation in project lifecycle management, risk management practices and completion of urban road transport infrastructure projects in Kenya*** "for a period ending **15th January, 2020**.

Through this letter therefore, you are free to request and be accorded any necessary cooperation and assistance you may require.

COUNTY DIRECTOR OF EDUCATION
WEST POKOT
27 MAR 2019
P. O. Box 17 - 30600,
KAPENGURIA

(EDWARD WANGAMATI)
FOR: COUNTY DIRECTOR OF EDUCATION
WEST POKOT COUNTY.

THE PRESIDENCY
MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

Telegrams: **"DISTRICTER"**
COUNTY COMMISSIONER
Telephone
Email: ccwestpokot@gmail.com

County Commissioner
West Pokot County,
P.O BOX 1-30600,
KAPENGURIA.

REF: OOP.CC.ADM.15/14 VOL.I/249

27TH MARCH, 2019

TO WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION
JOHNSON MWANGI MATU

Reference is made to the Director/CEO, National Commission for Science, Technology and Innovation's letter Ref. No. NACOSTI/P/19/39452/27617 of 17th January, 2019 on the above subject.

This is to inform you that the above named person, who is a student from University of Nairobi has been dully authorized to carry out research on "***Stakeholder participation in project lifecycle management, risk Management practices and completion of urban road transport infrastructure projects in Kenya "*** for the period ending 15th January, 2020.

The purpose of this letter therefore, is to request you to accord him your cooperation, guidance and necessary assistance he may require during his tour of research within the County as mentioned above.

(JARED RATEMO)
FOR: COUNTY COMMISSIONER
WEST POKOT COUNTY

C.C.

COUNTY DIRECTOR OF EDUCATION
WEST POKOT COUNTY

REPUBLIC OF KENYA

MINISTRY OF EDUCATION
STATE DEPARTMENT OF BASIC EDUCATION

Mobile : **0721820731**
Email: cdeuasingishucounty@yahoo.com
: cdeuasingishucounty@gmail.com
When replying please quote:

County Director of Education,
Uasin Gishu County,
P.O. Box 9843-30100,
ELDORET.

Ref: No. **MOEST/UGC/TRN/9/VOL III/36**

26TH MARCH.2019

Johnson Mwangi Matu
University of Nairobi
P.O Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

This office has received a request from your Institution to authorize you to carry out research on "***Stakeholder participation in project lifecycle management, risk management practices and completion of urban road transport infrastructure projects in Kenya,***" within Uasin Gishu County.

We wish to inform you that the request has been granted until **15th January, 2020**. The authorities concerned are therefore requested to give you maximum support.

We take this opportunity to wish you well during this data collection.

FOR COUNTY DIRECTOR OF EDUCATION
UASIN GISHU COUNTY
P. O. Box 9843, ELDORET
Tel: 0719-127 212/ 053-2063342

Michael Psinen
***For:* COUNTY DIRECTOR OF EDUCATION**
UASIN GISHU

ISO 9001
BUREAU VERITAS
Certification

REPUBLIC OF KENYA

MINISTRY OF EDUCATION

State Department of Early Learning and Basic Education

Telegram: "EDUCATION"
Telephone: 058-30695
Email address: cdekisii@gmail.com
When replying please quote

COUNTY DIRECTOR OF EDUCATION
KISII COUNTY
P.O. BOX 4499 - 40200
KISII.

REF: CDE/KSI/RESECH/98

DATE: 26th March, 2019

Johnson Mwangi Matu
University of Nairobi
P.O.Box 30197-00100
Nairobi.

RE: RESEARCH AUTHORIZATION.

Following your research Authorization vide your letter ***Ref. NACOSTI/ P/19/39452/27617/,*** to carry out research in selected Counties, this letter refers.

I am pleased to inform you that you can carry out your research in the County on ***"Stakeholder participation in project lifecycle management, risk management practises and completion of urban road transport infrastructure projects in Kisii County, Kenya"*** for a period ending***, 15th January, 2020.***

Wish you a successful research.

COUNTY DIRECTOR OF EDUCATION
KISII COUNTY
26 MAR 2019
P.O. Box 4499 - 40200, KISII.

Pius Ng'oma
County Director of Education
KISII COUNTY.

REPUBLIC OF KENYA
MINISTRY OF EDUCATION
State Department of Early Learning and Basic Education

Telegrams: " ELIMU " Meru
EMAIL: cdemerucounty@gmail.com
When Replying please quote

County Director Of Education
Meru County
P.O. Box 61
MERU

Ref: MRU/C/EDU/11/1/210

19th March, 2019

TO WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATON – JOHNSON MWANGI MATU

Reference is made to letter Ref: NACOSTI/P/19/39452/27617/ dated 17th January, 2019.

Authority is hereby granted to **Johnson Mwangi Matu** to carry out research on *"Stakeholder participation in project lifecycle management, risk management practices and completion of urban road transport infrastructure projects in Kenya", in Meru County* for the period ending 15th January, 2020.

Kindly accord him the necessary assistance.

COUNTY DIRECTOR OF EDU...
MERU COUNTY
P.O. Box 61-60200
TEL: 064-32372 MERU

Sarafino Samuel
For: County Director of Education
MERU

THE PRESIDENCY
MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

Telegrams:
Telephone:
Email: ccmeru@yahoo.com
Fax:

COUNTY COMMISSIONER
MERU COUNTY
P.O. BOX 703-60200
MERU.

When replying please quote
Ref: ED.12/VOL.III/100
And Date

19th March 2019

TO WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION – JOHNSON MWANGI MATU

This is to inform you that **Johnson Mwangi Matu** of University of Nairobi, has reported to this office as directed by the Commission for Science, Technology and Innovation and will be carrying out Research on "**Stakeholder participation in project lifecycle management, risk management practices and completion of urban road transport infrastructure projects in Meru County, Kenya.**"

Since authority has been granted by the said Commission, and the above named student has reported to this office, he can embark on his research project for a period ending **15th January, 2020.**

Kindly accord him any necessary assistance he may require.

COUNTY COMMISSIONER
MERU COUNTY
P. O. Box 703 -60200, MERU

W K KATONON
FOR: COUNTY COMMISSIONER
MERU

REPUBLIC OF KENYA

MINISTRY OF EDUCATION
STATE DEPARTMENT OF EARLY LEARNING AND BASIC EDUCATION

E-Mail –centralpde@gmail.com
Telephone: Nyeri (061) 2030619
When replying please quote

OFFICE OF THE COUNTY
DIRECTOR OF EDUCATION
P.O. Box 80 - 10100,
NYERI

CDE/NYI/GEN/23/VOL.3/38

19th March, 2019

Mr. Johnson Mwangi Matu
University of Nairobi
KENYA

RE: RESEARCH AUTHORIZATION

Reference is made to Secretary National Commission for Science, Technology and Innovation letter Ref. NACOSTI/P/19/39452/27617 of 17th January, 2019 on the above subject.

Kindly note that you have been authorized to undertake the research on ***"Stakeholder participation in project lifecycle management, risk management practices and completion of urban road transport infrastructure projects in Kenya"*** for a period ending 15th January, 2020.

COUNTY DIRECTOR OF EDUCATION
P. O. Box 80,
NYERI.
Tel: 061 - 2030658

OBIERO J.O.
COUNTY DIRECTOR OF EDUCATION
NYERI

c.c.
National Commission for Science
Technology and Innovation,
P.O. Box 30623-00100
NAIROBI

THE PRESIDENCY
MINISTRY OF INTERIOR AND CO-ORDINATION OF NATIONAL GOVERNMENT

E-mail: nyericountycommissioner@yahoo.com
Telephone: 061 2030619/20
Fax: 061 2032089
When replying please quote

NYERI COUNTY COMMISSIONER
P.O. BOX 33-10100
NYERI

Ref. No. NYC/ADM/1/57/VOL.VI/163

18th March, 2019

Eng. J. M. MATU
P O BOX 3786 – 00100
NAIROBI

RE: RESEARCH AUTHORIZATION

Reference is made to your letter dated 11th March, 2019 on the above subject.

Approval is hereby granted to carry out research on "***Stakeholder participation in project lifecycle management, risk management practices and completion of urban road transport infrastructure projects in Kenya.***"

The period of study ends on 15th January 2020.

F. MWANGI
FOR: COUNTY COMMISSIONER
NYERI COUNTY

MINISTRY OF EDUCATION
STATE DEPARTMENT OF EDUCATION
COUNTY DIRECTOR OF EDUCATION OFFICE - LAIKIPIA

Telegrams: "Education" LKP.
Telephone: 062-31518, 31519
Email:laikipiacountydirector@yahoo.com

County Director of Education,
Laikipia County,
P.O. Box 253.
NANYUKI.

When replying please quote:
Ref: LPA/C/A/94 VOL.I/(30)

19th March, 2019

TO: WHOM IT MAY CONCERN

RE: RESEARCH AUTHORITY – JOHNSON MWANGI MATU

The National Commission for Science, Technology and Innovation letter ref. No. **NACOSTI/P/19/39452/27617** dated **17th January, 2019** refers.

This is to inform you that the above named person has been authorized to carry out research on ***"Stakeholder participation in project lifecycle management, risk management practices and completion of urban road transport infrastructure projects in Kenya, a case of Laikipia County".,*** for a period ending ***26th February, 2020.***

After completion of your research findings please furnish this office with a copy of the research.

Kindly assist him where possible.

COUNTY DIRECTOR OF EDUCATION
LAIKIPIA

DR. FELIX AMADI
For: COUNTY DIRECTOR OF EDUCATION,
LAIKIPIA COUNTY

C.C.
National Commission for Science,
Technology and Innovation,
NAIROBI.

The County Commissioner,
LAIKIPIA

ISO 9001:2008 CERTIFIED

THE PRESIDENCY
MINISTRY OF INTERIOR & CO-ORDINATION OF NATIONAL GOVERNMENT

When replying please quote
Fax: 062-2031874
E-MAIL: *cclaikipiacounty@yahoo.com*

COUNTY COMMISSIONER
LAIKIPIA COUNTY
P.O. BOX 11-10400
NANYUKI

Ref . NO. CC.ED.12/14 VOL.1/(252)

8th March, 2019

Johnson Mwangi Matu
University of Nairobi
P O Box 30197 -00100,
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on **"Stakeholder participation in project lifecycle management, risk management practices and completion of urban road transport infrastructure projects in Kenya"** *I* am pleased to inform you that you have been authorized to carry out research in Laikipia County for the period ending 15th January, 2020.

COUNTY COMMISSIONER
LAIKIPIA

O. M KYATHA
COUNTY COMMISSIONER
LAIKIPIA

THE PRESIDENCY

MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

OFFICE OF THE
County Commissioner
P.O. Box 1 - 90100
MACHAKOS.

Telephone: 21009 and 21983 – 90100
Email Address:countycommasaku@gmail.com
Fax No. 044-21999

When replying please quote:

REF NO.CC/ST/ADMS/9VOL.11/53

DATE: 15th March, 2019

The Deputy County Commissioners
MACHAKOS COUNTY

RE: RESEARCH AUTHORIZATION:ENG JOHNSON M MATU

The National Commission for Science, Technology and Innovation has authorized the below named researchers to carry out a research on ***"on urban roads for academic purposes"*** in Machakos County for the period ending **17th January, 2020.**

Please be notified and accord him the necessary assistance.

P. K. NTHIWA
For: COUNTY COMMISSIONER
MACHAKOS

COUNTY COMMISSIONER
MACHAKOS
P.O. Box 1 MACHAKOS

MINISTRY OF EDUCATION
STATE DEPARTMENT OF EDUCATION

Telegrams: "**SCHOOLING**" Machakos
Telephone: Machakos (
Fax: Machakos
Email –cdemachakos@yahoo.com
When replying please quote

OFFICE OF THE
COUNTY DIRECTOR OF
EDUCATION
P.O. BOX 2666-90100,
MACHAKOS

MKS/ED/CDE/U/1/VOL.3/22 **Date:** 15TH March, 2019

RE: RESEARCH AUTHORIZATION- JOHN MWANGI MATU

Reference is made to the letter from National Commission for Science, Technology and Innovation Ref: **NACOSTI/P/19/39452/27617** dated **17th January, 2019.**

You are hereby authorized to carry out your research on, **"Stakeholders participation in project lifestyle management, risk management practices and completion of urban road transport infrastructure projects in Kenya,"** *for a period ending* ***15th January, 2020.***

Please be notified and accord him necessary assistance.

COUNTY DIRECTOR OF EDUCATION
MACHAKOS
15 MAR 2019
MINISTRY OF EDUCATION
P.O. Box 2666-90100 MACHAKOS

NANCY AFANDI
FOR: COUNTY DIRECTOR OF EDUCATION
MACHAKOS

OFFICE OF THE PRESIDENT

MINISTRY OF INTERIOR AND CO-ORDINATION OF NATIONAL GOVERNMENT

COUNTY COMMISSIONER, KIAMBU

Telephone: 066-2022709
Fax: 066-2022644
E-mail: countycommkiambu@yahoo.com
When replying please quote

County Commissioner
Kiambu County
P.O. Box 32-00900
KIAMBU

Ref.No:**ED.12 (A) /1/VOL.III/115**

Date: 14th March, 2019

Johnson Mwangi Matu
University of Nairobi
P.O.Box 30197-00100
NAIROBI

RE: RESEARCH AUTHORIZATION

Reference is made to National Commission for Science, Technology and Innovation letter Ref No. **NACOSTI/P/19/39452/27617** dated **17th January, 2019.**

You have been authorized to conduct research on "***Stakeholder participation in project lifecycle management, risk management practice and completion of urban road transport infrastructure projects in Kenya"*** *The* research will be carried out in ***Kiambu County*** *for a period ending* **15th January, 2020..**

You are requested to share your findings with the County Education Office upon completion of your research.

Alice

Alice M. Nyathoko
For: County Commissioner
KIAMBU COUNTY

Cc County Director of Education
KIAMBU COUNTY

National Commission for Science, Technology and Innovation
P.O. Box 30623-00100
NAIROBI

All Deputy County Commissioners
KIAMBU COUNTY

Republic of Kenya

MINISTRY OF EDUCATION

STATE DEPARTMENT OF EARLY LEARNING AND BASIC EDUCATION

Telegrams: "SCHOOLING", Nairobi
Telephone; Nairobi 020 2453699
Email: rcenairobi@gmail.com
cdenairobi@gmail.com

REGIONAL DIRECTOR OF EDUCATION
NAIROBI REGION
NYAYO HOUSE
P.O. Box 74629 – 00200
NAIROBI

When replying please quote

Ref: RCE/NRB/RESEARCH/1/64/VOL.I

Date: 13th March, 2019

Johnson Mwangi Matu
University of Nairobi
P. O. Box 30197- 00100
NAIROBI

RE: RESEARCH AUTHORIZATION

We are in receipt of a letter from the National Commission for Science, Technology and Innovation regarding research authorization in Nairobi County on *"Stakeholder participation in project lifecycle management, risk management practices and completion of urban road transport infrastructure projects in Kenya".*

This office has no objection and authority is hereby granted for a period ending **15th January, 2020** as indicated in the request letter.

Kindly inform the Sub County Director of Education of the Sub County you intend to visit.

REGIONAL COORDINATOR OF EDUCATION NAIROBI 13 MAR 2019 P.O. Box 74629, NAIROBI

MAINA NGURU
FOR: REGIONAL DIRECTOR OF EDUCATION
NAIROBI

Copy to: Director General/CEO
National Commission for Science, Technology and Innovation
NAIROBI

Appendix V: Research Questionnaire

Questionnaire for KURA project implementation team members, KURA planners and directors of departments, Road contractors, project site management and Consultants, Supervision teams

This questionnaire contains the following seven parts. 1, 2, 3, 4, 5, 6 and 7

Please kindly tick [√] in the appropriate box or write in the blank spaces provided, to indicate your opinion. Answer questions which you feel comfortable in responding.

PART 1: RESPONDENTS DATA			
RD 01	Questionnaire serial no. 070		
RD 02	Date:		
RD 03	Project Name		
RD 04	County:		
RD 05	Respondent's First Name: (opt ional)		
RD 06	Gender:	Male	
		Female	
RD 07	Highest education level	Certificate Diploma Bachelor's Degree Master's Degree Ph.D	
RD 08	No. of years in the construction industry	1 - 5 years	
		6-10 years	
	(Tick the group that you belong to)	11-15 years	
		More than 16 years	
RD 09	Job/Trade/Profession		
RD 10	Name of your organization		
RD 11	Position in the organization		
RD 12	Department in the organization		
RD 13	In what phases of the project life cycle have you participated in? ***(Tick all phases that you have participated in during your working period)***	Project initiation (Feasibility, preliminary design)	
		Project planning (Design, bidding)	
		Project execution (Construction)	
		Project closure (handover, Commissioning)	

RD 14 Please indicate the names of the road projects that you have been involved in.

…………………………………………………………………………………………………
…………………………………………………………………………………………………
…………………………………………………………………………………………………
…………………………………………………………………………………………………

PART 2: COMPLETION OF URBAN ROAD TRANSPORT INFRASTRUCTURE PROJECTS

This section contains statements on completion of urban road transport infrastructure projects. Based on your experience on the past and/or current project, please indicate your answer to the statements below by ticking the appropriate scale 1-5 among the following: Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4) Strongly Agree (5).

Completion of urban road transport infrastructure projects refers to completion of project activities in terms of time, quality, cost, client and stakeholder's satisfaction.						
	Statements	Strongly Disagree **(1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	Strongly Agree **(5)**
	Project Completion within Time					
CP-01	The project implementation is on schedule					
CP-02	Land acquisition process affected project completion					
CP-03	There were many variation orders during construction phase					
CP-04	The evacuation of informal settlements affected the project completion time					
CP-05	Relocation of existing service lines (power, water, sewer, data, telephone) was delayed					
	Project Completion within Cost					
CP-06	The contractor's payments were delayed thereby attracting interest payments					
CP-07	Variations in the scope of works caused increase in the project cost					
CP-08	Project managers monitored project activities to prevent cost overruns					
CP-09	There was fluctuation in the cost of fuel, materials and labor					
CP-10	There were design omissions which contributed to additional cost					

	Project Completion within Quality					
CP-11	There were minimum repairs works on the completed sections of road					
CP-12	Quality tests carried out on completed works were within specifications					
CP-13	The surface of the completed road sections is smooth and comfortable to ride on					
CP-14	Completed road sections are easily maintained.					
CP-15	The road does not flood during heavy rains					
	Stakeholder Satisfaction					
CP-16	The completed part of road has helped to substantially reduce travel time					
CP-17	The value of the land in the area has increased					
CP-18	The area has attracted new commercial investments					
CP-19	The matatu fares have reduced substantially					
CP-20	Adequate safety facilities for pedestrians were provided					

2 (a) What are the challenge(s) did you encounter in your effort to meet the time, cost and quality aspects of the projects you were involved in?

…………………………………………………………………………………………
…………………………………………………………………………………………

2 (b) If the project schedule was/is delayed please indicate the difference between the planned progress and actual progress. By what percentage of time was it delayed.
…………………………………………………………………………………………
…………………………………………………………………………………………

2 (c) If the project cost is exceeded, what is the percentage increase in cost to the project? In your opinion what factors led to the additional cost
…………………………………………………………………………………………
…………………………………………………………………………………………
…………………………………………………………………………………………
…………………………………………………………………………………………

2 (d) Kindly give your opinion on what is the biggest factor that contributes to poor completion of urban roads
…………………………………………………………………………………………
…………………………………………………………………………………………
…………………………………………………………………………………………

PART 3: PARTICIPATION IN PROJECT INITIATION

This section contains statements on participation in project initiation: Please indicate the level of your agreement in the statements below by ticking the appropriate scale 1-5 among the following: Strongly Disagree (1), Disagree (2), neutral (3), Agree (4) Strongly Agree (5).

This is the phase that stakeholder needs are assessed and the project selected. Feasibility studies are carried out and recommendations including justification are made and approval to proceed with the project planning is granted. Project team is selected including identification of project deliverables and participating work groups.

	Statements	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
	Stakeholder identification					
I-01	Stakeholders identification was carried out during project initiation phase					
I-02	The stakeholders were engaged through letters, email, advertisement in local dailies.					
I-03	The county government was identified as a vital stakeholder to the project.					
I-04	Stakeholders interest, power and influence was analyzed to assist in establishing how to manage them.					
I-05	The community was considered as vital stakeholder to the success of the project.					
	Setting Goals and objectives					
I-06	The project planning team consulted the community in setting of the project goals during project initiation phase					
I-07	Only the key stakeholders were consulted in setting of the project objectives during project initiation phase					
I-08	Project planning team took views of the community along the project roads into consideration in setting of goals and objectives					
I-09	Contribution of project team members was considered and taken on board					
I-10	The project team prepared a realistic timeframe for completing the project goals.					
	Feasibility Studies					
I-11	Traffic surveys were carried out to determine the capacity of the road					
I-12	Consultative meetings involved the community who had an input in establishing the scope of the project based on available funds.					

I-13	The community and other stakeholders were involved in the consultative meetings for environmental and social impact assessment studies.					
I-14	Economic and Financial viability of the project was carried out by the client/consultant based on preliminary designs					
I-15	Utility service providers provided information on the location of service lines					
	Needs Assessment					
I-16	A needs assessment survey was carried out through interviews					
I-17	The community through their elected leaders identified the road project as a priority to improve their welfare.					
I-18	The project was selected by the government because the existing road was in poor condition					
I-19	Involvement of the community in needs assessment surveys is important in ensuring their ownership of the project.					
I-20	the community knew about the road project before they saw the construction equipment being brought to site by the contractor.					

4 (a) Give reasons why participation in project initiation phase can improve successful completion of urban road projects?
…………………………………………………………………………………………

4 (b) In your opinion who are the critical stakeholders that can contribute effectively to successful project completion in the initiation stage, in the projects you have been involved in.

…………………………………………………………………………………………
…………………………………………………………………………………………
……………………

4 (c) Kindly give your opinion on the level of stakeholder participation in the initiation phase of the projects that you have been involved in.
…………………………………………………………………………………………
…………………………………………………………………………………………
……………………

PART 4: PARTICIPATION IN PROJECT PLANNING

This section contains statements on participation in project planning: Please indicate the level of your agreement in the statements below by ticking the appropriate scale 1-5 among the following: Strongly Disagree (1), Disagree (2), neutral (3), Agree (4) Strongly Agree (5).

During this phase detailed project plans are developed to establish project scope, time, cost estimates, budget plan, quality specifications, risk management practices, and monitoring including control plans, etc.

	Statement	Strongly Disagree **(1)**	Disagree **(2)**	Neutral **(3)**	Agree **(4)**	Strongly Agree **(5)**
	Budgeting					
P-01	The community and other stakeholders were consulted during the budgeting process					
P-02	The client and land commission evaluated the cost of land acquisition and planned the related budget to reduce the associated risks during the design phase					
P-03	The client and the relevant service providers evaluated the cost and planned a budget for the removal and relocation of service lines to reduce risks.					
P-04	Key stakeholders worked together with experts on cost estimates and budgeting process.					
P-05	There was a planned budget for environmental and social impacts studies and management during construction					
	Resource Planning					
P-06	Key stakeholders gave their opinions on type and quantity of resources required for the project					
P-07	The client does not involve other stakeholders in sourcing of funding for the project					
P-08	The minimum quantity of construction machinery, tools and equipment required to deliver the project is estimated by the client/consultant					
P-09	Procurement of sub-contractors for the removal and relocation of service lines was not carried out well in advance of start of construction					
P-10	Number and qualification of key personnel was established, and compiled into a project team during planning					

	Schedule of activities					
P-11	Stakeholders participate in establishing project deliverables					
P-12	Key stakeholders have the necessary qualification and experience in developing a Work Breakdown Structure for the project					
P-13	Activities for land acquisition are planned at this stage.					
P-14	Schedule of activities for relocation of service lines was prepared					
P-15	Programme of work was approved and signed off by stakeholders					
	Scope planning					
P-16	Project beneficiaries are involved in clearly defining the scope of work					
P-17	The project scope is dependent on the amount of funds allocated to the project by the client and stakeholders have no input in decision making					
P-18	The community request for adequate pedestrian walkways, zebra crossings and footbridges are taken into consideration by the client					
P-19	The scope of relocation of service lines is determined by relevant government agency based on information provided by stakeholders					
P-20	The scope of land acquisition was determined by the client during the design phase.					

5 (a) How can community participation in the project planning management phase improve project completion?

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5 (b) In your opinion which stakeholders can contribute substantially to project successful completion in the planning phase

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PART 5: PARTICIPATION IN PROJECT EXECUTION

This section contains statements on participation in project execution: Please indicate the level of your agreement in the statements below by ticking the appropriate scale 1-5 among the following: Strongly Disagree (1), Disagree (2), neutral (3), Agree (4) Strongly Agree (5).

This is the project implementation phase where the plan is put into action and work of the project is executed in accordance with the planned deliverables.						
	Statement	Strongly Disagree	Disagree	Neutral **(3**	Agree **(4)**	Strongly
	Pre-construction meeting					
E-01	All key project stakeholders attended the kick –off meeting					
E-02	The project goals were discussed and understood by stakeholders before embarking on any project work					
E-03	The scope of the project was well articulated by the client during the meeting					
E-04	The role and responsibility of each stakeholder was spelt out during the kick –off meeting					
E-05	The contractor was asked to prepare the programme of works and cash flow projections for project execution.					
	Execution of planned activities					
E-06	As a key stakeholder I participated in the review and implementation of project activities through site inspections and regular site meetings.					
E-07	Key stakeholders were consulted whenever there was need to change the original planned activities.					
E-08	Government agencies remove and relocate service lines and acquire land far ahead of the planned construction activities.					
E-09	The client participated in mobilizing and managing the project team.					
E-10	The community followed up construction activities to ensure their interests were taken care of.					
	Monitoring and controlling of project activities					
E-11	The project management team controlled the project cost					
E-12	The project management team requested and received feedback from the other stakeholders regarding the quality of work					
E-13	Government agencies responsible for land acquisition and relocation of service lines efficiently monitored their activities					
E-14	Community concerns were considered and incorporated in the agenda for monthly progress meetings.					

E-15	Quality of work was not properly monitored and controlled by the consultants.					
	Communication					
E-16	All stakeholders received Information on the progress of work frequently from project supervision team through relevant communication channel.					
E-17	Meetings with the project team were organized to review the current status of the project, way forward, and challenges to progress including how to solve them.					
E-18	Meetings with political leaders were held to address community concerns					
E-19	Communication with stakeholders was achieved through emails, telephone and public meetings.					
E-20	Our project sociologists and environmentalists engaged the community continuously and explained how the project will affect or benefit them.					

6 (a) How does participation in project execution phase contribute to successful completion of urban road transport infrastructure projects………………………………………………………………………………..

6 (b) In your opinion which stakeholders can contribute substantially to project completion in the execution phase?
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6 (c) Kindly state your opinion on how stakeholders can effectively be involved in project execution phase to contribute to the successful completion of urban road projects,
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PART 6: PARTICIPATION IN PROJECT CLOSURE

This section contains statements on participation in project closure: please indicate the level of your agreement in the statements below by ticking the appropriate scale 1-5 among the following: Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4) Strongly Agree (5).

This is the project closure phase which marks the end of the project.						
	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	Inspection and acceptance					
C-01	Stakeholders participated in the final inspection meeting to check the quality of the completed works.					
-02	The community was invited to participate in project inspection					
C-03	Community was invited to give comments on any uncompleted works					

C-04	Timely and appropriate inspections were collaboratively carried out to address quality problems					
C-05	Site construction managers brought on board project inspectors to identify detectable defects before they are covered up					
	Taking over of project documents					
C-06	Project team was involved in the preparation, review and submission of as-built drawings and the project completion reports to the client.					
C-07	The stakeholders witnessed the client (government) taking over the project documents for use in the operation and maintenance phase after completion of the project.					
C-08	Client created an action plan which identified the best stakeholder who can assess and provide the best expert testimony of the project.					
C-09	Stakeholders confirmed that all project requirements were satisfactorily completed by the contractor, and all promises were kept.					
C-10	Stakeholders reviewed client notes to ensure that any requests have been attended to and that the site is truly ready to be handed over.					
	Project commissioning					
C-11	Stakeholders were invited to ceremonies to mark the completion of all the project execution activities after certification that the project work was completed to the specified quality standards.					
C-12	The community and other stakeholders witnessed the inauguration of the project by the political leaders.					
C-13	Project team prepared large volumes and complex commissioning data, to guarantee adequate traceability of information.					
C-14	Checking and testing all functions of the completed road was done according to the design parameters.					
C-15	The construction material borrow pits were reinstated to the satisfaction of the land owners and environmental authority					
	Lessons learned					
C-16	Stakeholders participated in the discussion and recording of lessons learned during the implementation of the project.					
C-17	Recording of lessons learned is useful in getting information from the stakeholders as to whether the project was delivered to the community as initially designed					
C-18	Effectiveness of risk identification and response strategies was collaboratively carried out					

C-19	Stating lessons learned is useful in getting information from the community and other stakeholders as to whether the project met their goals and objectives					
C-20	Stakeholders presented a summary of project strengths and weaknesses					

7 (a) How can the community participate in the project closure to improve on success of urban road projects?

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7 (b) Which of the stakeholders are very critical in participation in the project closure phase? ………………………………………………………………………………………

7 (c) Do you think stakeholder participation assists to achieve a quality project during the final stage of the project? If so how?

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PART 7: RISK MANAGEMENT PRACTICES

This section contains statements on risk management practices. Please indicate the level of your agreement in the statements below by ticking the appropriate scale 1-5 among the following: Strongly Disagree (1), Disagree (2), neutral (3), Agree (4) Strongly Agree (5).

Risk management practices refer to the process used by stakeholders to identify, analyze, mitigate, monitoring and controlling risk during the project life cycle management. Road project risks include; technical and contractual (poor design, variations); economic, financial and political (delayed payments, foreign exchange fluctuation, inflation); management (contractor's performance, poor quality work, utility relocation) including external and site condition risks (adverse weather conditions, unforeseen ground conditions) and others.

	Statement	Strongly Disagree	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
	Risk Identification					
R-01	Stakeholders identified land acquisition and relocation of utility service lines as risks					
R-02	Fluctuation in the cost of fuel and construction materials was identified as a risk					
R-03	Prolonged heavy rains was identified as a risk					

R-04	Design changes arising from unforeseen underground geological condition were identified as a risk					
R-05	Delayed payments is a common risk in road construction projects					
	Risk Assessment					
R-06	All stakeholders involved in the assessment of the risks and uncertainties during the design phase of the projects					
R-07	The probability and impact of the risks was assessed by key stakeholders					
R-08	Delay in payments is a risk to the completion of the project.					
R-09	There were adequate road designs to curb the risk of delayed completion of the project					
R-10	Fluctuation in the cost of materials is a risk to the project					
	Risk Mitigation					
R-11	Avoidance of land acquisition helped in reducing the risk of delay in completion of the project.					
R-12	Sub-contracting the works, increasing human resources and construction equipment reduced the risk of delay in the project.					
R-13	I Regular meetings held with stakeholders helped manage risks					
R-14	Purchase of construction materials at the beginning of construction reduces the risk of fluctuation in prices and foreign exchange					
R-15	Addition of 10% of the construction cost estimates as a contingency to cover risks associated with unforeseen risks helped in road projects completion					
	Risk Monitoring and Controlling					
R-16	Monitoring and controlling of the road project's schedule and cost was observed					
R-17	A risk matrix was used throughout the project life cycle					
R-18	A material-laboratory on site was effectively used to monitor and control risks associated with poor quality of materials and workmanship.					
R-19	Monthly progress meetings assisted in monitoring and controlling risks associated with community complaints and slow progress of works.					
R-20	Dispute resolution board assisted in controlling construction risks associated with the project's costs through expeditious evaluation of contractors claims					

3 (a) In your opinion does the practice of adding 10% of the construction cost estimate as contingencies to cover risks associated with unforeseen risks in road projects cause unnecessary costs to the project? Yes ( ) No ( ) If yes please explain.

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3 (b) What are the most common risks that you have experienced in the implementation of most road infrastructure projects?

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3 (c) What methods were used to respond to the risks in the projects that you were involved in?

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3 (d) Was there any specific risk management staff to handle risk management?

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3 (e) In your opinion, what measures would you consider vital in improving project risk management practices for enhancement of success of urban road projects?

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3 (f) Kindly indicate your opinion on how stakeholders can contribute to risk management in road infrastructure projects

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THANK YOU FOR YOUR COOPERATION

Appendix VI (A): Interview Guide for Key Informants

Interview Guide for Key Informants KURA Departmental Directors and Deputy Directors

The interview that I will conduct is designed to collect information for academic purposes only and the accuracy of the information you give will be crucial to the success of this research. The findings will contribute towards stakeholder participation in project lifecycle management, risk management practices and Completion of urban road transport infrastructure projects in Kenya. You are kindly requested to assist as much as you can with the interview which is expected to take approximately fifteen minutes. Thank you very much.

PART A: Demographic data

1. Record gender: Female/M
2. What is your professional qualification?
3. How much experience do you have in the road construction sector?

PART B: Information on specific issues related to the variables

4. In your opinion what are the unique challenges that the authority faces in the implementation of urban roads
5. How do you identify the road projects to be implemented? Do you consult the beneficiaries in the identification of those projects?
6. Which model/strategy of stakeholder participation do you normally utilize to engage stakeholders? Or do you use different models for each type of stakeholders? Choose from the following model. (Top down stakeholder participation, Contractual participation, collaborative or Consultative participation models). How can the models be facilitated for an improved stakeholder participation in the four phases of the project life cycle?
7. Are the stakeholders always useful to the success of the road projects or have you ever encountered stakeholders with a negative interest to the project?
8. In the projects you have been involved in how would you rate the level of participation of stakeholders in the following phases of the project life cycle management? Answer in percentages of expected number of stakeholders. initiation, construction, design, project closure.
9. In your opinion should the National Land Commission get involved from the project initiation to the project closure phase of the project in order to avoid risk of project delay?

10. On the same note, what about utility service providers.
11. Which phases of the project life cycle should land owners and PAPS be involved?
10. Do you involve the community in project selection and needs assessment? If so to what extent?

11. Who is involved in setting of project goals and definition of objectives?

12.To what level are stakeholders involved in feasibility studies?

13, Do you carry out project risk identification in KURA at the initiation phase of the project? If so, do you have a risk register for each project?

14. Do you prepare the budget plans for the whole project based on the project duration? If so why are there delays in payment for work done by contractors?

15. Should service providers (electricity, water, sewerage, data cables and telephone line providers) be invited to participate in the initiation and planning phases of the project so that they can help in risk mitigation?

16, In your opinion how do stakeholders assist in controlling and managing risks in urban road projects.

17. In order to solve the risks posed by informal settlement why can't you secure all the road reserves for KURA well in advance of project commencement.
18. Out of the three project scheduling techniques (Gantt charts, PERT and CPM), which is the commonly used technique?
19. Is there any comment you would like to share?

THANK YOU VERY MUCH

Appendix VI (B): Interview Guide for Utility Service Providers KPLC

The interview that I will conduct is designed to collect information for academic purposes only and the accuracy of the information you give will be crucial to the success of this research. The findings will contribute towards stakeholder participation in project lifecycle management, risk management practices and Completion of urban road transport infrastructure projects in Kenya. You are kindly requested to assist as much as you can with the interview which is expected to take approximately twenty-five minutes. Thank you very much.

PART A: Demographic data

1. Record gender: Female/Male
2. What is your professional qualification?
3. How much experience do you have in your profession?

PART B: Information on specific issues related to the variables

4. At which stage of the project are you requested to commence the process of land acquisition/removal and relocation of service lines for construction of urban roads infrastructure projects?
5. How does land acquisition/relocation of service lines influenced the completion of urban road transport infrastructure projects? If so how does it influence?
6. What challenges do you face in the land acquisition/ relocation of service lines to facilitate road construction projects in Kenya?
7. In your opinion when should the process of land acquisition/service lines relocation be commenced?
8. In your opinion should the process of land acquisition/ service line relocation be considered as a major risk to project completion?
9. How can this potential risk be mitigated?
10. Is there any comment that you would like to share?

THANK YOU VERY MUCH

Appendix VI (C): Interview Guide for Utility Service Providers: Water Companies and Boards

The interview that I will conduct is designed to collect information for academic purposes only and the accuracy of the information you give will be crucial to the success of this research. The findings will contribute towards stakeholder participation in project lifecycle management, risk management practices and Completion of urban road transport infrastructure projects in Kenya. You are kindly requested to assist as much as you can with the interview which is expected to take approximately twenty-five minutes. Thank you very much.

PART A: Demographic data

1. Record gender: Female/Male
2. What is your professional qualification?
3. How much experience do you have in your profession?

PART B: Information on specific issues related to the variables

4. At which stage of the project are you requested to commence the process of removal and relocation of water and sewerage service line for construction of urban roads infrastructure projects?
5. How does relocation of water and sewerage service line influenced the completion of urban road transport infrastructure projects? If so how does it influence?
6. What challenges do you face in the relocation of the service line to facilitate road construction projects in Kenya?
7. In your opinion when should the process of service lines relocation be commenced?
8. In your opinion should the process of service line relocation be considered as a major risk to project completion?
9. How can this potential risk be mitigated?
10. Is there any comment that you would like to share?

THANK YOU VERY MUCH

Appendix VI (D): Interview Guide for Land Agency; National Land Commission

The interview that I will conduct is designed to collect information for academic purposes only and the accuracy of the information you give will be crucial to the success of this research. The findings will contribute towards stakeholder participation in project lifecycle management, risk management practices and Completion of urban road transport infrastructure projects in Kenya. You are kindly requested to assist as much as you can with the interview which is expected to take approximately twenty-five minutes. Thank you very much.

PART A: Demographic data

1. Record gender: Female/Male
2. What is your professional qualification?
3. How much experience do you have in your profession?

PART B: Information on specific issues related to the variables

4. At which stage of the project are you requested to commence the process of land acquisition for construction of urban roads infrastructure projects?
5. How does land acquisition influenced the completion of urban road transport infrastructure projects? If so how does it influence?
6. What challenges do you face in the land acquisition to facilitate road construction projects in Kenya?
7. In your opinion when should the process of land acquisition be commenced?
8. In your opinion should the process of land acquisition be considered as a major risk to project completion?
9. How can this potential risk be mitigated?
10. Is there any comment that you would like to share?

THANK YOU VERY MUCH

Appendix VI (E): Interview Guide for Project Affected Persons PAPS (land owners, and informal land settlers)/Representatives of Resident Associations

The interview that I will conduct is designed to collect information for academic purposes only and the accuracy of the information you give will be crucial to the success of this research. The findings will contribute towards stakeholder participation in project lifecycle management, risk management practices and Completion of urban road transport infrastructure projects in Kenya. You are kindly requested to assist as much as you can with the interview which is expected to take approximately twenty-five minutes. Thank you very much.

PART A: Demographic data

1. Record gender: Female/Male
2. What is your level of education?
3. How long have you been living on this land?

PART B: Information on specific issues related to the variables

4. At which stage of the project were you notified of the commencement of the project?
5. When were you notified to move out of the land to give way to the construction of the road?
6. Were you compensated on time?
7. How do you rate the land acquisition process in this project?
8. Do you think the land acquisition process had an influence on the completion of this project?
9. How will you benefit from this project?
10. What challenges did you face in the process of land acquisition/ relocation of service lines to facilitate road construction?
11. In your opinion when should the process of land acquisition/service lines relocation be commenced and be completed?
12. Is there any comment that you would like to share?

THANK YOU VERY MUCH

Appendix VI (F): Interview Guide for Management of Public Service Vehicles (SACCOS)

The interview that I will conduct is designed to collect information for academic purposes only and the accuracy of the information you give will be crucial to the success of this research. The findings will contribute towards stakeholder participation in project lifecycle management, risk management practices and Completion of urban road transport infrastructure projects in Kenya. You are kindly requested to assist as much as you can with the interview which is expected to take approximately twenty-five minutes. Thank you very much.

PART A: Demographic data

01). Record gender: Female/Male

02). What is your level of education?

03). How many vehicles does the Sacco manage?

PART B: Information on specific issues related to the variables

04). Since the opening of this new road or completed sections of the road to traffic, how has the fares been affected?

05). Has the vehicle operating costs been affected, and if so how?

06). How much time has been saved since the improvement of construction of this road?

07) . Were you involved in determining the location of the bus stops?

08) . In your opinion has the pedestrian/vehicle conflicts been reduced due to provision of foot paths and foot bridges?

09) . How is the condition of the road surface in terms of smoothness or passenger comfort?

10) . Did you attend the stakeholder forums called by the road authorities at the planning stage of the project? If so were your concerns or interest addressed.

THANK YOU VERY MUCH

Appendix VII: List of On-Going Urban Road Projects in Kenya

No	Length (Km)	Project Description	Contractor	Contract Sum(Kshs.)	Funding Model	Construction Period	Start date	Expected Completion date	Remarks	Progress Status
NAIROBI COUNTY ROADS										
1	5.2	Upgrading of Eastlands Roads Nairobi	Tosha Holdings	347,142,134.06	GOK = 100%	12 months	Mar-16	Mar-17	Substantially complete	97.0%
2	17.2	Construction of Missing Link Roads and Non-Motorised Transport (NMT) FacilitiesNairob	Reynolds Construction Company	4,578,162,618.04	GOK = 32.85% EU=67.15%	42 months	May-14	Aug-18	On-going	69.9%
3	13	Nairobi Outering Road Improvement Project Nairobi	Sinohydro Construction Company	7,395,183,298.13	GOK = 10.2% AfDB= 89.8%	46 months	Sep-14	Jul-18	On-going	94.0%
4	5	Upgrading of Upper Hill Roads, Phase I Nairobi	Mattan Construction Ltd	2,002,892,599.00	GOK = 100%	44 months	May-12	Jan-16	Substantially complete	98.3%
5	2.5	Dualling of Ngong Road Phase I (KNLS Nairobi-Dagoretti Corner) Nairobi	World Kaihatsu Kogyo Co. Ltd	Yen1,454,900,000	JICA = 100% GRANT	22 months	Feb-16	Dec-17	Substantially complete (under Defects Liability Period)	100.0%
6	5	Construction of Waiyaki Way - Redhill Link Road Nairobi	China Wu Yi Ltd	3,012,205,102.71	GOK = 100%	30 months	Mar-16	Sep-18	On-going	76.6%
7	4.2	Construction of Ngong Road - Kibera - Kungu Karumba - Langata Road (Missing Link No. 12) , Nairobi	H-Young Limited	2,097,520,695.00	GOK = 100%	24 months	Mar-16	Nov-18	On-going	75.0%
8	2	Construction of Access to Embakasi (Infinity) Industrial Park Nairobi	Kiu Construction Company	382,478,143.50	GOK = 100%	18 months	Jun-16	Jan-18	Substantially complete (under Defects Liability Period)	97.0%

9	2	Construction of Access to Embakasi (Infinity) Industrial Park (Phase II) Nairobi	El Adi Co. Ltd.	142,992,028.10	RMLF = 100%	18 months	May-18	Oct-19	Commencing	
1 0	3. 4	Dualling of Ngong Road Phase II (KNLS Nairobi-Dagoretti Corner) NairobI	World Kaihatsu Kogyo Co., Led	Yen 2,400,000,000	JICA = 100% GRANT	14.5 months	Mar-18	Jul-19	On-going	4.0%
11	10	Rehabilitation and Upgrading of Eastlands Roads (Phase II) Nairobi	Wak Construction Co. Ltd.,	1,111,111,222.32	GOK = 100%	24 months	May-17	May-19	On-going	32.6%
12	1. 8	Rehabilitation of Mathare Roads Nairobi	Tinfra Engineering Ltd.	95,688,170.90	RMLF = 100%	12 months	Mar-17	Mar-18	Substantially complete (under Defects Liability Period)	90.0%
13	4. 2	Rehabilitation and Upgrading of Industrial Area Roads Phase I Nairobi	El Adi Co. Ltd.	153,053,258.82	GOK = 100%	6 months	Feb-17	Dec-17	Substantially complete (under Defects Liability Period)	95.0%
14	1	Construction of Access Road to Ruai Police Station Nairobi	Wak Construction Co. Ltd.,	132,888,629.37	GOK = 100%	12 months	Dec-16	Dec-17	Substantially complete (under Defects Liability Period)	96.0%
15	11	Construction of Upper Hill - Mbagathi Link Road, Nairobi	Interways Works Limited	1,249,921,540.63	GOK = 100%	18 months	Dec-16	Jun-18	On-going	38.5%
16	6. 5	Rehabilitation and Upgrading of Upper Hill Roads Phase II Nairobi	Tosha Holdings	2,258,531,258.11	GOK = 100%	24 months	Dec-16	Dec-18	On-going	48.2%
17	2	Construction of a Flyover across the Northern Bypass and Approaches at Kahawa West Nairobi	Frontier Engineering Limited	403,440,924.00	GOK = 100%	18 months	Jun-16	Apr-18	On-going	80.0%
18	3	Upgrading of Eastleigh roads Phase II Nairobi	H-Young Limited	677,078,139.00	GOK = 100%	24 months	Mar-16	Mar-18	Substantially complete (under Defects Liability Period)	94.3%

19	2	Rehabilitation and upgrading of Eastleigh Estate Access Roads Nairobi	Baraki International Ltd.	552,976,811.10	GOK = 100%	18 months	Apr-17	Oct-18	On-going	61.3%
20	7	Upgrading to bitumen standards of Lenana - Muchugia – Dagoretti Market Link Road	Jomwak Enterprises Ltd.	513,177,612.75	GOK = 100%	17 months	Feb-17	Jul-18	On-going	86.0%
21	9.8	Dualling of Ngong Road (Dagoretti Corner - Karen Roundabout Section) Nairobi	China Qingjian International Group (K) Ltd.	1,987,981,992.59	GOK = 100%	24 months	Jul-17	Jul-19	On-going	23.4%
22	10	Construction of Kangundo Road - Greater Eastern Bypass Link Road Nairobi	China Aerospace Construction Group (Kenya) Corporation Ltd.	1,160,691,029.40	GOK = 100%	12 months	May-18	May-19	On-going	1.0%
MERU COUNTY ROADS										
23	23	Construction of Meru Bypass Roads Meru	H-Young Limited	2,391,755,277.10	GOK = 20% World bank =80%	44 months	Feb-15	Oct-18	On-going	54.5%
NYERI COUNTY ROADS										
24	3.3	Upgrading of Kamuyu - Kinunga Road Phase II, Nyeri	Territorial Works Ltd	237,785,753.75	GOK = 100%	15 months	Mar-16	Jun-17	Substantially complete (under Defects Liability)	95.0%
MACHAKOS COUNTY ROADS										
25	3.5	Upgrading of Syokimau - Katani Phase II Machakos	Sivad Construction Co Ltd	425,053,087.00	GOK = 100%	18 months	Jun-16	Mar-18	Substantially complete (under Defects Liability Period)	95.5%
26	6	Upgrading to Bitumen Standards of Mlolongo - Kware - Katani Link Road (Phase I) Machakos	Ogle Construction Ltd.	1,629,487,068.99	GOK = 100%	24 months	Dec-16	Dec-18	On-going	33.7%
UASIN GISHU COUNTY ROADS										

27	8.5	Upgrading of Old Nairobi Road and Bishop Muge Roads in Uasin Gishu County Uasin Gishu	Dittman Construction Company	684,976,833.20	GOK = 100%	18 months	Jun-17	Oct-18	On-going	46.7%
28	10	Construction of Annex Loop Roads and Upper Elgon View Loop Roads Uasin Gishu	Dittman Construction Company	426,132,768.60	GOK = 100%	18 months	Jun-16	Mar-18	Substantially complete (under Defects Liability Period)	97.0%
KERICHO COUNTY ROADS										
29	5	Construction of Kericho Bypass (Phase I) Kericho	Terad Investments Ltd.	445,786,294.80	GOK = 100%	18 months	Aug-17	Feb-19	On-going	20.2%
LAIKIPIA COUNTY ROADS										
30	8	Construction of Nyahururu Bypass Laikipia	Hanamal Construction Ltd.	562,127,004.00	GOK = 100%	24 months	Aug-17	Aug-19	On-going	19.8%
KISII COUNTY ROADS										
31	5.2	Construction of Kisii Bypass (Phase I) Kisii	Signon Corporation Ltd.	448,808,373.60	GOK = 100%	18 months	Sep-17	Mar-19	On-going	18.4%
KIAMBU COUTY ROADS										
32	2	Upgrading to Bitumen Standards of Githurai – Kimbo Road (Phase II) Kiambu	Dickways Construction Ltd	423,184,731.00	GOK = 100%	18 months	Mar-16	Sep-17	Substantially complete (under Defects Liability Period)	91.0%
33	N/A	Construction of Kenyatta University Footbridge over Railway Line Kiambu	China Wu Yi Ltd.	281,162,084.70	GOK = 100%	11 months	Jun-17	Jul-18	Substantially complete (under Defects Liability Period)	94.7%
34	6.1	Construction of Kahawa Sukari Estate Access Roads Kiambu	Benisa Limited	359,890,290.00	GOK = 100%	18 months	May-18	Oct-19	On-going	1.0%
35	10	Construction of Thika Bypass Kiambu/Murang'a	Tosha Holdings	1,867,953,057.60	GOK = 100%	24 months	May-18	May-20	Commencing	
	218.4	Total		0,439,219,831.87						

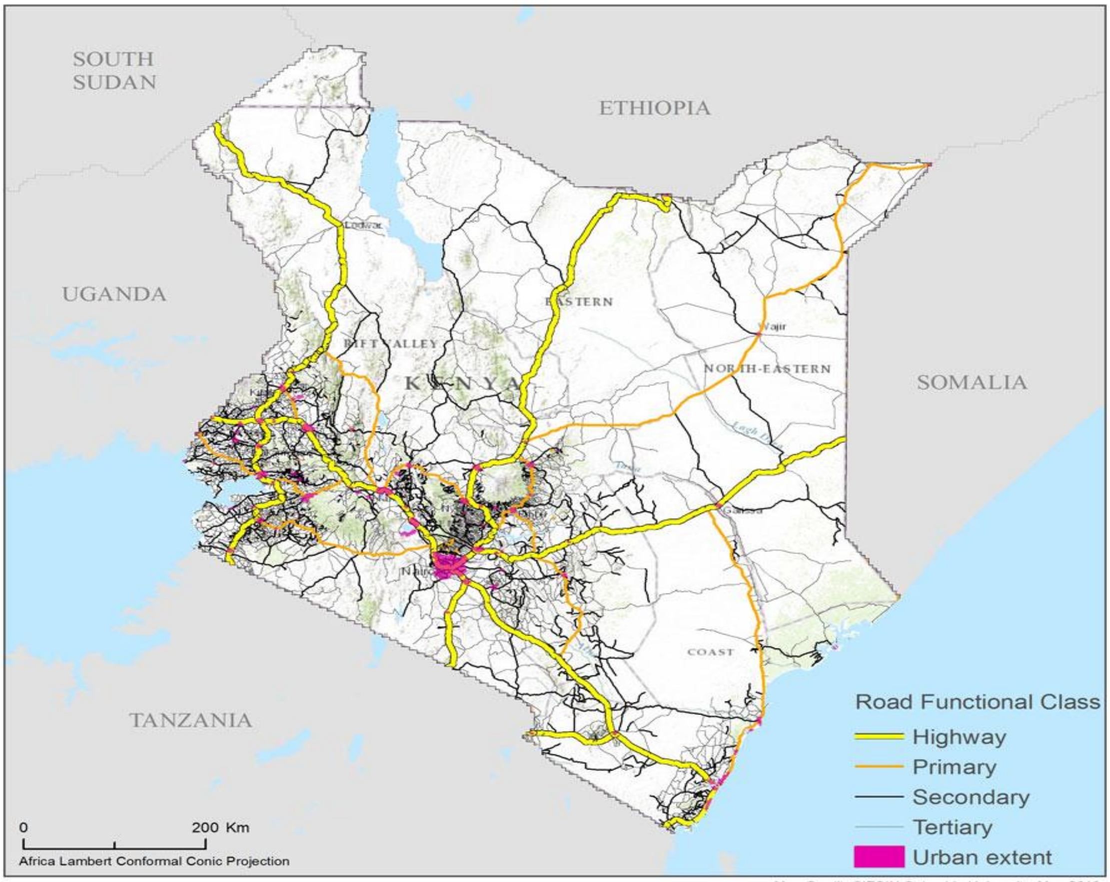
Source; (KURA, 2019)

Appendix VIII: Target Population Distribution among the Counties

Category of target population	**Counties with On On-Going Urban Road Projects in Kenya**									
	Nairobi	**Meru**	**Nyeri**	**Machakos**	**Uasin gishu**	**Kericho**	**Laikipia**	**Kisii**	**Kiambu**	**Total**
KURA project implementation team members										**375**
Kura Planners										**23**
Road contractors	451	31	46	56	33	22	31	23	88	**781**
Consultants	49	2	2	8	6	3	2	4	9	**85**
Representatives of PAPS	91	12	22	12	13	6	8	13	36	**213**
Complimentary service providers	48	5	4	9	12	3	8	5	22	**116**
Total	**639**	**50**	**74**	**85**	**64**	**34**	**49**	**45**	**155**	**1593**

Appendix IX: Map of Urban Roads in Kenya

Global Roads Open Access Data Set, Version 1 (gROADSv1): Kenya



Map Credit: CIESIN Columbia University, May 2013.

The Global Roads Open Access Data Set, Version 1 (gROADSv1) was developed under the auspices of the CODATA Global Roads Data Development Task Group. The data set combines the best available roads data by country into a global roads coverage, using the UN Spatial Data Infrastructure Transport (UNSDI-T) version 2 as a common data model. Because the data are compiled from multiple sources, the dates for road network representations range from the 1980s to 2010, depending on the country, and spatial accuracy varies. National borders are provided for reference purposes only, and CIESIN and its sponsors do not take a position regarding the representation of boundaries.

Center for International Earth Science Information Network
EARTH INSTITUTE | COLUMBIA UNIVERSITY

Data Source: Center for International Earth Science Information Network (CIESIN)/Columbia University, and Information Technology Outreach Services (ITOS)/University of Georgia. 2013. Global Roads Open Access Data Set, Version 1 (gROADSv1). Palisades, NY: NASA Socioeconomic Data and Applications Center (SEDAC). http://sedac.ciesin.columbia.edu/data/set/groads-global-roads-open-access-v1.
Basemap from World Topographic Map (Esri). http://www.arcgis.com/home/item.html?id=f2498e3d0ff642bfb4b155828351ef0e (accessed May 2013).

Appendix X: Details of roads where respondents were involved in management

S/N	NAME OF ROAD	NAME OF COUNTY
1	Eastleigh estate access roads	Nairobi
2	upgrading to bitumen standards of Lenana-Muchugia-Dagoretti market link road,	Nairobi
3	Lower hill road,	Nairobi
4	Thika super highway, Northern bypass, Matumbato road	Nairobi/Kiambu
5	Regati road	Nairobi
6	Chyulu road	Nairobi
7	Umoja 3 roads	Nairobi
8	Masaba road	Nairobi
9	Upper hill road,	Nairobi
10	Ngong road- Dagoretti corner-karen round about	Nairobi
11	Eastlands roads	Nairobi
12	Mara road,	Nairobi
13	Pavement works at JKIA	Nairobi
14	Waiyaki way- Redhill road	Nairobi
15	Rehabilitation of mathare road,	Nairobi
16	Dualin of Ngong road phase 1	Nairobi
17	Upgrading of Lenana Muchugia, Ngong road,	Nairobi
18	Access roads to Mombasa-Nairobi SGR stations (MNSGR project),	Nairobi
19	Access roads to ICD,	Nairobi
20	Kahawa-Sukari estate access roads	Nairobi
21	Kimbo road	Nairobi
22	Construction of access to Embakasi industrial park Ph.2	Nairobi
23	Matumbato Road – Ragati Road-	Nairobi
24	Western bypass- Chyula Road- Umoja 3 Roads – Masaba road and Lower hill,	Nairobi
25	Ngong road – Kibera- Langata road (ML12) Link	Nairobi
26	Githurai –Outering road,	Nairobi
27	Kenyatta hsp- Mbagathi link road	Nairobi
28	upgrading of lower plain road in Karen	Nairobi
29	rehabilitation of Loitaong road and upgrade of road A industrial area	Nairobi
30	Outering road structure,	Nairobi
31	Kahawa west overpair and access roads,	Nairobi
32	Nairobi outering road Improvement project,	Nairobi
33	KWS- Bomas dualling project,	Nairobi
34	Ngong- Langata road (MIZ LINK ROAD) Nairobi	Nairobi
35	Construction of Syokimau roads and Design and construction of Githurai Kimbo road.	Nairobi
36	, Construction of access road to Ruai police station,	Nairobi
37	Taveta Road	Nairobi
38	Rehabilitation of access road to East Africa School of Aviation,	Nairobi
39	Nairobi inland container depot (ICD) Roads (Road B and L),	Nairobi
40	Interval roads in United Nations Compound – Nairobi	Nairobi
41	Kisumu bypass	Kisumu
42	Upgrading of facilities of Kisumu International Airport Phase 1 and II 2008-2014	Kisumu
43	Mau Summit-Kericho- Kisumu highway,	Kisumu/Nakuru/Kericho
44	Kisumu bypass,	Kisumu

45	Eldoret Webuye road,	Uasin Gishu/Bungoma
46	Eldoret access and link roads	Uasin Gishu
47	Kapsoya roads in eldoret	Uasin Gishu
48	Eldoret-Kapsabet Road	Uasin Gishu
49	Eldoret and Lodwar town roads	Uasin Gishu
50	Eldoret- Kapsabet Road	Uasin Gishu
51	Pavement works at Moi International Airport, Mombasa	Mombasa
52	Design on Access road Pandlel to Mombasa road- 11 km,	Mombasa
53	Jomuu Kuu- Jijoni – Rabai road	Mombasa
54	KISIP, NAKURU- Roads and drainage,	Nakuru
55	Njoro-Mau Narok (C57),	Nakuru
56	Mai Mahiu Naivasha Lanet project 2005-2008	Nakuru
57	Nakuru CBD roads Nakuru, ,	Nakuru
58	Periodic maintenance of Jogoo road	Nakuru
59	Upgrading of Kibwezi- Mutomo-Kitui Road	Kitui
60	Mwingi-Ukasi Road	Kitui
61	Design of Muthaiga-Kiambu-Ndumberi Road dualling;	Kiambu
62	Dualling of gatitu road – Thika	Nakuru
63	Kiambu-Ndumberi-Limuru Raod;	Nakuru
64	Kiambu-Old Kiambu Road	Nakuru
65	Thika – Mangu Road,	Nakuru
66	Upgrading of Kamuyu – Kimunga Road	Nakuru
67	ThikaKabati-Marira Road,	Nakuru
68	Kirigiti-Riuki-Ngewe roads	Nakuru
67	Feasibility study of Embu and Chuka town roads	Meru
68	Construction to bitumen standards of chukka town roads phase I	Meru
69	Meru by pass	Meru
70	Chiakanga – Meru road- Meru	Meru
71	Gitembene- Marima-Nkubu- Mitunguu-Chogoria road	Meru
72	Mt. Kenya infrastructure phase 1- Meru,	Meru
73	Repair and resealing of Nyeri –Nyahururu road (B8),	Nyeri
74	Gakanja – Kamakwa road – Nyeri	Nyeri
75	Kangundo road greater eastern bypass link road	Machakos
76	Syokimau-Katani phase 2	Machakos
77	Kahuti Gatuya – Gacharage Construction of Kericho Bypass Ph - 1,	Kericho
78	Nyasari- Kericho road,	Kericho
79	Rehabilitation and construction of, , Construction of Chepteritbaraton – Kimondi (37) Road,	Kericho
80	Londiani – Muhoroni Road	Kericho/Kisumu
81	Stage improvement of Posta (Naibor) Kisima- Market (A4 Road),	Laikipia
82	Rumuruti –Marara (C77) Road	Laikipia
83	Feasibility study, preliminary and detailed Engineering Design Environmental and Social Impact Study of Kajiado-MashionsIsara (D524) Road,	Kajiado

84	Emali- Oloitokitok Road,	Kajiado
	Design review of Illasit-Taveta-Project	Kajiado
85	Wajir-Mandera Road	Wajir/Mandera
85	Wajir-Buna – Moyale Road	Wajir/ Marsabit
86	Rehabilitation of Magumu- njabini (C68) Road	Nyandarua
87	Turkana town road.	Turkana
88	Garissa CBD roads	Garissa
89	Construction of Kisii Bypass phase I,	Kisii
90	Construction of Kiogoro Masongo road Kisii,	Kisii
91	Ena-Ishiara-Chakariga road	Embu
92	Loop Road	
93	Gacharage-Kangari Road	Muranga

Appendix XI: Reliability Analysis Test

Completion of Urban Roads Transport Infrastructure Projects

Reliability Analysis

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.899	.920	20

The above results show that completion of urban roads transport infrastructure projects was reliable as its Cronbach's Alpha (0.899) was greater than 0.7.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
The project was completed on time	49.2381	104.090	.058	.916
Land acquisition process affected project completion	49.4286	76.557	.891	.883
There were many variation orders by the client during execution phase	50.8571	102.729	.668	.895
The feasibility study of the project took longer than expected	50.7143	88.714	.824	.884
Relocation of existing service lines (power, water, sewer, data, telephone) was delayed	48.7143	83.414	.918	.879
The contractors payments were delayed thereby attracting interest payments	49.1429	98.729	.866	.890
Variations in the scope of works caused increase in the project cost	49.1905	98.762	.854	.890
Project managers monitored project activities to prevent cost overruns	50.5714	90.257	.853	.883

There was fluctuation in the cost of fuel, materials and labour	51.4762	104.662	.320	.899
There were design omissions which contributed to additional cost	51.5238	107.762	-.025	.903
There were minimum repairs works on the completed sections of road	51.4286	108.557	-.110	.905
Quality tests carried out on completed works were within specifications	48.9048	101.490	.748	.894
The completed road surface is smooth and comfortable to ride on	49.2381	99.090	.821	.891
Completed road is easily maintained.	48.7619	109.090	-.112	.917
The road does not flood during heavy rains	50.3810	97.348	.620	.892
The completed road has helped to substantially reduce travel time	50.1905	94.462	.796	.887
The value of the land in the area has increased	50.1429	95.629	.879	.887
The area has attracted new commercial investments	50.5238	95.562	.880	.887
The matatu fares have reduced substantially	49.8095	91.462	.851	.884
Adequate safety measures for pedestrians were provided	51.3333	106.233	.120	.902

ANOVA with Friedman's Test and Tukey's Test for Non-additivity

			Sum of Squares	df	Mean Square	Friedman's Chi-Square	Sig
Between People			107.714	20	5.386		
Within People	Between Items		368.407[a]	19	19.390	255.398	.000
	Residual	Nonadditivity	8.246[b]	1	8.246	15.713	.000
		Balance	198.897	379	.525		
		Total	207.143	380	.545		
	Total		575.550	399	1.442		
Total			683.264	419	1.631		
Grand Mean = 2.6357							
a. Kendall's coefficient of concordance W = .539.							
b. Tukey's estimate of power to which observations must be raised to achieve additivity = .221.							

Risk Management Practices

Table 1: Reliability Analysis

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.880	.870	20

The above results show that risk management practices was reliable as its Cronbach's Alpha (0.880) was greater than 0.7.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
The client invited stakeholders for a project briefing to identify risks associated with implementation of the project.	51.9524	112.648	-.660	.904
Fluctuation in the cost of fuel and construction materials was identified is a major risk to the final cost of the project	53.0000	83.200	.905	.857
Prolonged heavy rains was identified as a risk that would cause delay to the project	53.7143	83.414	.774	.862
Design changes arising from unforeseen underground geological condition was identified as a risk which may affect the cost of road projects	53.3333	77.533	.868	.856
Delayed payments is a common experience in road construction projects	53.2857	87.014	.883	.861
Assessment of the risks and uncertainties was carried out by stakeholders during the planning phase of the projects	52.3333	98.433	.081	.893
The probability and impact of the risks identified was assessed by key stakeholders and helped in controlling the project cost, time and quality	52.5714	82.257	.866	.858
The identified risks were ranked depending on their significance to the project (low, medium to high impact risks)	52.9048	77.990	.917	.854

Project risks are evaluated and decision on effective control measures made	52.0000	96.200	.735	.873
Project risk assessment review and updates are made if necessary	51.3333	101.133	.074	.883
Current risk mitigation strategies included provision of insurance covers, performance guarantees, retention monies, defect notification period, contingency sums, sums to take care of fluctuations of cost of materials, wages and foreign currencies	54.5714	100.757	.139	.882
Risks were allocated to stakeholders according to their ability to respond to them during the project planning and execution phases of the project	54.5714	98.257	.429	.877
In order to manage risks regular meetings are held.	54.5238	97.662	.468	.876
Contractor purchased construction materials at the beginning of construction to mitigate against risk of fluctuation in prices and foreign exchange	53.2857	87.014	.883	.861
The practice of adding 10% contingencies and 7.5% of construction cost to cover risks increases construction cost substantially	51.6190	86.848	.785	.863
The project implementation was supervised daily by the client/consultant.	52.0000	103.600	-.195	.886
An effective risk matrix was developed, reviewed and updated throughout the project life cycle.	51.9048	83.390	.651	.868

A materials laboratory on site was effectively used to monitor and control risks associated with poor quality of materials and work.	53.5714	103.657	-.139	.890
Monthly progress meetings assisted in monitoring and controlling risks associated with community complaints, slow progress of works.	53.9524	97.348	.662	.875
Dispute resolution board assisted in controlling construction cost by expeditious evaluation of contractors claims	53.9524	97.348	.662	.875

ANOVA with Friedman's Test and Tukey's Test for Non-additivity

			Sum of Squares	df	Mean Square	Friedman's Chi-Square	Sig
Between People			102.162	20	5.108		
Within People	Between Items		415.752[a]	19	21.882	255.444	.000
	Residual	Nonadditivity	.031[b]	1	.031	.050	.023
		Balance	233.617	379	.616		
		Total	233.648	380	.615		
	Total		649.400	399	1.628		
Total			751.562	419	1.794		
Grand Mean = 2.7905							
a. Kendall's coefficient of concordance W = .553.							
b. Tukey's estimate of power to which observations must be raised to achieve additivity = .951.							

Stakeholder Participation in Project Initiation

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.759	.809	10

The above results show that stakeholder participation in project initiation was reliable since its Cronbach's Alpha (0.891) was greater than 0.7.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
The client identified the stakeholders during project initiation phase	59.5238	57.262	.040	.772
Government institutions, utility service providers, resident associations and Project Affected Persons were identified as stakeholders, apart from the client, consultants and contractors	61.6190	58.148	-.002	.772
The county government is stakeholder to the project	59.4762	62.362	-.283	.793
Stakeholders interest, power and influence was analysed to assist in establishing how to manage them	60.4286	52.557	.826	.730
The client considered the community as vital to success of the project.	61.7619	45.990	.807	.705
Stakeholders were consulted in setting of the project goals and objectives during project initiation phase	59.6190	54.348	.192	.762

Stakeholder were involved in setting project goals and objectives	60.3810	46.448	.671	.715
The views of the community along the project roads were taken into consideration in setting of goals and objectives	61.2857	58.814	-.050	.775
Majority of the stakeholders appreciated the project because their interests were taken on board	59.4286	53.157	.364	.746
A realistic timeframe for completing the project goals was set	60.3810	51.848	.682	.730
Traffic surveys was carried out to determine the capacity of the road	61.2857	61.914	-.250	.793
The community had an input in establishing the scope of the project based on available funds.	61.6190	53.148	.790	.733
Stakeholders were involved in the consultative meetings for environmental and social impact assessment studies.	59.5714	65.257	-.816	.793
Economic and Financial viability of the project was carried out by the client/consultant based on preliminary designs	62.4286	52.557	.826	.730
Utility service providers provided information on the location of service lines	61.4762	49.162	.685	.721
A needs assessment survey was carried out through interviews	61.3810	48.348	.813	.713
The community identified the road project as their first priority to improve their welfare.	59.7619	57.690	-.029	.789
The project was selected by the government because the existing road was in poor condition	61.7619	50.490	.828	.721

Needs assessment surveys are important in ensuring ownership of the project by the community.	60.5238	52.562	.834	.730
The community did not know about the road project until they saw the construction equipment being brought to site by the contractor.	61.3810	45.448	.810	.703

ANOVA with Friedman's Test and Tukey's Test for Non-additivity

			Sum of Squares	df	Mean Square	Friedman's Chi-Square	Sig
Between People			58.948	20	2.947		
Within People	Between Items		361.550[a]	19	19.029	228.384	.000
	Residual	Nonadditivity	8.287[b]	1	8.287	11.996	.001
		Balance	261.813	379	.691		
		Total	270.100	380	.711		
	Total		631.650	399	1.583		
Total			690.598	419	1.648		
Grand Mean = 3.1976							
a. Kendall's coefficient of concordance W = .524.							
b. Tukey's estimate of power to which observations must be raised to achieve additivity = 2.292.							

Stakeholder Participation in Project Planning

Reliability Analysis

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.831	.882	20

The above results show that stakeholder participation in project planning was reliable as its Cronbach's Alpha (0.882) was greater than 0.7.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Stakeholders are consulted during the budgeting process	60.6667	89.033	.109	.836
The client and land commission evaluates the cost of land acquisition and plans the related budget to reduce the associated risks	62.6667	75.733	.796	.802
The client and the relevant service providers evaluates the cost and plans a budget for the removal and relocation of service lines to reduce risks.	61.2857	86.614	.670	.822
Stakeholders work together with experts on cost estimates and budgeting	61.5714	80.157	.696	.811
The client plans a budget for environmental and social impacts.	60.8571	82.529	.367	.826
Stakeholders give their opinions on type and quantity of resources required for the project	62.4762	76.262	.858	.801
The client does not involve other stakeholders in sourcing of funding for the project	60.8571	86.429	.220	.833
The minimum quantity of construction machinery, tools and equipment required to deliver the project is estimated by the client/consultant	62.6667	84.033	.807	.816

Procurement of service providers including contractors is carried out well in advance of construction	61.7143	83.114	.547	.818
Number and qualification of key personnel is established, and compiled into a project team during planning	62.3333	88.033	.116	.839
Stakeholders participate in establishing project deliverables	61.0952	97.590	-.296	.864
Key stakeholders have the necessary qualification and experience in developing a Work Breakdown Structure for the project	62.4286	83.457	.657	.816
Activities for land acquisition are planned at this stage.	61.0000	98.300	-.338	.863
Schedule of activities for relocation of service lines was prepared	62.3810	78.948	.808	.807
Programme of work was approved and signed off by stakeholders	62.1429	76.529	.840	.802
Affected residents are involved in clearly defining the scope of work	62.1905	79.062	.815	.807
The project scope is dependent on the amount of funds allocated to the project by the client and stakeholders have no input in decision making	61.3333	89.333	.042	.845
The community request for adequate pedestrian walkways, zebra crossings and footbridges are not taken into consideration by the client	62.6667	84.033	.807	.816

The scope of relocation of service lines is determined by relevant government agency based on information provided by stakeholders	61.2857	78.914	.490	.819
The scope of land acquisition was determined by the client during the planning phase.	63.1905	73.462	.774	.801

ANOVA with Friedman's Test and Tukey's Test for Non-additivity

			Sum of Squares	df	Mean Square	Friedman's Chi-Square	Sig
Between People			91.790	20	4.590		
Within People	Between Items		228.979[a]	19	12.052	174.372	.000
	Residual	Nonadditivity	16.938[b]	1	16.938	23.090	.000
		Balance	278.033	379	.734		
		Total	294.971	380	.776		
	Total		523.950	399	1.313		
Total			615.740	419	1.470		
Grand Mean = 3.2548							
a. Kendall's coefficient of concordance W = .372.							
b. Tukey's estimate of power to which observations must be raised to achieve additivity = 2.894.							

Stakeholder Participation in Project Execution

Reliability Analysis

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.773	.713	20

The above results show that stakeholder participation in project execution was reliable as its Cronbach's Alpha (0.773) was greater than 0.7.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
All key project stakeholders attended the kick –off meeting	67.0000	48.800	-.086	.701
The project goals were discussed and understood by stakeholders before embarking on any project work	68.9048	33.790	.864	.561
The scope of the project was well articulated by the client during the meeting	66.3333	46.333	.213	.666
The role and responsibility of each stakeholder was spelt out during the kick –off meeting	68.7619	33.390	.852	.560
The contractor was asked to prepare the programme of works and cash flow projections for project execution.	67.3333	39.933	.345	.651
Stakeholders participate in the review and implementation of project activities through site inspections and regular meetings	67.4286	41.757	.532	.632
Stakeholders are consulted whenever there may be a need to change the original planned activities.	67.3810	49.448	-.167	.685
Government agencies remove and relocate service lines and acquire land far ahead of the planned construction activities.	69.0000	42.900	.374	.648
Stakeholders participate in mobilizing and managing the project team.	67.0476	47.648	.024	.683

Stakeholders follow up construction activities to ensure their interests are taken care of.	66.7619	47.890	.050	.677
The project management team controlled of cost the project	68.3810	36.748	.823	.585
The project management team requests and receives feedback from the other stakeholders regarding the quality of work	67.1905	44.262	.332	.654
Government agencies responsible for land acquisition and relocation of service lines monitor their activities and are efficient.	68.2381	39.090	.887	.599
Community concerns are considered and incorporated in the agenda for monthly progress meetings.	68.5714	40.257	.760	.613
Quality of work was not properly monitored and controlled by the consultants.	66.7143	53.114	-.549	.714
Information on the progress of work is frequently distributed to the project stakeholders through relevant communication methods.	66.7619	47.890	.050	.677
Meetings with the project team are organized to review the current status of the project, way forward, and challenges to progress including how to solve them.	68.1905	41.662	.537	.631
Meetings with political leaders are held to address community concerns	66.9524	49.848	-.169	.695
Communication with stakeholders was achieved through emails, telephone and public meetings.	67.8571	51.229	-.318	.703
Sociologists and environmentalists engage the community and explain how the project will affect or benefit them.	67.8095	57.462	-.549	.762

ANOVA with Friedman's Test and Tukey's Test for Non-additivity

			Sum of Squares	df	Mean Square	Friedman's Chi-Square	Sig
Between People			48.662	20	2.433		
Within People	Between Items		264.750[a]	19	13.934	186.355	.000
	Residual	Nonadditivity	36.505[b]	1	36.505	52.093	.000
		Balance	265.595	379	.701		
		Total	302.100	380	.795		
	Total		566.850	399	1.421		
Total			615.512	419	1.469		
Grand Mean = 3.5595							
a. Kendall's coefficient of concordance W = .430.							
b. Tukey's estimate of power to which observations must be raised to achieve additivity = 4.883.							

Stakeholder Participation in Project Closure

Reliability Analysis

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.971	.969	20

The above results show that stakeholder participation in project closure was reliable as its Cronbach's Alpha (0.971) was greater than 0.7.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Stakeholders participated in the final inspection meeting to check the quality of the completed works.	71.5238	127.762	.915	.968
The community is invited to participate in project inspection	71.6667	127.033	.946	.968
The community is invited to give their comments on any uncompleted works	72.3810	134.348	.712	.971
Stakeholders are involved in timely and appropriate inspections to allow an informed opportunity to address quality problems	73.8095	129.062	.926	.968
Project managers bring on board inspection to identify detectable defects before they are covered up	72.9048	119.290	.910	.970
Consultants are involved in the preparation, review and submission of as-built drawings and the project completion reports to the client.	71.6190	140.348	.572	.972
The client stores the project documents for use in the operation and maintenance phase after completion of the project.	72.1905	132.662	.834	.970
Client create an action plan which identifies the best stakeholder who can assess and provide the best expert testimony of the project.	72.6190	129.648	.923	.968
During this step, the consultant or resident engineer will confirm that all project requirements have been satisfied, all work has been completed and all promises have been kept.	72.2381	127.290	.912	.968

Review client notes to ensure that any requests have been attended to and that the site is truly ready to be handed over.	71.5238	127.762	.915	.968
Stakeholders are invited to ceremonies to mark the completion of all the project construction activities after certification that the project work was completed to the specified quality standards.	71.6667	127.033	.946	.968
The commissioning involves the stakeholders witnessing the client giving the contractor a certificate of accepting the completed.	71.3810	133.748	.858	.970
The commissioning involves large volume and complexity of commissioning data, together with the need to guarantee adequate information traceability	71.1429	136.229	.843	.970
Stakeholders are involved in checking and testing all functions according to their design parameters in conditions as close as possible to the design conditions	72.4762	122.262	.915	.969
Client and the consultants ensure that the contractor reinstates and makes good the construction material borrow pits to the satisfaction of the land owners and environmental authority.	72.2381	133.690	.862	.969
Stakeholders participate in the recording of lessons learned and discussion sessions.	71.5238	132.462	.883	.969
Recording of lessons learned is useful in getting information from the stakeholders as to whether the project was delivered to the community	71.6190	131.548	.895	.969

Stakeholders are involved in the session to assess whether risk identification and response strategies were effective	72.2381	133.690	.862	.969
Stating lessons learned is useful in getting information from the stakeholders as to whether the project met their goals and objectives	71.9048	142.790	.286	.974
Stakeholders present an overview of the lessons learned process and a summary of project strengths	71.7143	149.914	-.388	.978

ANOVA with Friedman's Test and Tukey's Test for Non-additivity

			Sum of Squares	df	Mean Square	Friedman's Chi-Square	Sig
Between People			145.962	20	7.298		
Within People	Between Items		156.419[a]	19	8.233	264.903	.000
	Residual	Nonadditivity	4.326[b]	1	4.326	21.905	.000
		Balance	74.855	379	.198		
		Total	79.181	380	.208		
	Total		235.600	399	.590		
Total			381.562	419	.911		
Grand Mean = 3.7905							
a. Kendall's coefficient of concordance W = .410.							
b. Tukey's estimate of power to which observations must be raised to achieve additivity = 2.069.							