INFLUENCE OF PROJECT PLANNING ON IMPLEMENTATION OF URBAN ROAD PROJECTS IN KENYA: A CASE OF KENYA URBAN ROADS AUTHORITY, NAIROBI COUNTY

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A Research Project Report Submitted in Partial Fulfillment of the Requirement for the Award of Master of Arts in Project Planning and Management of the University of Nairobi

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DECLARATION

This research project report is my original work and has not been presented for academic qualification in this or any other university.

Signature  Date 15th September, 2021.

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This research project report has been submitted for examination with my approval as the university supervisor.

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DEDICATION

I dedicate this project to the Almighty Father, for His guidance during this research period. Secondly, I bestow this project to my family, my pater- Dr. Charles Lwanga, my mother- Beatrice Wangari and brother- Victor Lwanga for their continued support as I undertook this journey. Finally, I bestow this toil to all friends and ménage who offered their support all through this research period.

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TABLE OF CONTENTS

DECLARATION.....**Error! Bookmark not defined.**

DEDICATION..... ii

ACKNOWLEDGEMENT..... iii

LIST OF TABLES..... viii

LIST OF FIGURES..... x

LIST OF ABBREVIATIONS AND ACRONYMS..... xi

ABSTRACT..... xii

CHAPTER ONE..... 1

INTRODUCTION..... 1

1.1 Background of the Study..... 1
1.2 Statement of the Problem..... 7
1.3 Purpose of the Study..... 9
1.4 Objectives of the Study..... 9
1.5 Research Questions..... 9
1.6 Research Hypothesis..... 9
1.7 Significance of the Study..... 10
1.8 Delimitation of the Study..... 11
1.9 Limitation of the Study..... 11
1.10 Assumptions of the Study..... 11
1.11 Definitions of Significant Terms Used in the Study..... 11
1.12 Organization of the study..... 12

CHAPTER TWO..... 13

LITERATURE REVIEW..... 13

2.1 Introduction..... 13
2.2 Implementation of Urban Road Projects..... 13

2.3 Project Resource Planning and Implementation of Urban Road Projects 15
2.4 Planning for Project Procurement Procedures and Implementation of Urban Roads Projects 19
2.5 Planning for Project Stakeholder Engagement and Implementation of Urban Roads Projects 22
2.6 Planning for Project Risk Management and Implementation of Urban Roads Projects 25
2.7 Theoretical Framework 28
2.7.1 Theory of Triple Constraint 28
2.7.2 Theory of Project Management 31
2.8 Conceptual Framework 33
2.9 Summary of Literature Review 34
2.10 Knowledge Gaps 35
CHAPTER THREE 42
RESEARCH METHODOLOGY 42
3.1 Introduction 42
3.2 Research Design 42
3.3 Target Population 42
3.4 Sample Size and Sampling Procedure 43
3.4.1 Sample Size 43
3.4.2 Sampling Procedure 44
3.5 Research Instruments 44
3.5.1 Piloting of Research Instruments 45
3.5.2 Validity of Research Instruments 45
3.5.3 Reliability of Research Instruments 46
3.6 Data Collection Procedure 46
3.7 Data Analysis Technique 47
3.8 Ethical Considerations 49
3.9 Operationalization of Variables 49
CHAPTER FOUR 52
DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION 52
4.1 Introduction 52
4.2 Questionnaire Return Rate 52

4.3 Demographic Characteristics of Respondents 52
4.4 Implementation of Urban Road Projects 54
4.5 Project Resource Planning and Implementation of Urban Road Projects 56
4.5.1 Correlation Analysis between Project Resource Planning and Implementation of Urban Road Projects 59
4.5.2 Regression Analysis of Project Resource Planning and Implementation of Urban Road Projects 60
4.6 Planning for Project Procurement Procedures and implementation of urban road projects 62
4.6.1 Correlation between Planning for Project Procurement Procedures and Implementation of Urban Road Projects 64
4.6.2 Regression Analysis of Planning for Project Procurement Procedures and Implementation of Urban Road Projects 65
4.7 Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects 67
4.7.1 Correlation Analysis between Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects 68
4.7.2 Regression Analysis for Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects 69
4.8 Planning for Project Risk Management and Implementation of Urban Road Projects 71
4.8.1 Correlation Analysis between Planning for Project Risk Management and Implementation of Urban Road Projects 73
4.8.2 Regression Analysis for Planning for Project Risk Management and Implementation of Urban Road Projects 74
4.9 Summary of the Results of Hypotheses 76
CHAPTER FIVE 78
SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS 78
5.1 Introduction 78
5.2 Summary of the Findings 78
5.2.1 Project Resource Planning and Implementation of Urban Road Projects 78
5.2.2 Planning for Project Procurement Procedures and Implementation of Urban Road Projects 78
5.2.3 Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects 79
5.2.4 Planning for Project Risk Management and Implementation of Urban Road Projects 79

5.3 Conclusion of the Study 80
5.4 Recommendations 81
5.5 Suggestions for Further Research 81
REFERENCES 82
APPENDICES 89
Appendix I: Letter of Transmittal of Data 89
Appendix II: Questionnaire for Kenya Urban Roads Authority Employees- Nairobi County . 90
Appendix III: Letter of Research Authorization 94
Appendix IV: NACOSTI Permit 95
Appendix V: An Introductory Letter to Kenya Urban Roads Authority 96
Appendix VI: Kenya Urban Roads Authority Research Approval Letter 97
Appendix VII: Kenya Urban Roads Authority Research Authorization Letter 98

LIST OF TABLES

Table 2. 1: Knowledge Gap Matrix 35
Table 3. 1:Target Population……..... 43

Table 3. 2: Sample Size 44
Table 3. 3: Reliability Coefficients of the Variables..... 46
Table 3. 4: Hypothesis Testing 48
Table 3. 5: Operationalization of Variables Matrix 50
Table 4. 1: Questionnaires Return Rate..... 52

Table 4. 2:Demographic Characteristics of the Respondents 53
Table 4. 3: Implementation of Urban Road Projects..... 55
Table 4. 4: Project Resource Planning and Implementation of Urban Road Projects 56
Table 4. 5: Correlation Analysis between Project Resource Planning and Implementation of Urban Road Projects..... 59
Table 4. 6: ANOVA for Project Resource Planning and Implementation of Urban Road Projects 60
Table 4. 7: Model Summary for Project Resource Planning and Implementation of Urban Road Projects 60
Table 4. 8: Coefficients of Project Resource Planning and Implementation of Urban Road Projects..... 61
Table 4. 9: Urban Road Projects Procurement Procedures 62
Table 4. 10: Planning for Procurement Procedures and Implementation of urban Road Projects..... 63
Table 4. 11: Correlation Analysis between Planning for Project Procurement Procedures and Implementation of Urban Road Projects..... 64
Table 4. 12: ANOVA for Planning for Project Procurement Procedures and Implementation of Urban Road Projects 65
Table 4. 13: Model Summary for Planning for Project Procurement Procedures and Implementation of Urban Road Projects 66
Table 4. 14: Coefficients of Planning for Project Procurement Procedures and Implementation of Urban Road Projects 66
Table 4. 15: Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects 67
Table 4. 16: Correlation Analysis between Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects..... 69
Table 4. 17: ANOVA for Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects 70
Table 4. 18: Model Summary for Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects 70
Table 4. 19: Coefficients of Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects 71
Table 4. 20: Planning for Project Risk Management and Implementation of Urban Road Projects..... 72
Table 4. 21: Planning for Project Risk Management-Risk Response Methods 72
Table 4. 22: Planning for Project Risk Management- Risk Occurrence 73
Table 4. 23: Correlation Analysis between Planning for Project Risk Management and Implementation of Urban Road Projects 74

Table 4. 24: ANOVA for Planning for Project Risk Management and Implementation of Urban Road Projects..... 75
Table 4. 25: Model Summary for Planning for Project Risk Management and Implementation of Urban Road Projects 75
Table 4. 26: Coefficients of Planning for Project Risk Management and Implementation of Urban Road Projects..... 75

LIST OF FIGURES

Figure 1: Conceptual Framework 34

LIST OF ABBREVIATIONS AND ACRONYMS

AfDB- The African Development Bank

CPM- Critical Path Method

GDP- Gross Domestic Product

IMF- International Monetary Fund

KNBS- Kenya National Bureau of Statistics

KUIDFC- Karnataka Urban Infrastructure Development and Finance Corporation

KURA- Kenya Urban Roads Authority

MDGs- Millennium Development Goals

OEDC- Organization for Economic Co-operation and Development

PERT- Project Evaluation Review Technique

WBS- Work Breakdown Structure

SDGs- Sustainable Development Goals

ABSTRACT

Over the years rapid urbanization has taken place and with this there has been a need to create sustainable cities with urban infrastructure and social public amenities that support the population surge in the urban areas. Kenya has been no different. Kenya Urban Roads Authority is the government entity mandated to identify the need for urban roads, plan, implement and manage urban roads in Kenya. This study focused on investigating the influence of project planning on implementation of urban road projects: a case of Kenya Urban Roads Authority, Nairobi region. The study was directed by the subsequent objectives; to assess the influence of project resource planning, planning for project procurement procedures, planning for project stakeholder engagement and planning for project risk management on implementation of urban road projects in Kenya. The literature reviewed the theoretical framework focusing on the theory of triple constraints and the theory of project management. The study had a target population of 1,000 Kenya Urban Roads Authority employees. The drawn sample was 90 participants for the study. Piloting of the instrument was done on 9 Nairobi Metropolitan employees, a number derived from a proportion of 10% of the total sample of the study. The study employed a descriptive research design with the data collection instrument selected as a questionnaire having structured questions with the intention of satisfying the research questions and objectives. The collected data was analyzed using the SPSS software for descriptive, inferential statistics and the Pearson correlation analysis. From the analysis, it was evident that project resource planning influenced the implementation of urban road projects having a variability of 12.4%. Secondly, planning for project procurement procedures influenced implementation of urban road projects and it could be explained with a variability of 31.8%. Thirdly, from the findings, it was palpable that 19.1% of the variability in the dependent variable- implementation of urban road projects can be explained by the dependent variable- planning for project stakeholder engagement. Finally, it was evident that only 6.5% of the variability in the dependent variable- implementation of urban road projects can be explained by the dependent variable- planning for project risk management. When the hypotheses were tested, the P value for all the independent variables was less than 0.05 thus leading to rejection of the null hypothesis. The study concluded that all the independent variables influenced the implementation of urban road projects although at different extents. The research further proposed some recommendations like proper resource planning, prioritizing stakeholder engagement and formulation of better risk response frameworks before implementation of urban road projects. The areas for further research should be carried out in urban areas where rapid infrastructural developments are happening.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

There have been massive changes over the years, both on a demographic and industrialization level and with this urbanization has been brought about. Urbanization is a phenomenon associated with the movement of human settlement based in rural areas to urban areas thus changing the physical urban setting. In 2019, it was estimated that around four billion, two hundred million people, that translates to well over half the populace of the world who inhabit in urban areas and it will have inevitably increased to 6 billion people by 2041 (United-Nations, 2019).

With rapid urbanization, comes challenges on how urban areas are planned and managed to bring about sustainability. Since these urban areas offer more opportunities that most people can thrive in, the movement of people to these areas will continue and thus the need for incorporation of the principle of urban sustainability as it becomes an essential guide for the development in these areas. Urban sustainability is the process of organizing an urban area in such a way that there is no over-reliance on the surrounding areas but can sufficiently power or steer itself with its own resources mostly from renewable sources. The main goal is to be able to have the smallest ecological footprint while producing minimal waste or pollution, efficiently using natural resources and minimize its contribution to climate change (Anis, 2018).

Also, it's worth noting that well over 80% of the GDP is generated in cities and if urbanized areas are well managed then urbanization can positively contribute to sustainable growth (World-bank, 2020). But as it is, urbanization has brought about the need for planned urban infrastructure and development that can support the surge in population in the urban spaces. Having an outlook of ensuring urban areas are and remain sustainable, governments become tasked with ensuring they formulate, plan and implement urban development projects guided under urban sustainability principle.

The identification of the right development project, financing and sustainable implementation by governments can greatly contribute to the countries' economic growth. The number of implemented projects was used as indicative measure for economic development and growth when

there was a transition to SDGs from the MDGs (World- bank, 2017). The projects considered to be development include; road and carriageway projects, water and sanitation projects, trading facilities projects among others. The African Development Bank further backed this finding by stating that the performance of any community is directly related to the number of development projects it undertook, how they were implemented and the transfer to relevant agencies for use (AfDB, 2018).

It is imperious to take note that implementation of a project and it being deemed as successful depends on a set of performance criteria (Rugenyi & Bwisa, 2016). It has been argued that despite client satisfaction being a prerequisite for project execution and performance, the feat of a project is controlled within the performance of cost, quality, scope and time. For a project to be successful, project planning on the constraint items is to be considered before, during and after implementation of a project. Construction projects may be affected negatively by failure to understand and interpret these constraints properly as the project deliverables will not be effectively carried out (Omondi, 2017). This goes to show the valued essence of evaluating and managing any project by considering planning of the project.

In the United States of America, urban areas continue to face challenges of congestion and even further it was established that cost associated with delays and the consumption of fuel rose by 78 billion dollars in 2005 alone. This was a huge loss on various economic stimulus entities, individual and at a national level. The strategies brought forward by policy makers was to enlarge the infrastructure by widely investing in urban road. The implementation of road projects had its challenges like on funding and to curb this it was planned that there would congestion charging which brought about the introduction of toll roads within the urban areas (Albalate & Bel, 2009). Additionally, the government facilitates the implementation of urban development projects like urban roads through the county governments mini- budgets that have been accrued through different tax levies on their citizens. Take Texas for instance, the development projects implemented in this way include; construction of feeder roads, interconnecting railway lines, water project, waste disposal and management project, public recreational facilities among others. In 2018, as per the allocated budget, projects like the Crossroads development and installation of water and sewer were completed and the government proceeded to conduct other urban development projects like road and bridges projects, park projects, water projects and waste water

projects. All this enabled by the proper planning and budgeting for the development projects set to better the urban areas (Borg & Prigmore, 2019).

In Asia, the economic impact of government initiated and implemented projects was realized to contribute approximately 10% of the national GDP and this has made them central in the economic performance. China has been recognized worldwide for successfully initiating and implementing its urban development project and in 2018 it was credited for having a 90% success rate in implementing major development project for year 2017/2018. Further, a report by OEDC showed that China performs better on development projects compared to any other country in Asia and the reasons for this include; having well trained professionals to monitor and manage these projects, availability of sufficient funding, good will from the government and collaboration with the private sector to realizing urban development within the country (OEDC, 2018). This goes to show how China has invested in ensuring that the implementation of their infrastructure development projects is managed in a way that the project constraints are not overlooked but factored in by the well-trained professionals thus the high success rates of the projected the government has initiated, funded and implemented.

The case of India, Karnataka Urban Infrastructure project, it was expected to take about five and a half years, set to be complete by 31st December 2001. The project was implemented and completed two and half years later in 30th June 2004. The delay was attributed to the slow execution of works by the contractors, lack of proper forecasting, inexpertness, substandard equipment and cashflow problems as a result of KUIDFC elaborate claim procedure that derailed payments to the contractors. The project scope initially encompassed of environmental sanitation that included components like low-cost sanitation works, sewerage, solid waste management and storm water. But the scope increased during implementation to include public toilets, lake improvement and rainwater harvesting. Secondly, road improvement, truck and bus terminal with components including improving city road, constructing diversions and ring roads, expanding intercity connecting roads and construction of vehicles terminal. On implementation, only one bus terminus was completed in Mysore, the truck terminus was removed from the scope, alignment of ring roads was changed after an EIA was conducted and additional roads were done on request by residents (ADB, 2006).

The other scope item was on poverty reduction which entailed improvement of the slum living conditions by providing and upgrading drains, roads, provision of water supply, social facilities, solid waste disposal facilities and street lighting. Most of the components were done but electrification was removed from the scope of works. The fourth element was on industrial sites and services development but there was cancellation in Ramanagaram and Tumkur on the same as land was not acquired. The initial project cost was estimated at $112 million but the final cost on completion was $103 million. The project ended up costing less and the attributable reason was there was surge in the dollar rupee exchange rate, the project contingencies had been overly exaggerated and some of the scope components were withdrawn and cancelled (ADB, 2006).The case study evidently shows the implementation of urban infrastructure development projects is dependent on the project constraints that shape the end result for a project. Taking into consideration time, scope and cost will vitally determine how the project implementation will have performed compared to what it was initially expected to fulfill.

The urbanization rate of Africa has been at a very high pace thus leading to unplanned growth in the urban space settings. Accessibility issues and mobility issues have been considered vital for sustainable urban development but despite these most African cities have accessibility and mobility displaying low level when measured against their populations needs. It is evident that African cities experience challenges associated of poor urban planning, inefficiency in delivery of basic services, poor provision of urban infrastructure, inadequacy in the service of transport, unregulated traffic, uncontrolled congestive growth and pollution, inadequacy in institutional, financial and technical capacities (Stucki, 2015).

In the case of Ghana, implementation of road construction projects be it in the capacity of highways, urban roads or any kind road development network is a function of the government. In other times the Ghanaian government enters into public private partnerships to fulfill the function of delivery of infrastructural projects like roads within the country. It is reported majority of construction projects involving roads in Ghana are ridden with challenges in delays in timely delivery. When a stakeholder analysis was conducted the problem of delay was established to stem from the client, who is the government that delays to deliver timely payments to the road contractors. This was pointed out to be the main reason why most road projects in Ghana end up being abandoned by contractors or experience prolonged stalling. To correct this challenge, it proposed adoption of good financial management practice, which is an element in project planning would mitigate the

issues of payment delays for the mentioned projects. Also, it was proposed that stakeholder engagement needs to be adopted to facilitate better flow of information among the project stakeholders so as to ensure proper implementation of the road construction projects in Ghana (Project reserve, 2021).

Egypt on the other hand has a devolved system of governance whereby these systems or units are in charge of ensuring the implementation of urban development projects; roads and railway projects within their urban areas and cities. This system can be traced to have been the case since the early time of Pharaoh's administrative rule where implementation of development was done through this units. At the moment despite the wars that split the country, it has over thirty-eight operational devolved units. The states are tasked with identifying, planning, funding and implementing development project and incases that there is insufficient funding, they request assistance from the national government. There have been cases reported of stalled project in Cairo and this has been attributed to project planning constraints like insufficient financial resources, poor planning, strain on the natural resources, poor state of technology, political dictatorship among others with the example of Egyptian National Railways (ENR) that had stalled (World-Bank, 2018).

In South Africa, the government noted the road construction is an economic driver and as result the government has been encouraging both the public and private entities to partner in implementing the shove-ready infrastructure development projects which are expected to propel the unlocking of the economy. In the recent passing, around twelve road construction projects bids with a value estimated at 1.2 billion rand had to be cancelled and a call to retender was done due to non-compliant bid submission receipt. The president pointed out the need for the National treasury and other regulatory bodies to streamline procurement procedures to ensure efficiency and fast tracking of the adjudicating process and the tender awarding. It was identified that due to the large number of tenders submitted per road construction project and the need to run compliance and verification on the tenders, numerous delays were being experienced in finalizing the procurement process (Construction index, 2020). With this, procurement procedures in South Africa have been brought under scrutiny as its part of the element causing substantial delays in the realization of the road construction projects and it being an aspect of project planning, there is dire need in streaming the process so that it can positively contribute to the timely delivery of projects within the country. Also, it was realized that urban infrastructure projects like roads in South Africa

have been reported to be ridden by negative factors like insufficient funding, political and international interferences, corruption, poor planning and management (Mbachu & Nkando, 2017).

In East Africa, countries like Uganda depend on public roads development to propel their economy. Despite this, the country has been having underperforming and unsatisfactory delivery of road construction projects. The late delivery of projects and overruns in the project budgets has been established to contribute to the non-compliance of the projects. Also, irregularities in the procurement procedures account for the annual losses of about 258.60 million dollars in the country. The implementation failures of these projects continue to have adverse economic effects on the country and even a retarded growth in the sector (Mwelu, Davis, Yongjian, Watundu, & Jefferies, 2019). From the irregularities in procurement procedures to time and cost overruns, project planning need becomes evident as lack of it has been seen to have negative effects on delivery of road projects in Uganda.

In Kenya, the planning, implementation and control process related to construction of roads has been delegated by the central government to the ministry of transport, infrastructure, housing and urban development. The Kenya Roads Act of 2007 establishes the various road authorities that have been tasked to handle different types of roads from formulation of projects until its closure, maintenance and rehabilitation. The authorities delegated the mandate of realizing road objectives include Kenya National Highway Authority (KeNHA) to oversee highways in Kenya, Kenya Rural Roads Authority (KeRRA) to oversee rural roads and Kenya Urban Roads Authority (KURA) to oversee urban roads (Kenya Roads Act, 2007).

In this case, KURA is the state agency tasked with development, rehabilitation and maintenance or urban roads within the boundaries of cities and municipalities. Since its inception in 2010, KURA has been prioritizing projects that will help ease congestion in urban areas, improve safety on roads and contribute to the growth of the economy. Its core function include; road construction, upgrading of roads, road rehabilitation and maintenance, controlling reserves for urban roads, control roadside developments access, implementing urban road strategies, ensuring that users abide by the guidelines on control of axle loading and ensuring quality standard on roads are achieved. The entity has previously received good ratings on its road implementation strategies (Bulle, 2015).

Road construction in Kenya has been known to be one of the main drivers of the economy and as part of connectivity projects, it has been identified as an enabler type of project. By enabler project, it means that it provides a means of people to move from place to place either for purposes of socializing, worship, working or trading which in one way or another boosts the overall economy. Urban road projects in Kenya act as a stimulus for economic growth and are taken keenly as they fall as part of the flagship projects under Vision 2030. The benefits of having urban roads brings the need to have them successfully implemented and for this to be achieved, there is need for proper project planning practices to be put in place.

1.2 Statement of the Problem

Infrastructure is one of the chief bases for determining national competitiveness as well national development and growth. On the other hand, project implementation is considered as a critical factor of which performance of a project can be judged. One of the vision 2030 goals is to progress effectiveness and efficiency of the process in infrastructural development at planning, contracting and execution levels. The strategy put forward to achieve this goal was strengthening institutional frameworks and fast-tracking closure of these projects. The accomplishment of projects within their specified time period would be achieved by increasing efficiency, quality and rate of implementation of the projects. Despite all these strategies many governments funded development projects are being reported with low performance rates and many of them end up being abandoned (Rugenyi & Bwisa, 2016).

According to the Kenya National Bureau of Statistics report, construction is pointed out to one of the chief economic drivers and this goes out to show the importance that should be placed on project planning to achieve successful implementation of construction projects. The performance of construction projects is measured against the parameters of cost, time and quality of delivery of the projects. The survey goes on to point out that in 2018, 52% of the projects experienced budget overruns and 33% of the said projects had time overruns (Economic Survey , 2018).

When it comes to urban road development there are challenges associated with road implementation of the said projects. According to a study conducted by urban planners' association on urban road projects, it was established that most of the challenges associated with implementation of urban roads are planning related and included inadequate budgetary allocation, land acquisition, encroachment by traders, illegal allocation of road truncation and utility lying on

road construction spaces (Adak, 2019). These challenges affect the development of roads either by increasing the actual planned budgets for the development increasing the time need to execute the projects by creating a need to relocate the traders or services and land acquisition to have bigger spaces for the roads. Also, the need for proper stakeholder engagement and communication arises most especially when dealing with issues or relocation of traders as there is need for proper mobilization of the people and resources to cap the problem. Further on, a study that had been conducted by the Kenya Urban Road Authority that pointed many urban road projects were experiencing the problem of non-completion. Failure experienced by these projects were as a product of time inefficiency factors, absence of adequate funding for the projects, the problem associated with proper working equipment, non-availability of materials, client obstacles and lack of project managers competency (Wambui, Ombui, & Kagiri, 2015).

There have been studies conducted to examine issues related to implementation of urban roads project like the factors affecting completion of road construction projects in Nairobi city county; a case of Kenya Urban Roads Authority that showed that the construction of road projects is significantly affected by competency of project managers, project funding and project technology (Wambui, Ombui, & Kagiri, 2015). This study only explores one aspect of planning which is associated with project resources and fails to acknowledge the influence that other planning element has on execution of the construction of urban road projects. Similarly on critical success factors on the implementation of road projects in Wajir county, it was evident that contractor's competency, mobilization of resources, participation by the beneficiaries, political goodwill and monitoring and evaluation had a significant positive influence on implementation of road projects (Muktar & Kimutai, 2019).

Despite these studies being conducted, there is still a lack of sufficient information in relation to project planning and its influence on implementation of urban road projects. With that and the few challenges mentioned on implementing and delivery these projects, all these sets to show that there is without reason a problem in executing urban road projects in Kenya and thus a need to study and analyze the same. This research study seeks to fulfill that need by having an in-depth look at how urban road projects are being implemented in the country and due to the reported cases of projects stalling, being abandoned, having performance issues influence of project planning on implementation of these projects will also be studied.

1.3 Purpose of the Study

The purpose of the study was to establish the influence of project planning on implementation of urban roads projects in Kenya: A case of Kenya Urban Road Authority, Nairobi county.

1.4 Objectives of the Study

The specific objectives to this research study included;

i. To assess how project resource planning influences implementation of urban roads projects in Nairobi County.
ii. To determine how planning for project procurement procedures influences implementation of urban roads projects in Nairobi County.
iii. To establish how planning for stakeholder engagement influences implementation of urban roads projects in Nairobi County.
iv. To examine how planning for project risk management influences implementation of urban roads projects in Nairobi County.

1.5 Research Questions

The research questions to this study were;

i. How does project resource planning influence the implementation of urban roads projects in Nairobi County?
ii. How does planning for project procurement procedures influence the implementation of urban roads projects in Nairobi County?
iii. How does planning for project stakeholder engagement influence the implementation of urban roads projects in Nairobi County?
iv. How does planning for project risk management influence the implementation of urban roads projects in Nairobi County?

1.6 Research Hypothesis

The study intended to test the following hypotheses;

1. **H_0**: Project resource planning has no significant influence on the implementation of urban roads projects in Nairobi County.

H_1: Project resource planning has a significant influence on the implementation of urban roads projects in Nairobi County.

2. **H_0**: Planning for project procurement procedures has no significant influence on the implementation of urban roads projects in Nairobi County.

   H_1: Planning for project procurement procedures has a significant influence on the implementation of urban roads projects in Nairobi County.

3. **H_0**: Planning for project stakeholder engagement has no significant influence on the implementation of urban roads projects in Nairobi County.

   H_1: Planning for project stakeholder engagement has a significant influence on the implementation of urban roads projects in Nairobi County.

4. **H_0**: Planning for project risk management has no significant influence on the implementation of urban roads projects in Nairobi County.

   H_1: Planning for project risk management has a significant influence on the implementation of urban roads projects in Nairobi County.

1.7 Significance of the Study

The findings of this research study will be beneficial to the development of project management framework that ensure the efficiency in implementation of urban road projects. It will also be of great help when formulating project planning strategies that will help in the delivery of urban road projects in Kenya. The findings will benefit not only Kenya Urban Roads Authority but also other state agencies like Nairobi Metropolitan Department, Kenya National Highways Authority and Kenya Rural Roads Authority among others by providing them with insightful information on how planning for project resources, procurement procedures, stakeholder engagement and risk management influences the implementation of road projects. Also, they will be well equipped on project planning principles that will positively contribute to the successful implementation of urban roads projects within the country and so can other government agencies adopt the same where necessary in implementing development projects.

Additionally, this study will offer insight on the effective and efficient execution of rolled out road projects that seek to provide the economic stimulus to residents of Nairobi County who will be using these transport facilities and so will the local government as they will use these projects for revenue generation. The study may also be important to other researcher who may use it to review

their literature, as source of research idea and area for further studies on issues related to implementation of urban development projects. Finally, the findings will contribute to the knowledge of project management by enlightening the grey areas related to project planning and how they influence the implementation of projects.

1.8 Delimitation of the Study

The research was primarily focused on urban road projects that are being implemented by Kenya Urban Roads Authority. The study was delimited to the Kenya Urban Roads Authority headquarters in Nairobi County as are believed to have the vast information concerning the study area. Also, the study was delimited to selected variables that the researcher believed to influence the implementation of urban road projects in Nairobi County.

1.9 Limitation of the Study

The study was limited with unforthcoming responses on issues related to the aforesaid projects as the projects have a large impact on the stakeholders involved and may not have an all-positive reflection on how the projects are being implemented. The study tried to overcome this limitation by ensuring the method of data collection and instrument do not sideline the respondents but ensure to maintain their confidentiality while participating in this study.

1.10 Assumptions of the Study

The initial assumption drawn for the study was that the respondents will participate in providing honest, transparent and truthful information for this study. This would help in having a study with factual information and statistics. The other assumption made was that the expected rate of response from the respondents would be more than 75% of the total sample size for the study. At least three-quarters of the sample size would have participated providing sufficient information that the analysis and conclusion can be made and arrived at respectively.

1.11 Definitions of Significant Terms Used in the Study

Project planning: This refers to the process of how the project objectives and deliverables for urban roads projects are developed and stipulated to rolled out for successful implementation.

Project resource planning: This refers to the processes that bound the optimal use of resources that is time, people and finances and how they influence the execution of urban road projects.

Project stakeholder engagement: This refers to process of identifying, mapping and analysis the urban roads stakeholder so as to define the flow of information throughout the project.

Procurement procedures: This refers to process that deal with the identification of the right service providers or product, evaluation and sourcing of the services or products in the most effective and efficient manner.

Risk management: This refers to the plan that stipulates how uncertainties within the urban road projects will be approached, estimated and managed.

Project implementation: This refers to the execution of a project deliverables as per the agreed contract to achieve the objectives of the projects and deliver outputs and results. It also involves monitoring progress, assessing risks, the quality and change of scope of the works.

Urban roads projects: these are roads within an urban area boundary with set limit speeds of about 80km/hr. and connect the mentioned areas with the entry and exit points of linked roads.

1.12 Organization of the study

The research is structured into five chapters with the first covering the preliminary part of the research and will have the background to the study, the problem statement, the purpose of the study, objectives of the study, research questions and the significance of the study. Then there will be delimitation of the study followed by limitations of the study and assumptions of the study. Lastly, the definition of significant terms used in the study is covered. The second chapter is the literature review which focuses on previous studies previous conducted related to the research topic, the theoretical framework and finally the conceptual framework will be covered. Chapter three is the research methodology which provides the research design to be used, defines the target population and sample size, explains on the research instrument that will be used, how the collected will be analyzed and finally the ethical considerations for this study. The fourth chapter will entirely be based on the data presentation and analysis. This chapter will be introduced and followed by the descriptive statistics. Then, the multi- regression analysis will be done having the correlation matrix, its interpretation and the actual regression analysis. Chapter five which is the final chapter, will provide the summary of the research, conclusions arrived at and the recommendations made on the study as well as areas for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter covers the empirical literature on the study variables; dependent variable-implementation of urban road projects and independent variables-project resource planning, planning for project procurement procedures, planning for stakeholder engagement and planning for project risk management and how they independent variables relate to the dependent variable. Further on, the theoretical framework is reviewed and the conceptual framework developed. Finally, the research gaps are briefly discussed and a summary is provided on the reviewed works.

2.2 Implementation of Urban Road Projects

A project is defined as temporary and unique endeavor that utilizes resources and has a definite start and end time. Projects are undertaken in organizations in realization of their strategic plans and goals and are taken on at all level of an organization. On the other hand, project management involves applying of the prowess and knowledge, tools and systems to the activities of a project so as to achieve the desired requirements of the project (Clayton, 2020).

For projects to be actualized, they go through the project lifecycle which involves initiation, forecasting, implementation, monitoring and control and finally project closure on. Initiation stage encompasses visualization of the project whereby the client approves the scope and the project stakeholders are identified. Planning is one of the most vital phases in the lifecycle as the project is mapped out in terms of deliverables and resources required to achieve them. The plan developed helps in the incorporation and realization of the project constraint which include cost, quality, scope, time, risks and related issues. Implementation stage is the longest phase and makes use of the resources to realize the project activities. Monitoring and controlling stage involve the evaluation of the actual project performance while comparing it with the planned project performance and undertaking corrective measures where necessary so as to achieve the desired project results. Checks on the project constraint are conducted to ensure it is within the prescribed limits. Finally, after the project is executed to completion there is the closure phase, where the project is officially considered to have ended and reports are provided for the stakeholders. Handing over of the project is conducted at this stage. (PMI, 2018).

Project implementation is the third stage of the project lifecycle. It's also known as project execution or delivery. It refers to the carrying out of project tasks in an effort of realizing the project's purpose. It involves monitoring the project progress and quality, evaluating the progress and risks involved, reporting and acting on the changes and variations that come up during the project life (Interact, 2015).

In construction projects, implementation stage is whereby the actual construction of the project is done. The main contractor is handed over the site, mobilizes his resources and provides a works Program for the project, which is used to track how the project is being executed. Once construction works commence, they are evaluated based on the quality and cost of deliverable activities and elements. In case there are scope changes, they are catered for as variations and their cost is expected to be covered using the contingency funds. Sometimes the cost supersedes the budget and cost overruns are experienced, other times the project time elapses before the project is complete and time overruns are experienced. For delays, scope creep, quality non-conformity and over budget on the project not to be experienced, it's important for project constraints to be factored and looked at keenly. The effective implementation of projects is dependent on how planning for resources is conducted, the stakeholder involvement in the project, the procurement procedures carried out for the project and the project risk management among other factors.

Studies have been done with an attention on urban roads projects in Kenya, an example of such study includes the study on factors affecting the completion of road construction projects in Nairobi County a case of Kenya Urban Roads Authority whose research verdicts point out that the completion of road projects is significantly affected by project funds, technology for the project, project managers' competencies and the equipment used for the project. To a large scale this study looked into the resources aspect that has a huge contribution to the delivery of road projects under KURA (Wambui, Ombui, & Kagiri, 2015).

Other studies like project management and performance of rural roads construction projects in Machakos county highlighted the poor performance road projects within the region measured against the parameters of time and cost. Of all the three practices in project management of forecasting, implementation, monitoring and control, it was evident that planning for projects had the highest impact on the performance of projects relating to rural roads being implemented in Machakos county (Mayende, 2020). This goes to show the weight that project planning as an

element of the project lifecycle has on the implementing phase of any road construction project and puts an extra importance on why it should always be carefully done for the successful delivery of the same projects.

Nevertheless, the study by Shabo gives insight on the impact that public participation has on implementation of development projects specifically road projects and he stated that with public participation the implementation of projects will be positively influenced as the visions and contribution by the end users is taken into consideration and incorporated within the scope of the project (Shabo, 2017). Conversely, Luusa mentioned that the influence that monitoring and evaluation and budgetary allocation has on execution of development projects. He further stated that budgetary allocation gives a direction on what scope of works can be covered in regards to the mentioned projects and directs how they will be implemented. Monitoring and evaluation which is conducted in the course of implementing projects assists in assessing and comparing if the project being executed is still in course or has veered off its performance indicators (Luusa, 2019).

From the studies reviewed it is evident that the implementation of road projects is dependent on project planning and management practices at different levels. Be it the aspect of resource planning on a financial, human resource, materials and time aspect or just project planning as a whole. Implementation of projects is evaluated grounded on the three main project constraints of cost, scope and time and these are integrated and part of the elements that need extensive planning on before embarking on the implementation of the said projects. Just like the quote by Benjamin Franklin, 'if you fail to plan, you are planning to fail', it is of great importance for the project teams to place a keen eye on the planning element for the project of failure to do so will have catastrophic effects on the project ranging on having time overruns, cost overruns, quality issues, scope creeps and to an even larger extent end up being abandoned or stall for long periods of time.

2.3 Project Resource Planning and Implementation of Urban Road Projects

For a project to be implemented it needs resources. This ought to be established during the planning phase of the project lifecycle so that they be efficiently managed to steer them for successful implementation of the projects. The known resources for projects include manpower, material, financial and time. Human resource is also known as work resources or manpower and these provide the people who carry out project tasks and ensure smooth running of the projects. They

provide the technical know-how, knowledge and expertise for the projects. The material resources encompass project materials in this case examples of aggregates and asphalt for road construction, tools and equipment like excavators and rollers. All the materials for project accrue costs as they all carry unit costs as consumables. Financial resources provide basis for project costs and budget and involve financier and they include financial funds, project budgets and project grants. Finally, time resources entail the available time provided to carry out a project in its entirety. It includes provision of project plan, project schedule and time invested for the project (Nösel, 2020).

Time is an important factor and most organizations use it to judge the feat of projects basing on whether the project has been implemented and completed within the set deadlines while still retaining the competitive edge of the organization's output of the project. Some organizations tend to apply the pareto principle, which is also known as the 80/20 rule to implement project while utilizing less effort to achieve maximum results. This principle works by applying eighty percent of the effort to accomplish twenty percent of the not so important tasks while allocating twenty percent of the effort to accomplish the most important task that remains and this has been seen to bring in eighty percent of the desired results. This principle helps project managers in distinguishing what is the most critical task of the project and using twenty percent of the effort while for all the other task eighty percent of the effort is applied. This helps to eliminate time wastage while performing the wrong task (Tremel, 2019).

Time being one of the most important factors to consider when implementing any project, it's important to manage it properly. Project time management entails planning, scheduling, monitoring and controlling the time allocated to accomplish activities and the overall project outcome. It involves seven important processes which are defining the project activities which is done using the WBS during scope management then sequencing activities which involves arranging activities in a sequence that the follow each other by using a network diagram. Afterwards the resources required to accomplish the activities are established and the duration to accomplish these activities is estimated. Project time estimation is done using the PERT method especially if not all the factors at play are known. The Project Evaluation Review Technique (PERT), is used in identifying the time taken to complete a task while showing the dependencies between the task and activities in a project. It takes into account the optimistic, pessimistic, most likely and the expected times to carry out and complete an activity and helps in the scheduling and coordination of activities (Wrike, 2020). Time can also be estimated using the scheduling method.

This is whereby the project is broken down to smaller deliverable unit, the activities are established, resources required are determined, the duration required to complete each activity is determined, the constraints likely to be encountered are listed, the milestones are established and the calendar dates are stated. All these information feeds into a project schedule. After the schedule has been developed, then it's important to monitor and control the schedule by following up on the progress of individual tasks and comparing against the plan. This ensures that work is tracked closely and any lags can be identified, reported on corrective action taken.

Time being a crucial factor that's considered when project is being implemented, its influence has been researched on and some of the studies that have highlighted this include factors affecting timely completion of public construction projects in Trans Nzoia County by Murithi. In this study, it was noted that most construction projects experience delays and these causes the need for an extension of time. Just like it's said that time equals money, extension of time on a project has monetary effects to the project as items like insurance of the project will need to be renewed and that's costly. The major reasons noted for time overruns included misappropriation of project funds, lack of public engagement and insufficient funding (Murithi, Makokha, & Otieno, 2017).

Cost which is a product of the financial resource, is a vital factor to any project as it is used to know the value of the project, plan for resources and budget around the execution of the said project. Costing in construction projects is handled by building economists and quantity surveyors as they assist clients estimate the cost it would take to carry out a project to completion and better allocate and manage the finances at hand. Some costs in a project are always direct and known based on the quantified items and a given market rate, while some other items are just an approximation of what is likely to be spent to execute and they are referred to as prime costs and provisional sums of a project. The approximation of such cost needs adequate information so as to factor a reasonable contingency and they are drawn from the given scope of works being handled (Kukreja, 2020). The cost for the project normally translates to the tender sum used in bidding and after the contractor has been selected it translates to the contract sum when an agreement has been arrived at for the execution of works. Any contract sum arrived at is always inclusive of any market fluctuations that may be experienced during the project life. To guarantee that the project cost is safe during the implementation a contingency sum is always set aside to cushion the project in case of unforeseen events.

The cost of a project is managed through the cost management function. Cost management process is integrated right from the development stage to the project closure. The cost function chart is divided into four processes which include cost application, budgeting, control and estimating. Cost estimating deals project cost gathering and prediction over its lifecycle and it has three stages which are; economic evaluation which happens at the initial stage of planning and it determines both the economic and technical feasibility of the project and if sufficient financing can be secured for the project execution. The second stage is the project investment cost which deals future cost prediction having in mind that not all the project parameters have been fully defined. This is where the project budget and definitive project estimates are made (PMI, 2021).

The third stage is the cost forecasting which is concerned with incorporating the uncertainties and future trends cost aspect to the financial aspect of the project. Such uncertainties include inflation in the market. For cost budgeting, project budget is established while the measurement standards for monitoring the investment cost are streamlined on. The manner in which the cost of the project will be monitored throughout the project is determined here including al the accounting systems and functions to be used. The third process which is cost control involves monitoring and analyzing the project cost as the project progressing, reporting and managing it. For cost application, computer applications are used to facilitate cost techniques for the project (PMI, 2021). It is also possible to cost a project based on the WBS that was developed during the scope definition stage. When the tasks are subdivided into smaller work packages, each package's resources and cost can be established and when this is all totaled up then the total project cost will be known.

Several studies have sought to investigate cost constraint and its influence relating to implementation and execution of projects in construction. Such include a study by Kogi that investigated the reasons for cost overruns in projects in construction and noted that the major encompasses project scope, management of contract, resources and policies by the government (Kogi & Were, 2017). Also, cost in projects can be acerbated due to poor cost estimation. Normally, construction cost covers cost of labour, materials, plant and equipment, site overheads and contractor's profits. When poor estimation on these costs is conducted then consequentially there will be poor project cost performance due to poor cost controls that have been put to place. Poor estimation could mean that there are under estimations made which would eventually push the cost up when the actual works have been conducted. These estimations are normally covered under the budget given for a particular project by the cost consultant and generally need to be properly

understood, checked and verified so as to provide accurate information on project budgeting to avoid increased costs later on when the project is being implemented.

Material resources planning is an important process in resource planning and it helps in inventory control, purchase planning, scheduling of work, economic purchasing and data management and documentation as well as resource management. This is done after the project scope has been established and the work breakdown structure has been developed as it's easier to allocate the deliverable task with the most appropriate quantity of resources required to fulfill it. It can be done using software like master production scheduling that also has the purchasing management function and material requirement planning that has the capacity planning function (Planet Together, 2018). Despite this planning function being used largely by the manufacturing sector it can be used also in the construction of roads for ease in acquiring materials and capacity planning for them by the implementing road contractors.

Research on planning for resources in projects for highway construction established that the cost for equipment amounts to 20-30% of the cost of the project inclusive of the maintenance and operational costs. With that the effective and efficient use of equipment becomes necessary so as to save on the project cost thus need for prior planning of the equipment. The same goes for materials planning that becomes very necessary to reduce project wastage and help in cost saving (Kumari & Vikranth, 2012). From the study it's evident that resource planning plays a critical part in the effective execution of urban roads projects by helping to prevent unnecessary time overruns, cost overruns, excess and unnecessary purchase of materials for the projects.

2.4 Planning for Project Procurement Procedures and Implementation of Urban Roads Projects

Procurement is the involves process for materials, product and services acquirement. In the public sector or any public agencies, they have set of public procurement procedures that they subscribe to when they are acquiring services or materials for the sole purpose of their service delivery responsibilities. The process entails selection of vendors, negotiation on payments, valuation strategies, final selection, negotiation on the contracts and final acquirement of the service or product. The major procurement types are; direct, indirect and service procurement. The first one entails sourcing of goods, materials or products from vendors with maintained relationships and is mostly utilized in the manufacturing sector. The second one involves the sourcing of materials,

goods and services for internal use by the organization and is normally on short contract basis. Services procurement entails sourcing contingent manpower and consultancy services for organization (Beroe, 2021).

In Kenya, the public procurement process is defined in the Public Procurement and Assets Disposal Act and Regulations. It stipulates the steps that are involved listing them as requirement identification, planning for procurement, requirements definition, sources determination, vendors selection and assessment, award of the contract, implementation of contract, payments for goods and services and finally disposal. Also, it points out different forms of procurements which include direct procurement, open tendering, restricted tendering, request for quotation and request for proposals. (Kagume & Wamalwa, 2018).

Open tendering is a procurement method that provides the opportunity for any interested party to submit their tender for the supply of goods, materials or services. It follows that an advertisement is placed on the dailies or tendering sites giving a notice on the specific kind of tender being offered, its details and requirements for submission of the said tender. This method is the most preferred as it provides fairness and competitive tender participation. It is criticized on basis that it provides a long, slow and tedious process to attend to it until its closure. Restrictive tendering on the other hand is a procurement method that limits the number of tenderers participating in one specific tender. It is also known as limited bidding or selective tendering. This method provides that an invitation is offered to specific people from a preselected list to submit their tenders. This method is preferred when dealing with complex types of projects or projects and it provides a faster route as compared to open tendering process (Design-Buildings Ltd, 2020).

Request for proposals is a method of procurement whereby there are two envelopes submitted whereby the vendor is tasked with providing the methodology of carrying out works together with a workplan of a specific project or requirement of works. The participants are expected to submit two envelopes one with the technical proposal and the other one with the financial proposal for the project to be undertaken. On evaluation, the technical proposal is offered the first priority over the financial proposal as evaluation is based on the solution being offered not the price attached to the solution. Request for quotation differs from the former in that, it is done for small value endeavors that do not require the preparation of tender documentation and the procurement entity establishes a list of preselected vendors to partake in the process (Lynch, 2021).

Project procurement process plays a critical role in effective project execution as it stipulates the entity that will be used to execute the projects and bring it completion of which its performance will be judged to determine the success of the project implemented. In instances that an unsuitable vendor in this case contractor is selected then the project is expected to experience challenges that could have otherwise been avoided which in turn will make the project costly and may end up being delivered late, with questionable quality and the stakeholders will likely have unsatisfactory remarks for the project. To avoid all these, there is need to secure properly proven procurement procedures that not only allow to select contractors with proven experience and technical know-how to implement urban road projects and without any questionable issues that will eventually cause the project to be deemed unsuccessful in its implementation but awarded the desired success levels on implementation.

The Public Procurement and Assets Disposal Act and Regulations in Kenya was established so as to have effective procurement procedures while providing transparency, fairness, equity and competitiveness in tendering processes and cost effectiveness in the whole procurement process. But despite this, development projects most especially road projects still experience cost overruns, delays and poor quality (Kiiru, 2015). This is further backed by the study on the factors affecting construction of road projects in Nairobi County where it was established that that many if not most road projects in Kenya fail in performance of time and cost among other related indicators (Wambui, Ombui, & Kagiri, 2015) With such still being the paraded case for road projects in Kenya, it goes to show that procurement procedure needs to be streamlined to offer better solutions when it comes to contractor selection for projects so that the performance failure challenges may be avoided all together.

There was a study conducted previously assessing the influence public procurement practices on road construction projects implementation, a case of Kenya Urban Roads Authority in Machakos County. From this study it was revealed a strong correlation between project procurement planning, monitoring and evaluation and choice of procurement procedures and project implementation for the road construction projects in Machakos as it influences it to larger extent. The study noticed that the high cost in these projects were as result of contract variations and recommended the need for the government to establish procurement policies that are tied to client satisfaction on basis of time and cost for delivery of the projects. It also pointed out for transparency and fairness there is need for the ministries and government agencies to embrace e-procurement (Luka, 2016).

Further, the study on the public procurement systems and its influence on building contracts performance during project implementation; a case of Nairobi County it pointed out advertisement for tender on local dailies or website ranked as the most significant predictor on public procurement systems for project success. This goes to show that open tendering and request for proposals are more favorable as the use the mentioned routes to attract bidders for tenders. On issues of transparency, it was of the favored opinion that public announcement of the tender winner promotes the transparency for the procurement process and about 60.2% of the study respondents supported that the criteria for tender evaluation holds a significant attribute for the successful implementation for building and construction development projects. Further on, it was established that the documentation of decisions by the procuring entity officials provides accountability for the performance of projects. Other factors that had significant influence on the building contracts included the adherence to procurement law and contract administration (Kiiru, 2015).

With the studies conducted on the influence that procurement has on implementation of projects there was evidence of its influence but most of the studies failed to look into the different types of procurement, contractor selection criteria and tender evaluation processes and their influences on the effective implementation of urban roads projects. Accordingly, there is need to examine the mentioned indicators of procurement to have the insight and full understanding of its effects on effective implementation of urban roads projects in Kenya.

2.5 Planning for Project Stakeholder Engagement and Implementation of Urban Roads Projects

A stakeholder is a person with vested interests in an organization or project and to a larger extent can an influence in the same. The range of stakeholders can go to include people within the organization, clients, financiers, end users of a service or product, government agencies formulating regulating policies and rules and the project team. From that then, stakeholder engagement can easily be deciphered as the process in which an organization uses to efficiently have flow of information regarding issues of importance for the organization or project. The process involves stakeholder's identification, mapping and prioritization in order to affect the most suitable communication model and efficiently use resources. Stakeholder engagement is of benefit to any organization as it helps the organization to analysis each stakeholder individually, lay out their interest and influences so that they may well explore appropriately (Sedmak, 2021).

Stakeholder engagement is an essential element when planning for a project as it helps in identifying the important stakeholders who will have a bearing on the successful execution of the project. This is a necessary process undertaken by any organization or project to streamline the most effective communication channel that ought to be used while managing every interest of the vital stakeholders and ensuring to balance out their influences for the project. After the stakeholders for the project are identified then the mapping process begins. This process is done through stakeholder analysis whereby the project manager applies techniques that help in the identification and understanding of the expectations and needs of foremost interests within and out of the project environment. With this the project lead gets useful insight and understanding into the dynamic of the people involved and utilizes the information on planning for the project at hand. The analysis also assists in identifying the project risks and viability areas and how to use the stakeholders for a positive gain to either counter or manage the risks and build on the project viability (Schuurman, 2019).

The analysis approach is conducted by developing stakeholders' interest and impact table. This table entails all the listed stakeholders, their interests and their estimated project level impact and this enables the classification of their estimated priority. The first step is further refined by establishing their interest-influence classification whereby their assumptions and risks are established and laid out. The stakeholders' influence and importance are assessed and it aids in determining the extent of power a stakeholder holds if it has any kind of negative impact to the project. This analysis helps in developing the stakeholder participation matrix which is used to give the full insight into the participation influence and importance for each and every stakeholder during the project life cycle; from initiation, planning, implementation, controlling until the closure of the said project. The participation levels of the stakeholders can be divided into inform, consult, partnership and control (Project Management, 2020).

Project stakeholders have been considered largely to be chief in shaping the success of projects. In a case like Australia, it was established that mapped stakeholder management cycle as stakeholder groups in infrastructure related projects can easily influence the death of a project and this would be done either through the removal of advocacy to the project or resources that are essential to the project. It was also pointed out that the power dynamics with the project are most likely defined by the project organization's structure and it was stated that the perception of stakeholder's power influences the changes throughout the lifespan of the project as the vital project stakeholders are

not normally governed by government groups or organization's senior management group (Bourne, 2010).

The successful and effective implementation of a project depends on the validity of the stakeholder's power, importance, assumptions and risks they hold to the project. With proper analysis stakeholder engagement can adequately inform the projects ability to succeed or fail and can also be used to know how better to make use of the stakeholders influences to steer the project to have a success. For effective implementation of urban roads projects, there's is need to accurately identify each project stakeholder, correctly map them and ensuring analysis is correctly conducted to better structure the project communication model and utilize what the stakeholders offer for the successful forecasting and execution of the projects. Also, with this the negative impacts to the project can be identified and correct measure put in place to manage them and so will the potential issues that could easily lead to the disruption of the project during its implementation stage.

A study conducted by Mandala highlighted the significant influence of stakeholder involvement in project management on the performance of road construction projects in Kenya. It was further established that stakeholder engagement in project implementation acts as an enabler for the effective coordination and direct resources for the project that helps to achieve the ultimate project outcomes. She further states that for stakeholders' accountability purposes the project tasks need to be effectively outlined and this permits enhancement of the budgeting process for the project resources. The study further states that road projects that have stakeholder engagement tend to perform generally better as their involvement helps in designing actionable goals for the project and as the stakeholders feel they input is taken into consideration the generally tend to push, participate positively and support the road projects being implemented. This goes on to highlight the vital role that stakeholders play when they are included as part of for the project and their beneficial impact, they bring to the projects being planned, implemented until they are finally handed over to the project users (Mandala, 2018). Although this study showcases the advantage of having stakeholder engagement for road construction projects it fails to highlight and discuss the extent to which stakeholder engagement planning impacts the effectiveness of project implementation on aspects of the communication models employed, frequency of their involvement during the planning, implementation and control stages for the project and rating the satisfaction levels at the closure phase of the project.

The study on influence on stakeholder activities on implementation of rural roads projects in Kenya points out that financiers play a significantly critical role on roads implementation by providing the necessary project budgetary allocations timely and sufficiently to ensure that project delivery stays on track for time, cost and quality. This is further backed by the studies conducted by Okeyo in relation to Sondu-Miriu hydropower projects that established for the continuity of works and avoidance of time delays and cost overruns there is need for the project sponsors to fulfill their responsibilities timely (Okeyo, 2015). On the oversight activities the study established that good work relations and interaction between the contractors, the project team and legislative government projects positively contribute to how fast the implementation of the project will be. On the issue of project beneficiaries, it was established that projects with high acceptability levels tend to be embraced and supported by the end users thus timely delivery which supports the findings by Raza that due to public dismissive action of public projects, they tend to either be delivered having experienced massive time overruns or they generally end up stalling or being abandoned by the implementing entity (Raza, 2016). This simply highlights the repercussions of not having stakeholder engagement in a project more so the end user who are the public for public development initiatives. The study further states that by engaging qualified and registered road contractors in road projects ensures that projects are delivered with satisfactory quality and even goes on ahead to recommend the efficiency in the contractor verification process ensure that project experience minimal technical based challenges as approved and qualified contractors are being used (Ndunda, Paul, & Mbura, 2017).

2.6 Planning for Project Risk Management and Implementation of Urban Roads Projects

Project risk is defined as the uncertainties that may or may not occur in the course of implementing a project and when they occur, they will impact the project. In the cases that it occurs and the impact is positive then that provides an opportunity but if a risk is to occur and could potentially cause a negative impact then that is a threat to the project. There are different kinds of risk and can be categorized into three forms either time related, cost related or performance related. Time related risks affect the scheduling of tasks and project activities and at most time greatly contribute to the occurrence of time overruns for projects. Cost related risks on the other hand, are the uncertainties whose occurrence will most definitely affect the project budget and many at times normally end up causing cost overruns in projects. Performance related risks uncertainties whose occurrence causes the production of different results of the expected project specifications. The

occurrence of these risks if left unchecked and unplanned for cause the unsuccessful implementation of projects (O'Connor, 2020).

Project risk management is the practice that entails identifying, analyzing and responding to any kind of uncertainties that may arise during the project lifecycle and help projects to progress smoothly and achieve its goal. It is an important part of project planning phase as it helps in determining risks that have a likelihood of occurring and devising mechanisms or methods of coping or controlling them in-case they occur to prevent their adverse effects on the project. For mega projects risk management is taken to mean developing strategies that involve extensive detailing plans for each risk that may occur and putting in place mitigating strategies. In the case of small-scale projects this goes to mean listing the possible risks and in their prioritized level of occurrence; low, medium or high. The process of risk management begins once the project charter has been developed and the project teams identifies all the possible risks that may occur while logging them using a risk tracking template which assists in defining the risk levels and helps in prioritizing process. The steps in developing a risk management plan include identification of risks, analyzing risks, prioritization of risks, risk ownership, response for the risks and monitoring of risks. Once all those steps have been established and detailed then the risk management plan can be developed. The risk management plans can further be managed using tools like the Gantt chart and Kanban boards (Ray, 2021).

Planning for management of risks helps in project completion with minimal obstructions. This is called development of risk strategies. According to the 6th edition guide of Project Management Body of Knowledge, the strategies proposed for negative risks include; avoidance, mitigation, transference, escalation and acceptance. Firstly, avoidance is the most preferred strategy only if it’s available to be utilized. This can be affected by either changing the plan, schedule or scope of project activities. An example is in the case election years like forthcoming election in Kenya in 2022, if there is a proposed urban roads project to be executed within that year then planning and scheduling for activities around the eminent event is crucial so as to prevent snarl up or crashing dates leading up to the even period (PMBOK guide, 2017).

The second strategy is mitigation, this is whereby the probability of risk occurring is minimized and so are its impacts on the project. The best example is on road consumable, with the implementation of new taxes suppliers are always on the look out to increase their consumable

prices thus to curb this, the project implementers may pre-negotiate a reasonable price before the occurrence of the risk during project execution to prevent costly prices that may inevitably cause cost overruns for the project. Transference of risk is used when one cannot manage to deal with a risk on their own and this brings the need for project covers and insurance which all urban road projects require the contractor to provide during the execution period. Escalation strategy prescribes to situations where one lacks the authority to manage a risk in cases of government implementing regulations and the only option here is monitoring the impact of the risk to the project. Finally, acceptance which is the strategy that prescribes to the notion of acknowledging the risk but no action is taken. For the positive risks, the response strategies include; enhance, exploit, escalate, accept and share. Planning for the positive risk strategies ought to increase the chance of risk occurrence. (PMBOK guide, 2017).

According to Kenya Urban Roads Authority (KURA), the major risks facing the entity include credit risk, liquidity risk and market risks. All these risks are associated to financial instruments. Credit risk in this case is caused by failure to honor a financial obligation by one entity to a financial instrument and causes financial loss to the other party. Liquidity risk on the other hand is that an entity will have difficulty in fulfilling its financial obligations for liabilities that are to be settled by cash or another financial asset. The market risks are associated with the changing market condition causing either price to fluctuate, currency and interest rates to change among other price associated risks. The strategies put forward include; the entity does not partake transactions with foreign currencies, the authority does not partake in holding investments that are susceptible to price risks, for receivables; there is a system in place that ensures debtors pay up within 48 hours and incase of default the debtor is not allowed to partake in any new cash advances and finally for payables; the authority has a fixed 30 day period from date of interim certificates payments to when they are fully settled (Auditor-General, 2017).

With the pointed out risks the authority failed to mention the frequency of occurrence for the risks, the risk that the entity is most susceptible to and how effective are the response strategies placed forward on implementation of urban roads projects and what are the risk drivers for urban road projects. Project risk management in matters related to road construction needs to identify the major risk drivers, identify the possible risk and propose mitigation actions to enable successful implementation of these projects. Risk assessment is considered a vital part of risk management at the planning phase and need to be carefully identified and measures for mitigation proposed for

the effective and efficient delivery of roads projects in specific highway projects. In the cases that risk assessment has been applied for road construction projects it been evident that it lowered cost and schedule growth rating for different identified risk drivers (Singh & Chugh, 2016).

The study conducted on urban roads risk management stated that urban road construction is dependent on the management of various risks. It further highlights that risk management for urban roads addresses the object of cost overruns, time overruns and quality of the roads. It points out the critical value that risk management has on the planning phase for urban roads in Nepal (Mishra & Adhikari, 2019). Another study on management of risks in road construction projects a case of high-volume roads points out that risk has adverse effects on the three parameters that measure successful implementation of projects namely cost, scope and time. Additionally, it states that the understanding of the probable risk in the early planning stages for road projects helps in the reduction of risk impacts and efficient and effective project delivery (Okate & Kakade, 2019). The study findings on the effect of risk identification and risk analysis on performance of road construction projects in Kakamega County showed that risk identification and analysis had a positive and significant influence on the performance of road projects and further recognized that there are gaps in issues relating to project team involvement during risk identification phase and this could possibly curtail the positive effect of the practices in management of risk on the execution of road construction projects (Otaalo , Muchelule , & Asinza, 2019).

2.7 Theoretical Framework

The structure that supports the study existing theories and proven principles in the inquiry field in relation to the study being conducted (Adom, Hussein, & Adu-Agyem, 2018). For this study, the theories that have been reviewed and used to explain the subject matter include; the theory of triple constraint and the theory of project management.

2.7.1 Theory of Triple Constraint

This paradigm is also recognized by some researchers as the iron triangle or project management triangle as it encompasses the three most critical constraint of project execution, monitoring and management. This theory was first put forth in 1990 by Goldratt in his book The Goal. Triple constraint is vital component of the concept in management of projects and it stems from the basis of execution of projects and providing the direction in which a project can be framed on. It encompasses the key project planning composition blocks and is used during the monitoring and

control process in the project execution phase. This theory provides the criterion that has been used for a long time to measure the performance and success of projects by assessing whether a project has been executed and delivered within the desired budget, agreed time and scope (Pinto, 2010).

The agreed triple constraints variables are cost, scope and time. The cost variable deals with resources required in a project and its budget while the time variable is concerned with the amount of time required to execute a project and the scheduling process and on the other hand the scope variable addresses the project activities and deliverables encompassed in the delivery of the project. The constrained aspect of the variables to the project is; for scope is evaluated based on the performance of the project deliverables, time is evaluated based on agenda closure by the stakeholders and the outlook on cost is evaluated based on the scheduling of the project's expenditure. This model helps in showing the project stakeholders how a variation in the constriction variables affect the delivery of the project and gives insight on how they are interrelated and the trade-offs required to be undertaken so as to accomplish the project objective within the agreed encompassing constituents (Van-Wyngaard, 2011).

The dynamics of this theory stipulate that a project always has conflicting demands and competing priorities when it comes to the implementation stage. Such is the case where project is being executed on a fixed timeline, then the budget and availability of the resources required will determine the project scope. Conversely, when the project scope is defined from the beginning, then the period required for executing the project will in largely influence the expenditure of the project. The defined relationship between the triple constraint variables offers the trade-offs that can easily be used in project delivery such that the project can be carried out to completion at the expense of either or two of the variables. In cases that there is an extreme weight put on the constraints then at least one of the constraint variables should be supple enough to ensure that there is balance in the delivery of the project. Most at times two variables are always considered to be a function of the predominant constraint considering the importance placed on the variables by the project stakeholders (Ward, 2003).

The dynamics can be critically explored on the basis of good, fast or cheap. This relates on how the project ought to be delivered. If the project stakeholders need the project delivery to be exemplary good then the cost may be considerably high and it may take a bit more time to close on the project. If it needs to be delivered very fast then the cost may be quite high while still

maintaining the required standards within the given scope of works. Another case is if the project needs to be delivered at a relatively low cost, then the scope of works needs to be decreased as the time required will be less so as not to compromise on the quality and functionality of the project. This particular trade-off system has been clearly depicted on the Barker and Cole seesaw model adaptation whereby when pressure is exerted on the timescales, requiring a faster execution then the expenditure is expected to go up and if pressure is exerted on the cost, requiring a cheaper approach to deliver the project, then the timescales inevitably go up. From that demonstration it's clear that for the delivery of a project to by the desired scope then it's actually impossible for it to be at a low cost and short period of time. The trade-off variables are critical to the flexibility of the delivery of the project (Barker & Cole, 2007).

This theory has been discussed by other scholars on its validity in relation to how consultants and experts in the field manage projects. It's said that the theory only reinforced the thinking aspect but does not align with the lived-up practice of the projects. Whitty and Van der Hoorn assert that this theory makes the project work required simpler to successfully implement a project and as a result causes anxiety due to the impossibility to have complete control of the project outcomes. Also, with this model there is creation of an illusion of project progress that is tangible due to an over-reliance on target measures, budget and time which have been oversimplified with this model. this goes to show that the model best gives guide to the project management feat rather than the project achievement and although it is seemingly vital it does not give the complete story on project related matters (Van-der-Hoorn & Whitty, 2015). It is argued that this theory fashions an excessive focus on the output mentality and this limits the effectiveness by an organization in achieving benefits and the authority/ responsibility distribution between project managers and functional managers (Badewi, 2016).

This theory reinforces the concept of the constraints being investigated by the study and gives insight on their relationship with each other. Just like the human body is divided into different parts with each having its vital function and work together to enable the body to properly function, so do the project constraints. They all have different limiting abilities that ensure that a project being implemented is within given boundaries to give optimal performance. The constraints work in a trade off like system but with an almost equal contribution such that they are interlinked to facilitate implementation of a project the best way possible that will offer the project stakeholders satisfaction as per the requirements that they consider most essential with the project.

2.7.2 Theory of Project Management

This theory history stems from two fore fathers; first was Henry Gantt who is famous for developing the Gantt chart and spear headed the use of planning and control techniques. The second founder was Henri Fayol who is known for developing the five management functions. They both propelled Frederick Taylor's scientific management theories to the modern day's project management. This philosophy explains the underpinning of project management and is categorized as; the theory of project and the theory of management. Starting with the former, it theorizes projects as conversion of efforts and thruputs. The guiding principles for this theory suggest that transformation of a project undergoes decomposition into well understood and manageable tasks and the optimal realization of the project can be achieved through realizing tasks in an optimal manner and sequential corollary, in that the performance of a project can be achieved through tasks improvement. The assumptions under this model provides that tasks are independent excluding the case for chronological relationships, tasks are bounded and discrete, low uncertainty for requirements and tasks, the work is shown in a hierarchical breakdown of the entire conversion and at the onset the requirements are in existence and can be broken down as the work progresses (Koskela, 2000). The subject components for this theory are conversion, movement and creation of value for the project.

The second proponent, theory of management is entails planning, execution and control of a project. It contains theory models within itself which include; theory of planning, execution and control. To begin with is the planning model which conceptualizes that there is an effector and managerial part in a project of which the core role of the latter is planning and the former is to convert the subsequent part into action. It has some governing principles which are perceptive of the existing state of the world, its wanted state and the acceptable transformation that can be achieved. The second principle is that the effector part transforms the plan to reality. The assumption based on the theory state that it's a simple process to translate the plan to action by succeeding instructions and that the core of planning a chore is dependent on the assigned individual to perform the chore. It further explains that the planning process is categorized into the main processes and enabling processes. The main process is structured into scope- definition, planning, activity- definition, sequencing, duration planning, resource planning, estimating of cost, cost budgeting, development of schedule and development of project plan. The deliverable for this is plans for the project with the involvement of executing processes (Koskela & Howell, 2002).

Secondly, the execution model of this theory states that managerially, the execution of a project is about relaying tasks to the different work posts and the holding notion states that according the project plan when the time for executing a task has reached, it is authorized in writing or speech to commence. The assumption is that at the time of authorization, the tasks' inputs and resources are to be prepared and the task is to be well understood, commenced and finished as per the authorized plan. This theory is analogous to the job dispatching concept that is used in manufacturing whereby it provides the crossing point between work and plan. This involves the central authority assigning tasks to work crews or machines by using a logical decision rule. This shows that dispatching has two elements which are decision making and communicating the task to the workstations. In the case for project management, the decision is part of planning therefore dispatching is reduced to just communicating the tasks. This leaves it to be more of the classical communication theory (Koskela & Howell, 2002).

Finally, the control model of this theory proposes that there is a procedure to be managed, a performance measurement unit, a performance standard and a unit of control. The principle holds that to correct the process, the possible variance between the measured value and standard are used so as to arrive at the required standard. The assumptions state that the process is of continuous flow type and aggregate terms are used to measure the performance. Secondly, it states that the control available can be used to easily correct the process. The PPC is the metric being used. For the case for management of projects, regulation is applied when comparing the progress and performance baseline and is normally expressed in terms of time in hours and money. This theory utilizes the scientific experiment model in place of the thermostat model's shortcoming by addressing the return to performance of standard by utilizing the available assets with varying strength where the model of thermostat fails to discourse motives for unconventionalities and eradicating origin causes (Koskela & Howell, 2002).

This theory supports scope decomposition into smaller manageable units which is WBS. It further explains the need for planning on activity level, sequences of the listed activities, budgetary allocation of the activities through cost estimating process and definition of the timelines for covering the defined scope of works. This relates to scope, cost and time constraint as they guide the project on its implementation using defined and definite targets that are measurable in evaluating the project being implemented. This theory further puts a keen focus on information

relaying systems to and from the stakeholders as this facilitates stakeholder's engagement all throughout the implementation process of the project.

2.8 Conceptual Framework

This is used to provide figurative depiction on connection between the dependent and independent variable. Here it is presented in a way that displays the relationship of the study variables and their indicators are listed. The indicators under independent variables show how the variables influence the outcome on implementation of urban road projects. This is displayed on figure 1.

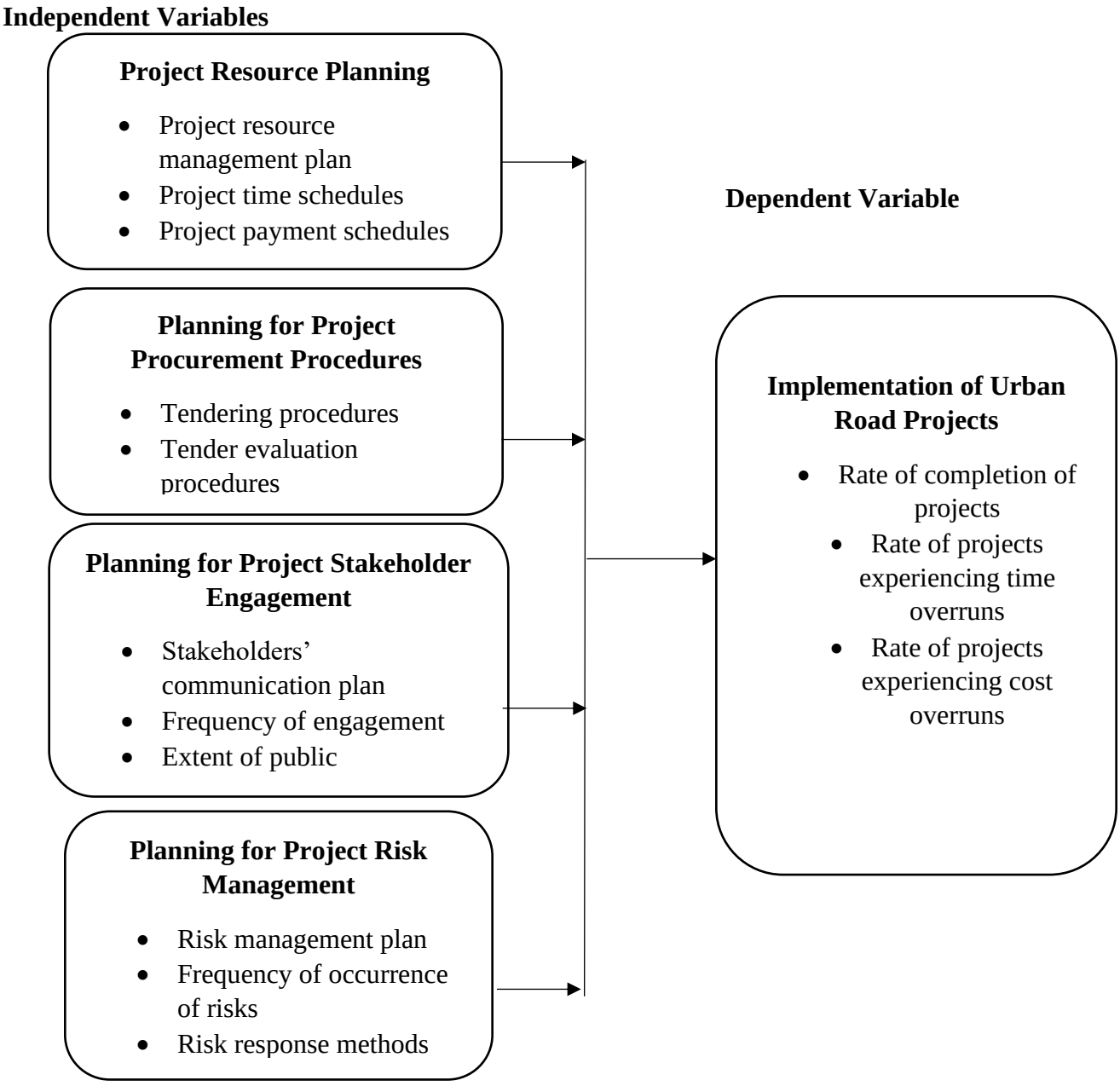


Figure 1: Conceptual Framework

2.9 Summary of Literature Review

The implementation of road projects in relation to urban roads has been extensively reviewed providing the reasonable gaps that are present with the existing studies conducted that will be basis for the need of this study being conducted. Additionally, the different independent variables have been reviewed and related to the implementation of urban road project with the support of previously conducted studies. Beginning with project resource planning which explored at length the impact of time resource, cost resource and materials resources in relation to implementation of

projects. Human resource as a function was reviewed extensively with the angle of stakeholder engagement for the implementation of urban roads projects pointing out its importance and contributing using the stakeholder participation matrix that can be used to establish the influence and impact of the different project participants to the urban road projects being implemented.

Further on, the procurement procedure that are used to acquire project vendors either in a goods or services capacity has been extensively reviewed with the different types of procurement being examined and their advantages to the projects. Project risk management has also been reviewed to lengths of discussing the response strategies that are normally employed for construction projects and the need to properly identify risks and plan on a response and management for them at the planning phase of projects. To add on, the theory of triple constraint and theory of project management are reviewed as they give a theoretical insight on the constraints and implementation of the urban road projects. Finally, the conceptual framework was developed having all the independent and dependent variables with their measurable indicators for the study being conducted after which a summary of the knowledge gaps was presented in a tabular for to show the need for this particular study.

2.10 Knowledge Gaps

Table 2. 1: Knowledge Gap Matrix

Variable	Author & Year	Title of Study	Findings	Knowledge Gap	Contribution of the study
Implementation of urban road projects	(Shabo, 2017)	Factors influencing implementation of county roads projects in Kenya. A case of Isiolo County	The study established that public participation and financial disbursement had a strong positive influence on implementation of roads projects while human resource had moderate influence and finally politics had negative	This study focused on the influence that public participation which is an indicator of stakeholder engagement, financial disbursement which relates to financial resource planning but did not extensively	The study will extensively look into planning for project procurement procedures and project risk management and how they influence implementation of urban road projects in Nairobi County

			influence on the mentioned projects	touch on procurement procedures and risk management and their influences on implementation of urban road projects.	
	(Wambui, Ombui, & Kagiri, 2015)	Factors affecting the completion of road construction projects in Nairobi County; A case of Kenya Urban Roads Authority	The study findings pointed out that the completion of road projects is greatly influenced by project funds, project technology, project managers' competencies and the project equipment.	The study only focused on one element of project planning which is resources planning and how they affect the completion of road projects in Kenya. This study failed to explore the rest of the elements that affect road implementation and completion for the said projects.	The study will explore other elements of planning like planning for stakeholder engagement, risk management and procurement procedures and how the influence the implementation of urban road projects
Project resource planning	(Kogi & Were, 2017)	Factors affecting cost overruns in construction projects. A case of Kenya National Highways Authority	The study indicated that project schedule affects cost overruns due to land acquisition challenges. Project scope challenges and poor project management tools by road contractors contributed to the delays in beginning and	This study explores project resource planning cost aspect in the aspect of cost overruns that are experienced in the project and only focuses on factors that causes it to road construction	This study will focus on all dimension of resource planning and how they influence implementation of urban roads in aspects of human resource, material, financial and time resources.

			completion time of the project and this in turn had negative effects on the project cost causing overruns.	projects in KENHA. The study fails to explore the influence of financial resources as a whole to the implementation of urban road projects	
	(Onenga, Miroga, & Otinga, 2020)	Determinants of timely completion of road construction projects in Kakamega county, Kenya	The study noted that project manager's competencies, a well stipulated and authorized project financing structure and effective management of project cost overruns had significant influence on timely completion of the said projects.	The focus of this study is on road construction projects in Kakamega county and despite there being notable determinants on the time constraint, it does not adequately touch on how resource mobilization can impact timely completion of projects although it touches on impact of cost overruns in relation to good site management and quality of materials used.	This study will actively looks on the impact of resource mobilization and resource management strategies and their impact on implementation of urban road projects
Project procurement procedures	(Kiiru, 2015)	Public procurement systems and its influence on	The study findings pointed out advertisement for tender on	The study failed to look into the different types of procurement	This study will focus on exploring the different forms of procurement

		building contracts performance during project implementation; A case of Nairobi County	local dailies or website ranked as the most significant predictor on public procurement systems for project success. The procurement process criteria for tender evaluation holds a significant attribute for the successful implementation for building and construction development projects.	and contractor selection method as part of the procurement procedures and its influence on project implementation	procedures and seek to establish which method is mostly used and its impact when implementing urban road projects
	(Luka, 2016)	Influence of public procurement practices on road construction projects implementation; A case of Kenya Urban Roads Authority in Machakos County	From this study it was revealed that there is a strong correlation between project procurement planning, monitoring and evaluation and choice of procurement procedures and project implementation for the road construction projects in Machakos as it influences it to larger extent.	Despite this study having a look into how the procurement practices influence implementation of road projects it fails to have an in-depth study on the different procurement systems, tender evaluation process and contractor selection process as critical elements of the procurement procedures for	This study will seek to establish how the different procurement procedures, contractor selection and evaluation affect the implementation of urban road projects

				road projects under KURA	
Project stakeholder engagement	(Ndunda, Paul, & Mbura, 2017)	Influence on stakeholder activities on implementation of rural roads projects in Kenya	The study findings point out that financiers play a significantly critical role on roads implementation by providing the necessary project budgetary allocations timely and sufficiently to ensure that project delivery stays on track for time, cost and quality. The study further states that by engaging qualified and registered road contractors in road projects ensures that projects are delivered with satisfactory quality	The study focuses solely on rural road projects in Kenya while excluding urban road projects aspects. Despite pointing out the financiers' role, oversight and regulating entities roles, it fails to define the stakeholder's communication models that relates to implementation of road projects and the frequency of stakeholder engagement for the urban road projects	This study will focus on urban road projects implementation and the extent of influence that stakeholder involvement has on the same
	(Mandala, 2018)	Influence of stakeholder involvement in project management on the performance of road construction projects in Kenya; A case of	The study conducted highlighted the significant influence of stakeholder involvement in project management on the performance of road construction	Although this study showcases the advantage of having stakeholder engagement for road construction projects it fails to highlight and discuss the	This study will highlight and discuss the extent to which stakeholder engagement planning impacts the effectiveness of project implementation

		Bondo Subcounty, Siaya County	projects in Kenya. She further states that for stakeholders' accountability purposes the project tasks need to be effectively outlined and this permits enhancement of the budgeting process for the project resources.	extent to which stakeholder engagement planning impacts the effectiveness of project implementation on aspects of the communication models employed, frequency of their involvement during the planning, implementation and control stages for the project and rating the satisfaction levels at the closure phase of the project	
Project risk management	(Mishra & Adhikari, 2019)	Risk Management Practice in Urban Road Construction Project in Shiddhartha nagar Municipality, Rupandehi, Nepal	The study findings stated that urban road construction is dependent on the management of various risks. It further highlights that risk management for urban roads addresses the object of cost overruns, time overruns and quality of the roads.	Although the study explores risk management and urban roads it's based in Nepal and its focus fails to mention the different types of risk associated in urban road projects, their frequency and drivers.	This study will establish likelihood of risk occurrence and the different response mechanism employed when implementing urban road projects

	(Otaalo , Muchelule , & Asinza, 2019)	The effect of risk identification and risk analysis on the performance of road construction projects in Kakamega County	The study findings showed that risk identification and analysis had a positive and significant effect on the performance of road projects.	This study is wide viewed basing its research generally on road construction projects failing to specify the exact type of road projects being studied. Also, its focus is solely on risk identification and analysis and fails to study the other aspects of risk management such as drivers of risks in road construction projects.	This study will encompass different aspects of risk management like risk occurrences, response mechanisms and risk management strategies and how they influence the implementation of urban road projects in Nairobi County

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section extensively looks at the methodology that the study will use. Firstly, the design used in the study is discussed followed by the discussion on the target population. From the defined target population, a sample is drawn using a known formula that the social science prescribes to and the sampling procedure to be used is elaborated. The research instruments are established having the piloting research instruments selected, validity and reliability of the research instruments is discussed. The data collection procedure is established as the data analysis technique is described and the ethical considerations are discussed. Finally, the operationalization of the variables is presented in a tabular form showing how each objective is tackled.

3.2 Research Design

This prepares, arranges and provides a strategy of examination to the study on how the research problem and fundamental questions will be addressed. It provides a system framework of the investigation (Mukherjee, 2017). Quantitative research design was used, specifically the descriptive research design to describe the study phenomenon, collection, analysis and presentation the information collected. This design was selected as it helped in gathering comprehensive data on the current state of the implementation of urban road projects in relation to project planning.

3.3 Target Population

Target population is used to refer to events or objects that fulfill a preconditioned requirement that the researcher wants to find information about and may be from a broad or narrow scope (Allen, 2017). This study was based in Nairobi region which is the central headquarters for Kenya Urban Roads Authority. The region is believed to be information rich compared to other regions as it's the headquarters for KURA and they oversee implementation of urban road projects not only in Nairobi but can tap into other regions whenever need arises. Therefore, the target population for this study was KURA employees at the headquarter offices comprising of 1,000 in number. The number of employees from the different departments comprised of 50 from IT department, 50 from finance department, 100 from human resource department and 800 from the construction

department. The target population for the study was believed to sufficient experience in handling urban road projects and is best fit to participate in this study. The target population was guided by a previously published journal article study conducted in Kenya Urban Roads Authority that established the precise number of employees (Wambui, Ombui, & Kagiri, 2015). The target population categorization is on table 3.1.

Table 3. 1:Target Population

Category	Target Population	Percentage
IT Department	50	5%
Finance Department	50	5%
HR Department	100	10%
Construction Department	800	80%
Total	**1000**	**100%**

Source: (Wambui, Ombui, & Kagiri, 2015).

3.4 Sample Size and Sampling Procedure

3.4.1 Sample Size

The sample size is established by means of a prescribed formulae by Yamane (Yamane, 1967) in social sciences. The formula used in this research study follows that;

Equation 1: Determination of sample size equation

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

n = sample size

N = total number of populations

e = level of precision (0.10)

Source: (Yamane, 1967).

Using this formula, the sample size was calculated as follows;

$$n = \frac{1000}{1 + 1000(0.10^2)}$$

$$n = \frac{1000}{11}$$

$$n = 90$$

Therefore n; sample size is 90.

Table 3.2 displays the sample size data.

Table 3. 2: Sample Size

Category	Target Population	Sample size
IT Department	50	5
Finance Department	50	5
HR Department	100	9
Construction Department	800	71
Total	**1000**	**90**

3.4.2 Sampling Procedure

After the target population has been determined and the sample frame chosen, one needs to select the method for study sampling. Here, a probability sampling design is chosen. This type of sampling is grounded on the fact that every component in the sample frame has an equal probability of being chosen to partake in the study. It utilizes randomization in selection of participants. The specific probability sampling method to be used is simple random sampling which offers equal chances of selection while providing the researcher the association that is representative of the whole population that is the employees at KURA.

3.5 Research Instruments

Here, the instrument selected was questionnaire. It is used to gather data in the format of a series of inquiries and may be administered in person, through web-based platform or on hard copies. It is considered to be a relatively fast means of data collection as the researcher is not always required to be present when the questionnaires are being filled and this can be quite an efficient and economical way as they can be sent out to the respondents for them to attended to (McLeod, 2018).

In this case, the questionnaire used was categorized whereby the first section entailed the demographic characteristics of the respondents, the following sections were focused on

implementation of urban road projects, project resource planning, planning for project procurement procedures, planning for stakeholders' engagement and planning for risk management respectively, totaling to six sections.

Most of the questions were presented in a Likert scale format which had five-point scale showing the agreeability extent of the respondent to the questions asked. This format was preferred as it provided the different ranges of agreeability of the statements by the respondents while giving their opinions and attitudes on the subject matter in question. The other questions that were not in a Likert scale format, were presented in a closed ended questions format, whereby a range of probable responses were provided for the respondent to select from.

3.5.1 Piloting of Research Instruments

Piloting was carried out so as to determine the viability of carrying out the research on a grander scale. It provides insight to the researcher on the strength or weakness of the study and the relevance of the questions asked and if any of them is established as being irrelevant, it will be revised for relevancy to the study. The questionnaire prepared for the study will first be piloted.

As the pilot study is supposed to be conducted involving between 1% and 10% of the actual sample (Johanson & Brooks, 2009). Therefore, 9 participants were selected to participate in the initial roll out of the study for the purposes of testing the research instrument, the number was sufficient as it satisfied the 10% proportion required to conduct piloting on the instrument. The selected participants were employees at the metropolitan department in Nairobi conversant with handling urban road projects within Nairobi. The employees selected for the piloting exercise did not in any way be involved in the final field study for the research. The pilot study was conducted one week prior the actual data collection exercise so as to help the researcher have sufficient information to make an informed decision on what actually work or does not work in relation to the questionnaire and adjust it accordingly.

3.5.2 Validity of Research Instruments

Validity is the level to that an instrument estimates what it purports to gauge and tries to explain the truth of the research findings as it measures both the empirical and theoretical evidences (Kubai, 2019). In this case content face validity and construct validity were used to measure the level to which the instrument being used measures what it appears to measure conferring to the subjective

valuation of the researcher. The research objectives were measured through the designated variables that the researcher selected for the study. Further, the supervisor who is an expert assisted to validate through expert judgement to ascertain that the instrument used was be able to achieve the desired purpose. Construct validity was concerned with how ambiguous or clear the questions were phrased in the questionnaire.

3.5.3 Reliability of Research Instruments

Reliability is the degree to which measurements are repeatable when dissimilar individuals on different times execute the measurement under varied circumstances or with substitute instruments which gauges the skill. Also, it can be defined as degree to which a construct is dependable or consistent (Kubai, 2019). The reliability of the instrument will be ascertained using internal consistency reliability. Piloting for the study will be conducted and the data collected will be analyzed using through SPSS. The output from SPSS yielding the Cronbach alpha will show how reliable the questionnaire is. The reliability coefficient (alpha) analysis can range between 0 to 1, with 0 showing that a questionnaire is not reliable and 1 showing absolute reliability of a questionnaire. A reliability coefficient (alpha) of 0.70 or higher is thought to be satisfactory reliable in SPSS. The reliability coefficients are shown in Table 3.3.

Table 3. 3: Reliability Coefficients of the Variables

Variables	N of items	Cronbach Alpha Coefficient Results
Implementation of Urban Road Projects	3	0.765
Project Resource Planning	6	0.701
Project Procurement Procedures	3	0.737
Project Stakeholder Engagement	4	0.780
Project Risk Management	3	0.768
Combined Mean		**0.748**

Table 3.3 established that the instrument is reliable as the results present the coefficient of 0.748, which is greater than the required Cronbach alpha value of 0.70.

3.6 Data Collection Procedure

Data collection followed that the researcher requested for a letter authorizing collection of data from the university which in turn was provided by the concerned department after three weeks

form the time of request. This letter was then submitted as part of the requirements by the National Commission for Science, Technology and Innovation (NACOSTI) on their portal and a fee of Ksh. 1,000 paid. The permit for data collection was given in two weeks' time and that allowed the researcher to proceed to collect data.

At the KURA headquarter offices, the researcher was advised to prepare an introductory letter to the organization and director which would be used to direct approval to collect data within the organization. The approval request was then granted by the Director General and seconded by the Human Resource Department of the organization after four weeks. The researcher then proceeded to distribute hard copy questionnaires within the organization with the assistance of a research associate from the organization and collected them after two weeks for coding and analysis of the data collected.

3.7 Data Analysis Technique

Once the questionnaires had been collected, they were inspected to ensure that the requirements like no available blank spaces and spelling errors were observed. After that, the data was inputted for analysis using SPSS software and amended for accuracy, comprehensiveness and uniformity.

The coded data was evaluated using both descriptive and inferential statistics through means of central tendency and measures of dispersion. After analysis, the data was presented in tables for responses percentages and frequencies. Correlation analysis was conducted and the correlation coefficients (R) obtained that explained the relationship between the variables using the Pearson correlation.

Regression analysis was used since it decomposes the unique contributions of each variable as a predictor in the matrix using the Pearson correlation. The independent variables were systematically shown in order of their predictor strength to the study. The expected results were in form of descriptive statistics with the mean and standard deviations of the variables of sample size. The ANOVA was done to examine the statistical implication of the model at each step. The coefficient table with the beta weights will be produced showing the correspondence with unstandardized coefficients beta and the standard error. The beta weights assist to debatably infer the exceptional role of every variable as a predictor of the dependent variable. The presentation in terms of charts and graphs will be produced.

Equation: Multi-Regression Analysis

$\mathbf{I_{URP} = a + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta_4 X_4 + \varepsilon}$

I_{URP} – Implementation of Urban Road Projects

A - constant

$\beta 1$, $\beta 2$, $\beta 3$, β_4 and β_5- regression coefficients representing transformation in the dependent variable, as a result of change in X1, X2, X3 and X_4 respectively.

X1 – Project resource planning

X2 – Planning for project procurement procedures

X3 – Planning for project stakeholder engagement

X_4- Planning for project risk management

ε - Error term

It represents the error margin within a statistical model.

Table 3. 4: Hypothesis Testing

Table 3.4 shows how the hypothesis for the study will be conducted.

Objective	**Hypotheses**	**Model for Hypothesis testing**	**Results Interpretation**
To assess the influence of project resource planning on the implementation of urban roads projects in Nairobi County.	**H_0**: Project resource planning has no significant influence on the implementation of urban roads projects in Nairobi County.	$y = \alpha + \beta_1 X_1 + e$ y= implementation of urban road projects α= constant, β_1= beta coefficient, X_1= Project resources planning e= error term	p- value < 0.05 reject $H_0 1$ > accept otherwise
To determine how planning for project procurement procedures influences implementation of urban roads projects in Nairobi County.	**H_0**: Project procurement procedures has no significant influence on the implementation of urban roads projects in Nairobi County.	$y = \alpha + \beta_2 X_2 + e$ y= implementation of urban road projects α= constant, β_2= beta coefficient, X_2= Planning for project procurement procedures e= error term	p- value < 0.05 reject $H_0 2$ > accept otherwise

To establish how planning for project stakeholder engagement influences implementation of urban roads projects in Nairobi County.	**H_0**: Project stakeholder engagement has no significant influence on the implementation of urban roads projects in Nairobi County.	$y= \alpha+\beta_3X_3+e$ y= implementation of urban road projects α= constant, β_3= beta coefficient, X_3= Planning for stakeholder engagement e= error term	p- value < 0.05 reject H_03 > accept otherwise
To examine how planning for project risk management influences implementation of urban roads projects in Nairobi County.	**H_0**: Project risk management has no significant influence on the effective implementation of urban roads projects in Nairobi County.	$y= \alpha+\beta_4X_4+e$ y= implementation of urban road projects α= constant, β_4= beta coefficient, X_4= Planning for project risk management e= error term	p- value < 0.05 reject H_04 > accept otherwise

3.8 Ethical Considerations

This research study was steered in an ethically organized method and the participants' rights were not violated throughout the whole process. The utmost apprehension of ethical affluences of the target population was also taken into consideration during the study. The ethical considerations during this research study included; the selected participants were clearly enlightened to the study subject matter and requested to participate in filling the questionnaire at their own free time. They were advised to give their honest opinion on the subject matter so as to ensure credibility of the information collected. Further, all the respondents were assured of maintenance of their anonymity as their personal information was not requested for the study. Finally, the information collected was analyzed in an ethically professional manner to ensure that it's not forced to conform to the predetermined opinion of the study.

3.9 Operationalization of Variables

Table 3.5 presents the operationalization of the variables, providing information on each research objective, its respective variable and indicators, the measurement of scale, the type and tools of data analysis used.

Table 3. 5: Operationalization of Variables Matrix

Research objective	Variables	Indicators	Scale of measurement	Type of analysis	Tools of Data Analysis
To assess the influence of project resource planning on the implementation of urban roads projects in Nairobi County	Independent variable Project resource planning	• Project resource management plan • Project time schedules • Project payment schedules	Ordinal scale	Descriptive Statistics Inferential statistics	Arithmetic mean Standard deviation Frequencies Pearson correlation Regression analysis
To determine how planning for project procurement procedures influences implementation of urban roads projects in Nairobi County.	Independent variable Planning for project procurement procedures	• Tendering procedures • Tender evaluation procedures • Contractor selection	Ordinal scale	Descriptive statistics Inferential statistics	Arithmetic mean Standard deviation Frequencies Pearson correlation Regression analysis
To establish how planning for project stakeholder engagement influences implementation of urban roads projects in Nairobi County	Independent variable Planning for project stakeholder engagement	• Stakeholders' communication plan • Frequency of engagement • Extent of public participation	Ordinal scale	Descriptive Statistics Inferential statistics	Arithmetic mean Standard deviation Frequencies Pearson correlation Regression analysis
To examine how planning for project risk management influences implementation of urban	Independent variable Planning for project risk management	• Risk management plan • Frequency of occurrence of risks	Ordinal scale	Descriptive statistics	Arithmetic mean Standard deviation Frequencies

roads projects in Nairobi County.		• Risk response methods employed		Inferential statistics	Pearson correlation Regression analysis
Implementation of urban road projects in Nairobi County.	Dependent variable Implementation of urban road projects in Kenya	• Rate of completion of projects • Rate of projects experiencing time overruns • Rate of projects experiencing cost overruns	Ordinal scale	Descriptive statistics Inferential statistics	Arithmetic mean Standard deviation Frequencies Pearson correlation Regression analysis

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter covers the study findings, analysis, presentation and interpretation in line with the study objectives and hypothesis. The thematic areas include; the questionnaires return rate, the respondents' demographic characteristics, implementation of urban road projects, project resource planning, project procurement procedures, project stakeholder engagement and project risk management.

4.2 Questionnaire Return Rate

The sample size drawn from the target population was 90 of which questionnaires were administered to them after the approval for data collection was given by Kenya Urban Roads Authority Director. Among the 90 questionnaires distributed, 76 questionnaires were answered and collected. That translated to 84.44% response rate. The results of rate of responses are presented in Table 4.1.

Table 4. 1: Questionnaires Return Rate

Responses	**Frequency**	**Percentage**
Responses	76	84.44
Non-responses	14	15.56
Total	**90**	**100**

The questionnaire return rate translated to 84.44%, which is deemed acceptable and sufficient as social sciences recommended a return rate of about 70% and above for a study to be considered fit for analysis to be carried out (Mugenda & Mugenda, 2003).

4.3 Demographic Characteristics of Respondents

The study first established the respondents' demographic characteristics which included their profession, highest level of education, level of practice experience and gender. The analysis is presented in Table 4.2.

Table 4. 2:Demographic Characteristics of the Respondents

Variable	Frequency	Percentage	Cumulative Frequency
Profession			
Road Engineer	44	57.9	44
Road Inspector	0	0	44
Quantity Surveyor	0	0	44
Superintendent Roads Officer	0	0	44
Urban Planner	15	19.7	59
Other	17	22.4	76
Total	**76**	**100.0**	
Highest Level of Education			
High School or Below	0	0	0
College Diploma	0	0	0
Undergraduate Degree	59	77.6	59
Masters' Degree and Above	17	22.4	76
Total	**76**	**100.0**	
Level of Practice Experience			
Less than 5 years	19	25	19
5-10 years	32	42.1	51
11-15 years	14	18.4	65
Over 15 years	11	14.5	76
Total	**76**	**100.0**	
Gender			
Male	58	76.3	58
Female	18	23.7	76
Total	**76**	**100.0**	

As per Table 4.2, most of the respondents were road engineers who were 44 (57.9%), followed by respondents who were from other profession 17 (22.4%), then urban planners who were 15 (19.7%) and the professions; road inspector, quantity surveyors and superintendent officer did not have any respondents participate. These findings indicate that urban roads projects heavily rely on

road engineers in their implementation for their technical expertise as opposed to other professions although they are involved even though it's to a smaller extent.

On the highest education level, the results showed that majority of the respondents had an undergraduate degree which was 59 (77.6%), followed by 17 (22.4%) of them who had a masters' degree or higher education and from the sample used from the organization, none of the respondents only had a high school certificate or college diploma. The findings imply that the technical staff that partake in urban road projects have considerably higher level of education and training.

Also, majority of the respondents had a level of practice experience of 5-10 years which was 32 (42.1%), then less than 5 years of experience which was 19 (25%), closely followed by 11-15 years of experience which was 14 (18.4%) and finally over 15 years of experience which was 11 (14.5%). The findings established that most of the employees involved in implementation of urban roads projects from KURA have an experience which would normally be considered more than adequate to partake the said projects.

On the distribution of respondents by gender, the findings indicated that 58 respondents (76.3%) were male, whereas 18 respondents (23.7%) were female. This shows that the majority of the respondents involved in urban road projects are male, implying that is it a generally male dominated with fewer females being involved with the careers directly related with road projects and their implementation.

4.4 Implementation of Urban Road Projects

The dependent variable sought to acquire responses on the implementation of urban road projects using provided statements on a Likert scale format. Their level of agreement with the provided statement was in form of a five-point scale whereby 1 signified very low, 2 signified low, 3 signified moderate, 4 signified high and 5 signified very high. The findings are displayed on Table 4.3.

Table 4. 3: Implementation of Urban Road Projects

Statements	1 F	2 F	3 F	4 F	5 F	n	Mean	Standard Deviation
1. At what rate are urban road projects being implemented experiencing completion delays	0	8	16	25	27	76	3.9342	0.9978
2. At what rate are urban road projects being implemented experiencing budget overruns	4	9	13	33	17	76	3.6379	1.1142
3. At what rate are urban road projects failing to be completed or stalling	27	21	14	16	8	76	2.3026	1.3168
Composite							**3.2982**	**0.9484**

Table 4.3 shows the descriptive analysis results on implementation of urban road projects in Nairobi region. The researcher conducted a frequency analysis on each 5-point scale response of the statements, their means and standard deviations. Further, the results were transformed to composite variables which enabled their composite mean and standard deviation to be calculated and established as 3.2982 and 0.9484 respectively. The composite mean and standard deviation were computed to be compared to the mean line item of each statement of the response variable. In the cases that the mean line item was found to be lower than the composite mean, it showed that the statement had a negative contribution to the outcome of the variable and in cases that the standard deviation line item was lower than the composite standard deviation, then it showed that there was presence of divergent views with the statements.

The first statement was establishing at what rate are urban road projects being implemented experiencing completion delays. The results of the respondents' extent of agreement with the statement was as follows; none of the respondents indicated very low, 8 (10.5%) of the respondents indicated low, 16 (21.1%) of the respondents indicated moderate, 25 (32.9%) indicated high and 27 (35.5%) indicated very high. The computed mean and standard deviation were 3.9342 and 0.9978 respectively which were both higher than the computed composite mean and standard

deviation. The findings show that the extent of most of the respondents' agreement with the statement is high which was represented by 68.4%.

The second statement was establishing at what rate are urban road projects being implemented experiencing budget overruns. The findings showed; 4 respondents (5.3%) selected very low, 9 respondents (11.8%) selected low, 13 respondents (17.1%) selected moderate, 33 respondents (43.4%) selected high and 17 respondents (22.4%) selected very high. On comparing the statements' mean of 3.6379 with the composite mean of 3.2982, it was evident that the respondents views on the subject matter had a positive contribution to the outcome of the variable. Further, a comparison of the statements' standard deviation of 1.1142 with the composite standard deviation of 0.9978 showed that the respondents had collectively convergent views with the subject matter. This generally implied that majority of the respondents are in agreement with the statement and it's supported by a cumulative response of 65.8%.

The final statement was establishing at what rate are urban road projects failing to be completed or stalling. The results showed; 27 (35.5%) of the respondents indicated very low, 21 (27.6%) of the respondents indicated low, 14 (18.4%) of the respondents indicated moderate, 6 (7.9%) of the respondents indicated high and 8 (10.5%) of the respondents indicated very high. On comparing the statements' mean of 2.3026 with the composite mean of 3.2982, it was evident that the respondents views on the subject matter had a negative contribution to the outcome of the variable. Further, a comparison of the statements' standard deviation of 1.3168 with the composite standard deviation of 0.9978 showed that the respondents had collectively convergent views with the subject matter. This shows that most of the respondents think that there is a low rate of urban road projects failing or stalling which is represented by a cumulative response of 63.1%.

4.5 Project Resource Planning and Implementation of Urban Road Projects

The initial objective sought to assess the influence of project resource planning on the implementation of urban road projects in Kenya. To assess the influence, the respondents were required to give their opinion on the extent of agreement with the statements provided using a Likert scale format. The 5-point scale was used to indicate; 1 represented strongly disagree, 2 represented disagree, 3 represented neutral, 4 represented agree and 5 represented strongly agree. The results are presented in table 4.4.

Table 4. 4: Project Resource Planning and Implementation of Urban Road Projects

Statement	1 F	2 F	3 F	4 F	5 F	n	Mean	Standard Deviation
1.Most urban road projects have resource management plans	0	5	11	20	40	76	4.2500	0.9399
2.Having a resource management plan reduces the lags and delays in relation to availability of materials, labour and funds for a project on site	3	9	11	15	38	76	4.0000	1.2220
3.Most projects experience delays and thus require an extension of time	13	6	15	22	20	76	3.3947	1.4055
4.The availability of a works program enables projects to be implemented better in terms of monitoring the timelines for the project	3	2	3	19	49	76	4.4342	0.9844
5.When valuations and payments are conducted on time, there is a higher chance of the project being implemented to be more successful in terms of timely project delivery	3	2	3	21	47	76	4.4079	0.9822
6.A defined payment schedule contributes positively to the delivery of a project	6	6	18	22	24	76	3.6842	1.2243
Composite							**4.0285**	**0.6368**

The first statement is that most urban road projects have resource management plans. The findings show that; none of the respondents strongly disagree, 5 (6.6%) of the respondents disagree, 11 (14.5%) of the respondents are neutral, 20 respondents (26.3%) agree and 40 respondents (52.6%) strongly agree with the statement. On comparing the statements' mean of 4.2500 with the composite mean of 4.0285, it was evident that the respondents views on the subject matter had a positive contribution to the outcome of the variable. Further, a comparison of the statements' standard deviation of 0.9399 with the composite standard deviation of 0.6368 showed that the respondents had collectively convergent views with the subject matter. This generally points towards most respondents being in agreement with the statement with a support backing of 78.9%.

The second statement is that having a resource management plan reduces the lags and delays in relation to availability of materials, labour and funds for a project on site. The findings showed; 3 respondents (3.9%) strongly disagree with the statement, 9 respondents (11.8%) disagree, 11 respondents (14.5%) have a neutral opinion, 15 respondents (19.7%) agree and 38 respondents

(50%) strongly agree. On comparing the statements' mean of 4.0000 with the composite mean of 4.0285, it was evident that the respondents views on the subject matter negatively contributed to the outcome of the variable. Further, a comparison of the statements' standard deviation of 1.2220 with the composite standard deviation of 0.6368 showed that the respondents had collectively convergent views with the subject matter. This generally implies that most of the respondents 69.7% are in agreement with the statement.

The third statement is that most projects experience delays and thus require an extension of time. The finding showed; 13 respondents (17.1%) strongly disagree, 6 respondents (7.9%) disagree, 15 respondents (19.7%) have a neutral opinion, 22 respondents (28.9%) agree and 20 respondents (26.3%) strongly agree with the statement. On comparing the statements' mean of 3.3947 with the composite mean of 4.0285, it was evident that the respondents views on the subject matter negatively contributed to the outcome of the variable. Further, a comparison of the statements' standard deviation of 1.4055 with the composite standard deviation of 0.6368 showed that the respondents had collectively convergent views with the subject matter. This generally suggests that most respondents reached the agreement with the statement with a support backing of 55.2%.

The fourth statement is that the availability of a works program enables projects to be implemented better in terms of monitoring the timelines for the project. The results were; 3 respondents (3.9%) strongly disagree, 2 respondents (2.6%) disagree, 3 respondents (3.9%) are neutral, 19 respondents (25%) agree and 49 respondents (64.5%) strongly agree having a mean and standard deviation of 4.4342 and 0.9844 respectively. With both the mean and standard deviation being higher than their comparable composites, it implies that most respondents agree with a backing support of 89.5%.

The fifth statement is that when valuations and payments are conducted on time, there is a higher chance of the project being implemented to be more successful in terms of timely project delivery. The findings showed; 3 (3.9%) of the respondents strongly disagree, 2 (2.6%) of the respondents disagree, 3 (3.9%) of the respondents are neutral, 21 (27.6%) of the respondents agree and 47 respondents (61.8%) strongly agree having a mean and standard deviation of 4.4079 and 0.9822 respectively. With both the mean and standard deviation being higher than their comparable composites, it implies that 89.4% are in agreement with the statement.

The final statement is that a defined payment schedule contributes positively to the delivery of a project. The findings showed; 6 (7.9%) of the respondents strongly disagree, 6 (7.9%) of the

respondents disagree, 18 (23.7%) of the respondents are neutral, 22 respondents (28.9%) agree and 24 respondents (31.6%) strongly agree with the statement with a mean and standard deviation of 3.6842 and 1.2243 respectively. Despite the different views as per the disparity between the composite mean and the line item mean, the respondents views in regards to the subject matter show their general support in agreement of 60.5%.

4.5.1 Correlation Analysis between Project Resource Planning and Implementation of Urban Road Projects

The researcher used correlation analysis- Pearson Correlation Coefficient, to determine the relationship between project resource planning and implementation of urban road projects. This analysis was used to assist the researcher in determining the strength and direction of the relationship between project resource planning and implementation of urban road projects. The correlation analysis findings are presented in Table 4.5.

Table 4. 5: Correlation Analysis between Project Resource Planning and Implementation of Urban Road Projects

Variable		**Project Resource Planning**	**Implementation of Urban Road Projects**
Project Resource Planning	Pearson Correlation	1	.352**
	Sig. (2-Tailed)		.002
	n	76	76
Implementation of Urban Road Projects	Pearson Correlation	.352**	1
	Sig. (2-Tailed)	.002	
	n	76	76

**. Correlation is significant at the 0.05 level (2-Tailed)

The correlation analysis results on Table 4.5 show that there is low positive correlation 0.352 between project resource planning and implementation of urban road projects, which indicates a significant relationship with a p-value of 0.002 which is less than the test level of significance 0.05. This indicates that project resource planning influences implementation of urban road projects.

4.5.2 Regression Analysis of Project Resource Planning and Implementation of Urban Road Projects

Regression analysis was done to determine the relationship between project resource planning and implementation of urban road projects. Hypothesis was tested using simple linear regression model to satisfy the hypothesis formulated in regard to the first research objective;

1. **H_0**: Project resource planning has no significant influence on the effective implementation of urban roads projects in Kenya.
   H_1: Project resource planning has a significant influence on the effective implementation of urban roads projects in Kenya.

The first research hypothesis was tested using the model;

$y= \alpha+\beta_1 X_1+e$

y= implementation of urban road projects

α= constant,

β_1= beta coefficient,

X_1= Project resources planning

e= error term

Table 4. 6: ANOVA for Project Resource Planning and Implementation of Urban Road Projects

Factor	Sum of Squares	df	Mean Square	F	Sig.
Regression	8.381	1	8.381	10.498	0.002[b]
Residual	59.081	74	0.798		
Total	**67.462**	**75**			

a. Dependent Variable: Implementation of Urban Road Projects.

b. Predictors: (Constant) Project Resource Planning

Table 4.6 reflects the analysis of variance that was used to find the goodness of fit of the regression model. it indicates that the regression model predicts the dependent variable significantly well as it established that the F-significance value 0.002 was less than 0.01 ($p<0.05$).

Table 4. 7: Model Summary for Project Resource Planning and Implementation of Urban Road Projects

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.352[a]	0.124	0.112	0.89353

a. Predictors (Constant), Project Resource Planning

Table 4.7 gives the values for R and R^2. R value shows the simple correlation which is 0.352 which shows a low degree of correlation and the R^2 value indicates how much of the total variation in the dependent variable of implementation of urban road projects, can be elucidated by the independent variable of project resource planning. Here it reflects 12.4% that can be explained although its low.

Table 4. 8: Coefficients of Project Resource Planning and Implementation of Urban Road Projects

	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
Variables	**B**	**Std. Error**	**Beta**		
(Constant)	1.183	0.661		1.791	0.77
Project Resource Planning	0.525	0.162	0.352	3.240	0.002

a. **Dependent Variable**: Implementation of Urban Road Projects

Table 4.8 indicated that the standardized Beta value of 0.352 shows that a unit increase of project resource planning contributed to 35.2% rise in the variations of implementation of urban road projects. Thus, the regression equation is presented as;

Implementation of urban road projects= 1.183+0.525 (project resource planning) + e;

t=3.240; $p<0.05$. The findings established that the p value=0.002 which is represents $p<0.05$ hence, the null hypothesis of the study was rejected.

The findings of the study revealed that the predictor variable project resource planning have a low influence on implementation of urban road projects in KURA, Nairobi region. These findings (R^2 =0.124) can be used to explain 12.4% of the variations in the response variable implementation of urban road projects.

4.6 Planning for Project Procurement Procedures and implementation of urban road projects

The second objective wanted to determine how planning for project procurement procedures influences the implementation of urban roads projects in Nairobi County. To assess the influence, the respondents were first required to share what procurement procedure is mostly used for urban road projects. The analysis is presented in Table 4.9.

Table 4. 9: Urban Road Projects Procurement Procedures

Variable	Frequency	Percentage	Cumulative Frequency
Procurement procedure			
Open tendering	76	100	76
Restrictive tendering	0	0	76
Direct procurement	0	0	76
Request for proposals	0	0	76
Request for quotation	0	0	76
Total	**76**	**100.0**	

From the descriptive analysis of the urban road projects procurement procedures, open tendering method was deemed to be the method that mostly used by Kenya Urban Roads Authority with a frequency of 76 which shows 100% of the respondents selected the particular procedure.

Further the respondents' opinion on the extent of agreement with the statements was required using a Likert scale format. The five-point scale was used to indicate; 1 signified strongly disagree, 2 signified disagree, 3 signified neutral, 4 signified agree and 5 signified strongly agree. The findings are presented in table 4.10.

Table 4. 10: Planning for Procurement Procedures and Implementation of urban Road Projects

Statement	1 F	2 F	3 F	4 F	5 F	n	Mean	Standard Deviation
1.The type of procurement procedure can influence the successful implementation of urban road projects	17	0	15	17	27	76	3.4868	1.5275
2.Technical tender evaluation process is a better method than financial tender evaluation process	5	7	18	7	39	76	3.8947	1.3123
3.Implementation of urban road projects is largely dependent on the contractor selected for the project	5	6	2	25	38	76	4.1184	1.1996
Composite							**3.125**	**0.6461**

The first statement is the type of procurement procedure can influence the successful implementation of urban road projects. The findings showed; 17 (22.4%) of the respondents strongly disagree, none (0%) of the respondents disagree, 15 (19.7%) of the respondents are neutral, 17 (22.4%) of the respondents agree and 27 respondents (35.5%) strongly agree with a mean and standard deviation of 3.4868 and 1.5275 respectively. With both the mean and standard deviation being higher than their comparable composites, it implies that most of the respondents are in agreement with the statement having a backing support of 57.9%.

The second statement is that technical tender evaluation process is a better method than financial tender evaluation process. The findings showed; 5 (6.6%) of the respondents strongly disagree, 7 respondents (9.2%) disagree, 18 (23.7%) of the respondents are neutral, 7 respondents (9.2%) agree and 39 respondents (51.3%) strongly agree with a mean and standard deviation of 3.8947 and 1.3123 respectively. With both the mean and standard deviation being higher than their comparable composites, it implies that most of the respondents are in agreement with the statement having a backing support of 60.5%.

The third statement is that implementation of urban road projects is largely dependent on the contractor selected for the project. The findings showed; 5 (6.6%) of the respondents strongly disagree, 6 (7.9%) of the respondents disagree, 2 (2.6%) of the respondents are neutral, 25 (32.9%) of the respondents agree and 38 respondents (50%) strongly agree having a mean and standard

deviation of 4.1184 and 1.1996 respectively. With both the mean and standard deviation being higher than their comparable composites, it implies that most respondents 82.9% agreeingly support the statement.

4.6.1 Correlation between Planning for Project Procurement Procedures and Implementation of Urban Road Projects

The researcher used correlation analysis- Pearson Correlation Coefficient, to determine the relationship between project procurement procedures and implementation of urban road projects. This analysis was used to assist the researcher in determining the strength and direction of the relationship between project procurement procedures and implementation of urban road projects. The correlation analysis results are presented in Table 4.11.

Table 4. 11: Correlation Analysis between Planning for Project Procurement Procedures and Implementation of Urban Road Projects

Variable		Planning for Project Procurement Procedures	Implementation of Urban Road Projects
Planning for Project Procurement Procedures	Pearson Correlation	1	0.564**
	Sig. (2-Tailed)		0.000
	n	76	76
Implementation of Urban Road Projects	Pearson Correlation	0.564**	1
	Sig. (2-Tailed)	0.000	
	n	76	76

**. Correlation is significant at the 0.05 level (2-Tailed)

Table 4.11 shows the correlation analysis results between planning for project procurement procedures and implementation of urban road projects. The results showed that there is a moderate significant positive correlation of 0.564 between planning for project procurement procedures and implementation of urban road projects with a P- value of 0.000 which is less than the significance level of 0.05. This shows that planning for project procurement procedures influences implementation of urban road projects.

4.6.2 Regression Analysis of Planning for Project Procurement Procedures and Implementation of Urban Road Projects

Regression analysis was carried out to determine the relationship between planning for project procurement procedures and implementation of urban road projects. Hypothesis was tested using simple linear regression model to satisfy the hypothesis formulated in regard to the first research objective;

2. **H_0**: Planning for project procurement procedures has no significant influence on the effective implementation of urban roads projects in Nairobi County.
   H_1: Planning for project procurement procedures has a significant influence on the effective implementation of urban roads projects in Nairobi County.

The second research hypothesis was tested using the model;

$y= \alpha+\beta_2 X_2+e$

y= implementation of urban road projects

α= constant,

β_2= beta coefficient,

X_2= Planning for project procurement procedures

e= error term

Table 4. 12: ANOVA for Planning for Project Procurement Procedures and Implementation of Urban Road Projects

Factor	Sum of Squares	df	Mean Square	F	Sig.
Regression	21.451	1	21.451	34.499	0.000[b]
Residual	46.011	74	0.622		
Total	**67.462**	**75**			

a. Dependent Variable: Implementation of Urban Road Projects.

b. Predictors: (Constant) Planning for Project Procurement Procedures

Table 4.12 reflects the analysis of variance that was used to find the goodness of fit of the regression model. It indicates that the regression model predicts the dependent variable significantly well as it established that the F-significance value 0.000 was less than 0.01 ($p<0.01$).

Table 4. 13: Model Summary for Planning for Project Procurement Procedures and Implementation of Urban Road Projects

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.564[a]	0.318	0.309	0.78853

a. Predictors (Constant), Planning for Project Procurement Procedures

Table 4.13 gives the values for R and R^2. R value represents the correlation which is 0.564 which indicates a moderate degree of correlation and the R^2 value demonstrates how much of the total variation in implementation of urban road projects, can be explained by planning for project procurement procedures. In this case, 31.8% that can be explained which is moderate.

Table 4. 14: Coefficients of Planning for Project Procurement Procedures and Implementation of Urban Road Projects

	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
Variables	**B**	**Std. Error**	**Beta**		
(Constant)	0.712	0.450		1.583	0.118
Planning for Project Procurement Procedures	0.828	0.141	0.564	5.874	0.000

a. **Dependent Variable**: Implementation of Urban Road Projects

Table 4.14 indicated that the standardized Beta value of 0.564 shows that a unit increase of planning for project procurement procedures contributed to 56.4% rise in the variations of implementation of urban road projects. Thus, the regression equation is presented as;

Implementation of urban road projects= 0.712+0.828 (planning for project procurement procedures) + e; t=5.874; $p<0.05$. The findings established that the p value=0.000 which is represents $p<0.05$ hence, the null hypothesis of the study was rejected.

The findings of the study revealed that the predictor variable planning for project procurement procedures moderately influence implementation of urban road projects in KURA, Nairobi County. These findings (R^2 =0.318) can be used to explain 31.8% of the variations in the response variable implementation of urban road projects.

4.7 Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects

The third objective wanted to establish how planning for project stakeholder engagement influences the implementation of urban road projects in Nairobi County. To assess the influence, the respondents were required to give their opinion on the extent of agreement with the statements provided using a Likert scale format. The five-point scale was used to indicate; 1 signified strongly disagree, 2 signified disagree, 3 signified neutral, 4 signified agree and 5 signified strongly agree. The results are displayed in table 4.15

Table 4. 15: Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects

Statement	1 F	2 F	3 F	4 F	5 F	n	Mean	Standard Deviation
1.Having a stakeholders' communication plan greatly helps in better implementation of urban road projects	3	0	0	28	45	76	4.4737	0.8559
2.Frequency of stakeholder engagement influences the successful implementation of urban road projects	3	5	21	30	17	76	3.6974	1.0201
3.Public participation greatly influences the implementation of urban road projects	0	3	13	18	42	76	4.3026	0.8947
4.Projects that have embraced public participation have been well received and less challenges experienced when implementing the said projects	3	2	10	8	53	76	4.3947	1.0718
Composite							**4.2171**	**0.7941**

The first statement is having a stakeholders' communication plan greatly helps in better implementation of urban road projects. The findings showed; 3 respondents (3.9%) strongly disagree, none (0%) disagree, none (0%) are neutral, 28 respondents (36.8%) agree and 45 respondents (59.2%) strongly agree with a mean and standard deviation of 4.4737 and 0.8559 respectively. With both the mean and standard deviation being higher than their comparable composites, it implies that most of the respondents are in agreement with the statement having a backing support of 96%.

The second statement is that frequency of stakeholder engagement influences the successful implementation of urban road projects. The finding showed; 3 (3.9%) of the respondents strongly disagree, 5 (6.6%) of the respondents disagree, 21 (27.6%) of the respondents have a neutral opinion, 30 respondents (39.5%) agree and 17 respondents (22.4%) strongly agree. On comparing the statements' mean of 3.6974 with the composite mean of 4.2171, it was evident that the respondents views on the subject matter negatively contributed to the outcome of the variable. Further, a comparison of the statements' standard deviation of 1.0201 with the composite standard deviation of 0.7941 showed that the respondents had collectively convergent views with the subject matter. Despite this, the general consensus indicates that most respondents 61.9% agree with the statement.

The third statement is public participation greatly influences the implementation of urban road projects. The findings showed; 3 respondents (3.9%) strongly disagree, none (0%) disagree, 13 respondents (17.1%) are neutral, 18 respondents (23.7%) agree and 42 respondents (55.3%) strongly agree with the statement with a mean and standard deviation of 4.3026 and0.8947 respectively. With both the mean and standard deviation being higher than their comparable composites, it implies that most respondents agree with the statement having a backing support of 79%.

The fourth statement is projects that have embraced public participation have been well received and less challenges experienced when implementing the said projects. The findings showed; 3 respondents (3.9%) strongly disagree, 2 respondents (2.6%) disagree, 10 respondents (13.2%) are neutral, 8 respondents (10.5%) agree and 53 respondents (69.7%) strongly agree with a mean and standard deviation of 4.3947 and 1.0718 respectively. With both the mean and standard deviation being higher than their comparable composites, it implies that most respondents are in agreement having a backing support of 80.2%.

4.7.1 Correlation Analysis between Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects

The researcher used correlation analysis- Pearson Correlation Coefficient, to determine the relationship between planning for project stakeholder engagement and implementation of urban road projects. This analysis was used to assist the researcher in determining the strength and

direction of the relationship between planning for project stakeholder engagement and implementation of urban road projects. The correlation analysis results are presented in Table 4.16.

Table 4. 16: Correlation Analysis between Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects

Variable		Planning for Project Stakeholder Engagement	Implementation of Urban Road Projects
Planning for Project Stakeholder Engagement	Pearson Correlation	1	0.437**
	Sig. (2-Tailed)		0.000
	n	76	76
Implementation of Urban Road Projects	Pearson Correlation	0.437**	1
	Sig. (2-Tailed)	0.000	
	n	76	76

**. Correlation is significant at the 0.05 level (2-Tailed)

Table 4.16 shows the correlation analysis results between planning for project stakeholder engagement and implementation of urban road projects. The results showed that there is a moderate significant positive correlation of 0.437 between planning for project stakeholder engagement and implementation of urban road projects with a P- value of 0.000 which is less than the significance level of 0.05. This shows that planning for project stakeholder engagement influences implementation of urban road projects.

4.7.2 Regression Analysis for Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects

Regression analysis was done to determine the relationship between the planning for project stakeholder engagement and implementation of urban road projects. Hypothesis was tested using simple linear regression model to satisfy the hypothesis formulated in regard to the first research objective;

3. **H_0**: Planning for project stakeholder engagement has no significant influence on the effective implementation of urban roads projects in Nairobi County.

   H_1: Planning for project stakeholder engagement has a significant influence on the effective implementation of urban roads projects in Nairobi County.

The second research hypothesis was tested using the model;

$y= \alpha+\beta_3X_3+e$

y= implementation of urban road projects

α= constant,

β_3= beta coefficient,

X_3= Planning for project stakeholder engagement

e= error term

Table 4. 17: ANOVA for Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects

Factor	Sum of Squares	df	Mean Square	F	Sig.
Regression	12.861	1	12.861	17.430	0.000[b]
Residual	54.601	74	0.738		
Total	**67.462**	**75**			

a. Dependent Variable: Implementation of Urban Road Projects.

b. Predictors: (Constant) Planning for Project Stakeholder Engagement

Table 4.17 reflects the analysis of variance that was used to find the goodness of fit of the regression model. It indicates that the regression model predicts the dependent variable significantly well as it established that the F-significance value 0.000 was less than 0.01 ($p<0.05$).

Table 4. 18: Model Summary for Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.437[a]	0.191	0.180	0.8599

a. Predictors (Constant), Planning for Project Stakeholder Engagement

Table 4.13 gives the values for R and R^2. R value indicates the simple correlation which is 0.437 which indicates a high degree of correlation and the R^2 value indicates how much of the total variation in implementation of urban road projects, can be elucidated by Planning for project stakeholder engagement. In this case, 19.1% that can be explained which is low.

Table 4. 19: Coefficients of Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects

	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
Variables	**B**	**Std. Error**	**Beta**		
(Constant)	1.099	0.536		2.051	0.044
Planning for Project Stakeholder Engagement	0.521	0.125	0.437	4.175	0.000

a. **Dependent Variable**: Implementation of Urban Road Projects

Table 4.19 indicated that the standardized Beta value of 0.437 shows that a unit rise of planning for project stakeholder engagement contributed to 43.7% rise in the variations of implementation of urban road projects. Thus, the regression equation is presented as;

Implementation of urban road projects= 1.099+0.521 (planning for project stakeholder engagement) + e; t=4.175; p<0.05. The findings established that the p value=0.000 which is represents p<0.05 hence, the null hypothesis of the study was rejected.

The findings of the study revealed that the predictor variable planning for project stakeholder engagement had a low influence implementation of urban road projects in KURA, Nairobi County. These findings (R^2 =0.191) can be used to explain 19.1% of the variations in the response variable implementation of urban road projects.

4.8 Planning for Project Risk Management and Implementation of Urban Road Projects

The last objective wanted to examine how planning for project risk management influences the implementation of urban road projects in Nairobi County. To examine the influence, the respondents were required to give their opinion on the level of agreement with the statement provided using a Likert scale format. The five-point scale was used to indicate; 1 signified strongly disagree, 2 signified disagree, 3 signified neutral, 4 signified agree and 5 signified strongly agree. The findings are displayed in table 4.20

Table 4. 20: Planning for Project Risk Management and Implementation of Urban Road Projects

Statement	1 F	2 F	3 F	4 F	5 F	n	Mean	Standard Deviation
1.Having a risk management plan increases the rate of having successful implemented urban road projects	0	8	6	26	36	76	4.1842	0.9759

The first statement is having a risk management plan increases the rate of having successful implemented urban road projects. The findings showed; none (0%) of the respondents strongly disagree, 8 (10.5%) of the respondents disagree, 6 (7.9%) of the respondents are neutral, 26 respondents (34.2%) agree and 36 respondents (47.4%) strongly agree having a mean and standard deviation of 4.1842 and 0.9759 respectively. The findings imply that most respondents 81.6% are in agreement with the statement.

Further the researcher conducted descriptive analysis other questions and the findings are presented in Table 21 and 22

Table 4. 21: Planning for Project Risk Management-Risk Response Methods

Variable	Frequency	Percentage	Cumulative Frequency
Risk Response			
Risk avoidance	42	55.3	42
Risk transference	0	0	42
Risk acceptance	9	11.8	51
Risk sharing	25	32.9	76
Risk escalation	0	0	76
Total	**76**	**100.0**	

The analysis of the risk response methods revealed that; 42 (55.3%) of the respondents selected risk avoidance, none (0%) of the respondents selected risk transference, 9 (11.8%) of the respondents selected risk acceptance, 25 (32.9%) of the respondents selected risk sharing and none (0%) of the respondents selected risk escalation method. The findings distinctively show that the modal risk response method is risk avoidance.

Table 4. 22: Planning for Project Risk Management- Risk Occurrence

Variable	Frequency	Percentage	Cumulative Frequency
Risk Occurrence			
No chance	0	0	0
Low chances	14	18.4	14
Moderate chances	40	52.6	54
High chances	21	27.6	75
Very high chances	1	1.3	76
Total	**76**	**100.0**	

The analysis of the chances of risk occurrence revealed that; none (0%) of the respondents selected no chance of occurrence of risk, 14 (18.4%) of the respondents selected risk transference, 9 (11.8%) of the respondents selected low chances of risk occurrence, 40 (52.6%) of the respondents selected moderate chances of risk occurrence, 21 (27.6%) of the respondents selected high chances of risk occurrence and 1 (1.3%) of the respondents selected very high chances of risk occurrence. The findings distinctively show that the modal chances of risk occurrence are moderate.

4.8.1 Correlation Analysis between Planning for Project Risk Management and Implementation of Urban Road Projects

The researcher used correlation analysis- Pearson Correlation Coefficient, to determine the relationship between planning for project risk management and implementation of urban road projects. This analysis was used to assist the researcher in determining the strength and direction of the relationship between planning for project risk management and implementation of urban road projects. The correlation analysis results are presented in Table 4.23.

Table 4. 23: Correlation Analysis between Planning for Project Risk Management and Implementation of Urban Road Projects

Variable		Planning for Project Risk Management	Implementation of Urban Road Projects
Planning for Project Risk Management	Pearson Correlation	1	0.254
	Sig. (1-Tailed)		0.013
	n	76	76
Implementation of Urban Road Projects	Pearson Correlation	0.254	1
	Sig. (1-Tailed)	0.013	
	n	76	76

*. Correlation is significant at the 0.05 level (1-Tailed)

Table 4.23 shows the correlation analysis results between planning for project risk management and implementation of urban road projects. The results showed that there is a low significant positive correlation of 0.254 between project risk management and implementation of urban road projects with a P- value of 0.013 which is less than the significance level of 0.05. This shows that project risk management influences implementation of urban road projects.

4.8.2 Regression Analysis for Planning for Project Risk Management and Implementation of Urban Road Projects

Regression analysis was carried out to determine the relationship between planning for project risk management and implementation of urban road projects. Hypothesis was tested using simple linear regression model to satisfy the hypothesis formulated in regard to the first research objective;

4. **H_0**: Planning for project risk management has no significant influence on the implementation of urban roads projects in Nairobi County.

   H_1: Planning for project risk management has a significant influence on the effective implementation of urban roads projects in Nairobi County.

The second research hypothesis was tested using the model;

$y= \alpha+\beta_4 X_4+e$

y= implementation of urban road projects

α= constant,

β_4= beta coefficient,

X_4= Planning for project risk management

e= error term

Table 4. 24: ANOVA for Planning for Project Risk Management and Implementation of Urban Road Projects

Factor	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.368	1	4.368	5.123	0.027[b]
Residual	63.094	74	0.853		
Total	**67.462**	**75**			

a. Dependent Variable: Implementation of Urban Road Projects.

b. Predictors: (Constant) Planning for Project Risk Management

Table 4.24 reflects the analysis of variance that was used to find the goodness of fit of the regression model. It indicates that the regression model predicts the dependent variable significantly well as it established that the F-significance value 0.027 was less than 0.05 ($p<0.05$).

Table 4. 25: Model Summary for Planning for Project Risk Management and Implementation of Urban Road Projects

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.254[a]	0.065	0.052	0.92337

a. Predictors (Constant), Planning for Project Risk Management

Table 4.13 gives the values for R and R^2. R value represents the simple correlation which is 0.254 which indicates a low degree of correlation and the R^2 value indicates how much of the total variation in implementation of urban road projects, can be elucidated by planning for project risk management. In this case, 6.5% that can be elucidated is very low.

Table 4. 26: Coefficients of Planning for Project Risk Management and Implementation of Urban Road Projects

	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
Variables	**B**	**Std. Error**	**Beta**		
(Constant)	2.123	0.530		4.006	0.000
Planning for Project Risk Management	0.370	0.164	0.254	2.263	0.027

a. **Dependent Variable**: Implementation of Urban Road Projects

Table 4.26 indicated that the standardized Beta value of 0.254 shows that a unit increase of planning for project risk management contributed to 25.4% increase in the variations of implementation of urban road projects. Thus, the regression equation is presented as;

Implementation of urban road projects= 2.123+0.370 (planning for project risk management) + e; t=2.263; p<0.05. The findings established that the p value=0.027 which is represents p<0.05 hence, the null hypothesis of the study was rejected.

The findings of the study revealed that the predictor variable planning for project risk management had a low influence implementation of urban road projects in KURA, Nairobi County. These findings (R^2 =0.065) can be used to explain 6.5% of the variations in the response variable implementation of urban road projects.

4.9 Summary of the Results of Hypotheses

The summary of the hypothesis testing is presented on Table 27.

Objective	Hypotheses	Model for Hypothesis testing	Results	Results Interpretation
To assess the influence of project resource planning on the implementation of urban roads projects in Nairobi County.	**H_0**: Project resource planning has no significant influence on the implementation of urban roads projects in Nairobi County.	$y= \alpha+\beta_1X_1+e$ y= implementation of urban road projects α= constant, β_1= beta coefficient, X_1= Project resources planning e= error term	R= 0.352 R^2= 0.124 β_1= 0.352 t= 3.240 $F_{(1,75)}$ =10.498 P<0.05	Reject H_0 **Accept H_1**

To determine how planning for project procurement procedures influences implementation of urban roads projects in Nairobi County.	**H_0**: Planning for project procurement procedures has no significant influence the implementation of urban roads projects in Nairobi County.	$y= \alpha+\beta_2X_2+e$ y= implementation of urban road projects α= constant, β_2= beta coefficient, X_2= Planning for project procurement procedures e= error term	R= 0.564 R^2= 0.318 B_2= 0.564 t= 5.874 $F_{(1,75)} = 34.499$ P<0.05	Reject H_0 **Accept H_1**
To establish how planning for project stakeholder engagement influences implementation of urban roads projects in Nairobi County.	**H_0**: Planning for project stakeholder engagement has no significant influence the implementation of urban roads projects in Nairobi County.	$y= \alpha+\beta_3X_3+e$ y= implementation of urban road projects α= constant, β_3= beta coefficient, X_3= Stakeholder engagement e= error term	R= 0.437 R^2= 0.191 B_3= 0.437 t= 4.175 $F_{(1,75)} = 17.430$ P<0.05	Reject H_0 **Accept H_1**
To examine the influence of project risk management on the effective implementation of urban roads projects in Nairobi County.	**H_0**: Project risk management has no significant influence on the implementation of urban roads projects in Nairobi County.	$y= \alpha+\beta_4X_4+e$ y= implementation of urban road projects α= constant, β_4= beta coefficient, X_4= Project risk management e= error term	R= 0.254 R^2= 0.065 B_4= 0.254 t= 2.263 $F_{(1,75)} = 5.123$ P<0.05	Reject H_0 **Accept H_1**

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter covers the findings summary of each independent variable- project resource planning, planning for project procurement procedures, planning for project stakeholder engagement and planning for project risk management, in relation to the dependent variable- implementation of urban road projects. The conclusions of the study are then drawn, recommendations put forward and the suggestion of areas for further research are listed.

5.2 Summary of the Findings

The major findings that were established in chapter four during data analysis and interpretation are summarized under sections of each independent variable with the dependent variable.

5.2.1 Project Resource Planning and Implementation of Urban Road Projects

Project resource planning is the independent variable under the first objective of this study. Descriptive analysis was used in establishing the means and standard deviations of the statement responses and compared to their respective composite mean and standard deviation of 4.0285 and 0.6368 respectively. It was established that most of the respondents were in agreement with the statements. Further, the hypothesis was tested using simple linear regression analysis and the results were; $R= 0.352$, $R^2= 0.124$, $\beta_1= 0.352$, $t= 3.240$, $F_{(1,75)} =10.498$, $P<0.05$. From the findings, it was revealed that 12.4% of the variability in the dependent variable- implementation of urban road projects can be explained by the dependent variable- project resource planning. Thus, the null hypothesis was rejected and it was concluded that project resource planning has a significant influence on implementation of urban road projects, although low.

5.2.2 Planning for Project Procurement Procedures and Implementation of Urban Road Projects

Planning for project procurement procedures is the independent variable under the second objective of this study. Descriptive analysis was used in establishing the means and standard deviations of the statement responses and compared to their respective composite mean and standard deviation of 3.125 and 0.6461 respectively. It was established that most of the respondents were in agreement with the statements. Additionally, hypothesis testing was done using simple

linear regression analysis and the results were; R= 0.564, R^2= 0.318, B_2= 0.564, t= 5.874, $F_{(1,75)}$ = 34.499, P<0.05. From the findings, it was evident that 31.8% of the variability in the dependent variable- implementation of urban road projects can be explained by the dependent variable- planning for project procurement procedures. Thus, the null hypothesis was rejected and it was concluded that planning for project procurement procedures have a moderate significant influence on implementation of urban road projects.

5.2.3 Planning for Project Stakeholder Engagement and Implementation of Urban Road Projects

Planning for project stakeholder engagement is the independent variable under the third objective of this study. Descriptive analysis was used in establishing the means and standard deviations of the statement responses and compared to their respective composite mean and standard deviation of 4.2171 and 0.7941respectively. It was established that most of the respondents were in agreement with the statements. In addition, hypothesis testing conducted using simple linear regression analysis and the results were; R= 0.437, R^2= 0.191, B_3= 0.437, t= 4.175, $F_{(1,75)}$ = 17.430, P<0.05. From the findings, it was palpable that 19.1% of the variability in the dependent variable- implementation of urban road projects can be explained by the dependent variable- planning for project stakeholder engagement. Thus, the null hypothesis was rejected and it was concluded that planning for project stakeholder engagement has a low significant influence on implementation of urban road projects.

5.2.4 Planning for Project Risk Management and Implementation of Urban Road Projects

Planning for project risk management is the independent variable under the fourth objective of this study. Descriptive analysis was used in establishing the means and standard deviations of the statement responses and it was established that most respondents agree that having a risk management plan increases the rate of having successful implementation of urban road project as its supported by 81.6% of the responses. Also, most of the respondents are of the opinion that risk avoidance is the most used risk response method as there are moderate chances of risk occurring during implementation of urban road projects. Additionally, hypothesis testing was done using simple linear regression analysis and the results were; R= 0.254, R^2= 0.065, B_4= 0.254, t= 2.263, $F_{(1,75)}$ = 5.123, P<0.05. From the findings, it was evident that only 6.5% of the variability in the dependent variable- implementation of urban road projects can be explained by the dependent

variable- planning for project risk management. Thus, the null hypothesis was rejected and it was concluded that planning for project procurement procedures have a low significant influence on implementation of urban road projects.

5.3 Conclusion of the Study

The purpose of the study was to establish the influence of project planning on implementation of urban roads projects in Kenya: A case of Kenya Urban Road Authority Nairobi County. The first objective sought to assess the influence of project resource planning on the implementation of urban roads projects in Nairobi County. From the research findings, it was clear that there is a low positive correlation relationship of 0.352 between project resource planning and implementation of urban road projects. The indicators; project resource management plan, project time schedules, project payment schedules have an effect on the implementation of urban road projects in Nairobi County.

The second objective sought to determine how planning for project procurement procedures influences the implementation of urban roads projects in Nairobi County. According to the study findings, it was evident that there is a moderate positive correlation relationship of 0.564 between planning for project procurement procedures and implementation of urban road projects. The indicators; tendering procedures, tender evaluation procedures and contractor selection were established to strongly influence the implementation of urban road projects in Nairobi County.

The third objective sought how planning for project stakeholder engagement influences the implementation of urban roads projects in Nairobi County. As per the study findings it was apparent that there is a moderate positive correlation relationship of 0.437 between planning for project stakeholder engagement and implementation of urban road projects. The indicators; stakeholders' communication plan, frequency of engagement, extent of public participation was established to moderately influence the implementation of urban road projects in Nairobi County.

The fourth objective sought to examine how planning for project risk management influences the implementation of urban roads projects in Nairobi County. The study findings revealed that there is low positive correlation relationship of 0.254 between planning for project risk management and implementation of urban road projects. The indicators; risk management plan, frequency of occurrence of risks, risk response methods employed were established to weakly influence the implementation of urban road projects in Nairobi County.

5.4 Recommendations

The research study made some recommendations based on the study findings. The first one being, the study revealed that project planning influences implementation of urban road projects. Therefore, it's vital to always allocate sufficient resources; time, finances and manpower for the planning processes before embarking on the implementation of any urban road project in Kenya. Also, project constraints should always be keenly planned for so as to avoid resource overruns during implementation of urban road projects in Kenya.

Additionally, stakeholder engagement should always be a priority with Kenya Urban Road Authority when planning for urban road projects as it helps in having proper frameworks and channels for scoping issues during project implementation. Finally, despite risk avoidance being the most used risk response method, there is need to put up better mechanisms and sufficient risk response frameworks to help mitigate the effects of occurrence of any risk in regards to urban road projects.

5.5 Suggestions for Further Research

The study made the following suggestions for further studies;

1. The influence of Relocation Action Plan as part of stakeholder engagement strategy in ensuring successful implementation of urban infrastructure projects in Kenya.
2. Factors influencing low uptake of implemented economic stimulus projects like urban markets despite there being proper infrastructure in Kenya.
3. Factors contributing to the low rate of environmental laws and acts compliance when urban roads are being implemented in Kenya.

REFERENCES

Adak, P. (2019). *Urban roads planning and development in Kenya- The opportunity for planners.* Nairobi: Kenya Urban Roads Authority.

ADB. (2006). *Completion Report. India: Karnataka Urban Infrastructure Development Project.* 6 ADB Avenue, Mandaluyong City 1550, Metro Manila, Philippines: Asian Development Bank.

Adom, D., Hussein, E. K., & Adu-Agyem, J. (2018). Theoretical and conceptual framework: Mandatory ingredients of Quality Research. *International journal of Scientific Research*, 7(1):438-441.

AfDB. (2018). *Annual Report.* African Development Bank Group. https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/AFDB_Annual_Report_2018_and_Appendices_-English.pdf.

Albalate, D., & Bel, G. (2009). What Local Policy Makers Should Know about Urban Road Charging: Lessons from Worldwide Experience. *Public Administration Review*, PP 962-975.

Allen, M. (2017). *Population/ Sample.* Retrieved from SAGE Research Methods: https://methods.sagepub.com/reference/the-sage-encyclopedia-of-communication-research-methods/i10949.xml

Anis, R. (2018). The 100% Renewable Energy Metropolis: Governing the Design of Cities for Renewable Energy Infrastructures. In A. Radzi, *Urban Energy Transition. Renewable Strategies for Cities and Regions (Second Edition).* Elsevier Ltd.

Auditor-General. (2017). *Report of the Auditor General on the Financial statements for Kenya Urban Roads Authority for the year ended 30th June 2017.* Nairobi: Office of the Auditor General.

Badewi, A. (2016). The impact of project management (PM) and benefits management (BM) practices on project success: Towards developing a project benefits governance framework. *International Journal of Project Management*, 34: 761-778.

Barker, S., & Cole, R. (2007). *Brilliant project management: What the best project managers know, say and do.* Harlow, UK: Pearson Prentice Hall Business.

Beroe. (2021). *Procurement: The Definitive Guide.* Retrieved from Beroe Advantage Procurement: https://www.beroeinc.com/procurement/

Borg, D., & Prigmore, C. (2019). *FY 2019-2020 General Operating Budget.* Princeton.

Bourne, L. (2010). *Project relationships and the stakeholder circle.* Montreal: Stakeholder Management PTY Limited.

Bulle, H. A. (2015). Influence of strategic planning on perfromance of urban road projects in Kenya; A case of Kenya Urban Roads Authority. *The Strategic Business and Change journal of Management*, PP 1286-1313.

Clayton, M. (2020, March 9). *Definition of project management.* Retrieved from OnlinePM Courses: https://onlinepmcourses.com/definition-of-project-management/

Construction index. (2020, August 12). Retrieved from South Africa readies 'shovel ready' projects: https://www.theconstructionindex.co.uk/news/view/south-africa-readies-shovel-ready-projects

Design-Buildings Ltd. (2020, September 1). *Open tendering for construction works.* Retrieved from Deigning Building Wiki: https://www.designingbuildings.co.uk/wiki/Open_tendering_of_construction_works

(2018). *Economic Survey* . Nairobi: Kenya National Bureau of Statistics.

Interact. (2015). *Project Implementation.* Retrieved from Sharing Expertise: file:///C:/Users/Envy/Downloads/PMH%205%20151214%20Project%20implementation.pdf

Johanson, G. A., & Brooks, G. P. (2009). *Initial scale development: sample size for pilot studies.* Education and psychological measurement.

Kagume, J., & Wamalwa, N. (2018). *Public Procurement in Kenya: Analysis of the Auditor General's Report.* Nairobi: Institute of Economic Affairs.

Kenya Roads Act, No. 2 of 2007 (2007).

Kiiru, H. W. (2015). *Public procurement systems and its influence on the building contract performance during project implementation; A case of Nairobi County.* Nairobi: Jomo Kenyatta University of Agriculture and Technology Repository.

Kogi, B. W., & Were, S. (2017). Factors affecting cost overruns in construction projects. A case of Kenya National Highways Authority. *International Journal of Project Management*, 1(10):167-184, 2017.

Kubai, E. (2019). Reliability and Validity of Research Instruments. *NMK conference.* UNICAF University - Zambia.

Kukreja, S. (2020). *The Triple Constraint in Project Management: Time, Scope & Cost.* Retrieved from Management Study HQ: https://www.managementstudyhq.com/the-project-management-triangle.html

Kumari, K. S., & Vikranth, J. (2012). A Study On Resource Planning In Highway Construction Projects. *International Journal of Engineering Research and Applications (IJERA) ISSN: 2248-9622*, pp.1960-1967.

Luka, R. N. (2016). *Influence of public procurement practices on road construction projects implementation; A case of Kenya Urban Roads Authority Machakos County, Kenya.* Nairobi: University of Nairobi Repository.

Luusa, E. (2019). *Factors influencing implementation of street lighting projects in Kenya. A case of Machakos County.* Nairobi : Unpublished research project report submitted for the partial fulfillment of requirement for the award of Masters degree in Project planning and Management of the University of Nairobi.

Lynch, J. (2021). *Request for proposals and Request for quotation*. Retrieved from The Procurement Classroom: https://procurementclassroom.com/request-for-quotations/

Mandala, E. (2018). *Influence of stakeholder's involvement in project management on the performance of road construction projects in Kenya; A case of Bondo Sub-county, Siaya County.* Nairobi: University of Nairobi Repository.

Mayende, C. W. (2020). *Project management and performance of rural road construction projects in Machakos County.* Nairobi: Kenyatta University Repository.

Mbachu, J., & Nkando, R. (2017). Factors constraining successful building project implementation in South Africa. *Construction Management and Economics*, 25(1); 39-54.

McLeod, S. (2018). *Questionnaire: Definition, Examples, Design and Types.* Retrieved from Simply Psychology: https://www.simplypsychology.org/questionnaires.html

Mishra, A. K., & Adhikari, R. (2019). *Urban roads construction risk management in Shiddharthanagar Municipality, Rupandehi, Nepal.* Nepal: Lumbini Engineering College Repository.

Mugenda, O. M., & Mugenda, A. G. (2003). *Research Methids, Quantitative and Qualitative Approaches.* Nairobi: ACT.

Mukherjee, M. (2017). A Review of Research Design. *International Journal of Advanced Engineering and Management, Technical and Scientific Publisher*, 2 (3), pp.56-59.

Muktar , A. O., & Kimutai, G. (2019). Critical success factors on implementation of road projects in Wajir county. *International Academic Journal of Information Sciences and Project Management*, pp. 73-104.

Murithi, S. H., Makokha, E. N., & Otieno, C. (2017). Factors affecting timely completion of public construction projects in Trans-Nzoia County. *International Journal of Scientific and Research Publications*, Vol 7, Issue 4.

Mwelu, N., Davis, P., Yongjian, K., Watundu, S., & Jefferies, M. (2019). Success factors for implementing Uganda's public road construction projects. *Internation journal of cosntruction management*.

Nassiumas, R. (2014). *Sampling Size and Proportions Formulae*. Cork Ireland: Cengage Learning.

Ndunda, A. N., Paul, D. N., & Mbura, M. K. (2017). Influence of stakeholder activities on implementation of rural road projects in Machakos County. *International Academic Journal of Information Sciences and Project Management*, Volume 2, Issue 2, pp. 1-20.

Nösel, I. (2020, 12 15). *Appvizer.* Retrieved from 4 Types of Project Resources and why they are so important: https://www.appvizer.com/magazine/operations/project-management/project-resources

O'Connor, S. W. (2020, March 25). *Northeastern University Graduate Programs.* Retrieved from The Project Risk Management Process / 5 Tips for Success: https://www.northeastern.edu/graduate/blog/project-risk-management

OEDC. (2018). *Economic Outlook for Southeast Asia, China and India.* Paris: OECD Publishing.

Okate, A., & Kakade, V. (2019). Risk Management in Road Construction Projects: High Volume Roads. *Proceedings of Sustainable Infrastructure Development & Management (SIDM) 2019.* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3375904.

Okeyo, M. P. (2015). Effects of Delayed Payment of Contractors on the Completion of Infrastuctural projects. *A Chinese Business Review*, 7(1), 325-336.

Omondi, E. F. (2017). *Influence of Triple Constraint Management on Completion of Non-Governmental Organizations Water Sanitation and Hygiene (Wash) Projects in Nakuru County, Kenya.*

Onenga, L. M., Miroga, J., & Otinga, H. N. (2020). Determinants of timely completion of road construction projects in Kakamega county, Kenya. *The Strategic Journal of Business & Change Management.*, 7(2), 311 – 326.

Otaalo , G., Muchelule , Y., & Asinza, K. (2019). Effect of Risk Identification and Risk Analysis on Performance of Road Construction Projects in Kenya: A Case Study of Kakamega County . *International Journal of Social Science and Humanities Research*, PP 407-411.

Pinto, J. (2010). *Project Management: Achieving Competitive Advantage.* New Jersey: Pearson Education.

Planet Together. (2018, July 17). Retrieved from What is Materials Resource Planning (MRP II): https://www.planettogether.com/blog/what-is-materials-resource-planning

PMBOK guide. (2017). *A guide to the project management body of knowledge (PMBOK guide) Sixth edition.* Newtown Square, PA: Project Management Institute.

PMI. (2018). *The Five stages of a project life.* Retrieved from Project Management Institute Online: https://www.pmi.org/

PMI. (2021). *Cost Management.* Retrieved from Project Management Institute: https://www.pmi.org/learning/library/cost-management-9106

Project Management. (2020, June 16). Retrieved from What is Stakeholder Analysis?: https://project-management.com/what-is-stakeholder-analysis/

Project reserve. (2021). Retrieved from The effects of payment delays on sucessful implementation of road construction projects in Ghana; Case study of Ghana Highway Authority, Brong Ahafo region: https://www.projectreserve.com/2020/02/the-effects-of-payment-delays-on-the-successful-implementation-of-road-construction-projects-in-ghana-case-study-ghana-highway-authority-brong-ahafo-region.html

Ray, S. (2021, February 26). *Project Manager.* Retrieved from The Risk Management Process in Project Management: https://www.projectmanager.com/blog/risk-management-process-steps

Raza, A. (2016). *Wasa Plan to supply water to citizens rejected.* Lahore.

Rugenyi, F., & Bwisa, H. (2016). Effects of triple constraint on the management of projects in Nairobi. The project manger's perspective. *Strategic Journal of Business and Change Management*.

Schuurman, R. (2019, November 7). *The Value Maximizers.* Retrieved from Creating a Stakeholder Analysis: How do you do that?: https://medium.com/the-value-maximizers/creating-a-stakeholder-analysis-how-do-you-do-that-b2b8198ca6c

Sedmak, J. (2021, March 11). *Strategy Management Consulting.* Retrieved from What is Stakeholder Engagement, and Why is it Important for Strategic Planning?: https://www.smestrategy.net/blog/stakeholder-engagement-management-for-strategic-planning

Shabo, I. A. (2017). *Factors influencing implementation of county roads projects in Kenya. A case of Isiolo County.* Nairobi: Unpublished research project report submitted for the partial fulfillment for the requirement of the award for Masters degree of Arts in Project planning and management of the University of Nairobi.

Singh, D. R., & Chugh, G. (2016). Various Risks Involved in Highway Projects. *IJIRST – International Journal for Innovative Research in Science & Technology*, PP 131-135.

Stucki, M. (2015). *Policies for Sustainable Accessibility and Mobility in Urban Areas of Africa.* 1818 H Street, NW Washington D.C 20433 USA.: The International Bank for Reconstruction and Development / The World Bank Group.

Tremel, A. (2019, February 22). *Effective Time Management for Project Success.* Retrieved from PM- Project Management.com: https://project-management.com/effective-time-management-for-project-success/

United-Nations. (2019). *World urbanization prospects.* New York.

Van-der-Hoorn, B., & Whitty, S. (2015). Signs to dogma: A Heideggerian view of how artefacts distort the project world. *International Journal of Project Management*, 33: 1206-1219.

Van-Wyngaard, C. J. (2011). *Effective management of the triple constraint in project management through polarity management techniques - a refreshed perspective.* Johannesburg, S.A: M.Eng. dissertation, Eng. Mgmt. Program, Univ. of Johannesburg.

Wambui, D. N., Ombui, D., & Kagiri, D. (2015). Factors affecting the completion of road construction projects in Nairobi County; A case of Kenya Urban Roads Authority (KURA). *International Journal of Scientific and Research Publications*, PP 525-547.

Ward, J. A. (2003). The key project constraints: Relationships and tradeoffs. *Proceedings on 13th International Conference on Software Quality.* Dallas.

World- bank. (2017). *Local infrastructure development projects.*

World-Bank. (2018). *Egypt: Enabling private investments and commercial financing in infrastructure.* 1818 H Street NW, Washington DC: International Bank for Reconstruction and Development / The World Bank.

World-bank. (2020, April 20). *Understanding poverty- Urban development*. Retrieved from The World Bank: https://www.worldbank.org/en/topic/urbandevelopment/overview

Wrike. (2020). *What is Time Management in Project Management?* Retrieved from Project Management Guide: https://www.wrike.com/project-management-guide/faq/what-is-time-management-in-project-management/

Yamane, T. (1967). *Statistics, An Introductory Analysis, 2nd Ed.* New York: Harper and Row.

APPENDICES

Appendix I: Letter of Transmittal of Data

MILDRED NAGEMI,

P.O BOX 3799-00200,

NAIROBI, KENYA.

mildrednagemi@students.uonbi.ac.ke

Dear Respondents,

RE: PARTICIPATION IN RESEARCH

I am a graduate student at the University of Nairobi pursuing Masters of Arts in Project Planning and Management. I am carrying out research as a requirement for the award of the degree. The research is on influence of project planning on implementation of urban road projects in Kenya: A case of Kenya Urban Roads Authority, Nairobi Region. You have been selected and consequently sampled as part of the respondents.

I therefore humbly request you to participate in answering the questionnaire that will be circulated by providing your honest opinion on the study phenomenon.

I assure you that the information collected will be used solely for education purposes.

Thank you in advance.

Yours faithfully,

MILDRED NAGEMI.

Appendix II: Questionnaire for Kenya Urban Roads Authority Employees- Nairobi County

The purpose of this questionnaire is to collect information on the influence of project planning on implementation of urban road projects: A case Kenya Urban Roads Authority, Nairobi County. The collected data will be applied for academic purposes only and it is expected that findings will have a significant contribution to planning of urban road projects. Data collected will be handled with professionalism as well as confidentiality. Kindly provide your responses by ticking (✓) in the boxes provided after every question on this questionnaire. Do **NOT** write your name on this questionnaire.

SECTION A: DEMOGRAPHIC CHARACTERISTICS

1.Kindly indicate the category of your current work/ profession

Road Engineer ( ) Superintendent roads officer ( )

Road Inspector ( ) Urban planner ( )

Quantity surveyor ( ) Other ( )

2.What is your highest level of education?

High school or below ( ) Undergraduate degree ( )

College diploma ( ) Masters' degree and above ( )

3.What is you level of practice experience?

Less than 5 years ( ) 11- 15 years ( )

5- 10years ( ) Over 15 years ( )

4.What is your gender?

Male ( ) Female ( )

SECTION B: IMPLEMENTATION OF URBAN ROAD PROJECTS

5.Given below are various statements on implementation of urban road projects. Kindly indicate the extent of your agreement with each of these statements on how they relate with implementation of urban road projects. Use a scale of 1-5, where 1= Very low, 2= Low, 3= Moderate, 4= High and 5= Very high

	Number of projects

Statements	1	2	3	4	5
At what rate are urban road projects being implemented experiencing completion delays					
At what rate are urban road projects being implemented experiencing budget overruns					
At what rate are urban road projects failing to be completed or stalling					

SECTION C: PROJECT RESOURCE PLANNING

6.Given below are various statements on project resource planning in relation to implementation of urban road projects. Kindly indicate the extent of your agreement with each of these statements on how they relate with implementation of urban road projects. Use a scale of 1-5, where 1= strongly disagree and 5= strongly agree

Statements	1	2	3	4	5
Most urban road projects have resource management plans					
Having a resource management plan reduces the lags and delays in relation to availability of materials, labour and funds for a project on site					
Most projects experience delays and thus require an extension of time					
The availability of a works programme enables the projects to implemented better in terms of monitoring the timelines for the project					
When valuations and payments are conducted on time, there is a higher chance of the project being implemented to be more successful in terms of timely project delivery					
A defined payment schedule contributed positively to the delivery of a project					

SECTION D: PLANNING FOR PROJECT PROCUREMENT PROCEDURES

7. What procurement procedure is mostly used for urban road project

Open tendering ( ) Request for proposals ( )

Restrictive tendering ( ) Request for quotation ( )

Direct procurement ( )

8.Given below are various statements on planning for project procurement procedures in relation to implementation of urban roads projects. Kindly indicate the extent of your agreement with each of these statements on how they relate with implementation of road projects. Use a scale of 1-5, where 1= strongly disagree and 5= strongly agree

Statements	**1**	**2**	**3**	**4**	**5**
The type of procurement procedure can influence the successful implementation of urban road projects					
Technical tender evaluation process is a better method than financial tender evaluation process					
Implementation of urban road project is largely dependent on the contractor selected for the project					

SECTION E: PLANNING FOR PROJECT STAKEHOLDER ENGAGEMENT

9. Given below are various statements on planning for project stakeholder engagement in relation to implementation of urban road projects. Kindly indicate the extent of your agreement with each of these statements on how they relate with implementation of urban road projects. Use a scale of 1-5, where 1= strongly disagree and 5= strongly agree

Statements	**1**	**2**	**3**	**4**	**5**
Having stakeholder's communication plan greatly helps in better implementation of urban road projects					

Frequency of stakeholder engagement influences the successful implementation of urban road projects					
Public participation greatly influences the implementation of urban road projects					
Projects that have embraced public participation have been well received and less challenges experienced when implementing the said projects					

SECTION F: PLANNING FOR PROJECT RISK MANAGEMENT

10. Having a risk management plan increases the rate of having successful implemented urban road projects? Use a scale of 1-5, where 1= strongly disagree and 5= strongly agree

1	2	3	4	5

11. What risk response method is mostly preferred and used when dealing with the occurrence of risks associated to urban road projects?

Risk avoidance ( ) Risk sharing ( )

Risk transference ( ) Risk escalation ( )

Risk acceptance ( )

12. What are the chances for occurrence of risks associated with urban road projects?

No chance ( ) High chances ( )

Low chances ( ) Very high chances ( )

Moderate chances ( )

THANK YOU

Appendix III: Letter of Research Authorization

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/33/58

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

14th June, 2021

TO WHOM IT MAY CONCERN

RE: MILDRED NAGEMI LWANGA - REG NO: L50 /28238/2019

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

She is proceeding for research entitled ***"Influence of Project Planning on Implementation of Urban Roads Projects in Kenya: A Case of Kenya Urban Roads Authority, Nairobi Region."***

Any assistance given to her will be highly appreciated.

CAREN AWILLY
CENTRE ORGANIZER
NAIROBI LEARNING CENTRE

UNIVERSITY OF NAIROBI P.O. Box 30197 13 JUN 2021 NAIROBI NAIROBI LEARNING CENTRE

Appendix IV: NACOSTI Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **963759**

Date of Issue: **24/June/2021**

RESEARCH LICENSE

This is to Certify that Ms.. Mildred Nagemi Lwanga of University of Nairobi, has been licensed to conduct research in Nairobi on the topic: INFLUENCE OF PROJECT PLANNING ON IMPLEMENTATION OF URBAN ROADS PROJECTS IN KENYA: A CASE OF KENYA URBAN ROADS AUTHORITY, NAIROBI REGION for the period ending : 24/June/2022.

License No: **NACOSTI/P/21/11372**

963759

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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

Appendix V: An Introductory Letter to Kenya Urban Roads Authority

Thursday, July 1, 2021

REF: UON/ODeL/NLC/33/58

Director-General,
Kenya Urban Roads Authority (KURA),
Barabara Plaza, Mazao Rd., Off Airport South Rd,
P.O Box 41727-00100 GPO,
NAIROBI.

Attention: Director, Urban Roads Planning and Design (URPD)

Dear Sir,

RE: A RESEARCH STUDY FOR MASTER OF ARTS IN PROJECT PLANNING AND MANAGEMENT ON THE INFLUENCE OF PROJECT PLANNING ON IMPLEMENTATION OF URBAN ROADS PROJECTS IN KENYA: A CASE OF KENYA URBAN ROADS AUTHORITY, NAIROBI COUNTY

Request for a No Objection to undertake data collection using Questionnaire survey in the organization

The department of Open Learning, University of Nairobi is supervising a M.A research study on the influence of project planning on implementation of urban roads projects in Kenya: A case of Kenya Urban Roads Authority, Nairobi County. The student undertaking the research is Mildred Nagemi Lwanga, Registration number: L50/28238/2019.

As part of the study, the student is required to carry out a survey on the employee's opinions on project planning practices (project resource planning, project procurement procedures, project stakeholder engagement and project risk management) and how the influence the implementation of urban road projects within Nairobi County. The data collection will be carried out using questionnaires distributed among the organization's employees.

The purpose of this letter is to request a No Objection to undertake the survey and to commit to undertaking the survey with the utmost professionalism while observing minimal disruptions and ensuring the protection and confidentiality of sensitive data.

Thank you in advance for your kind consideration to this request.

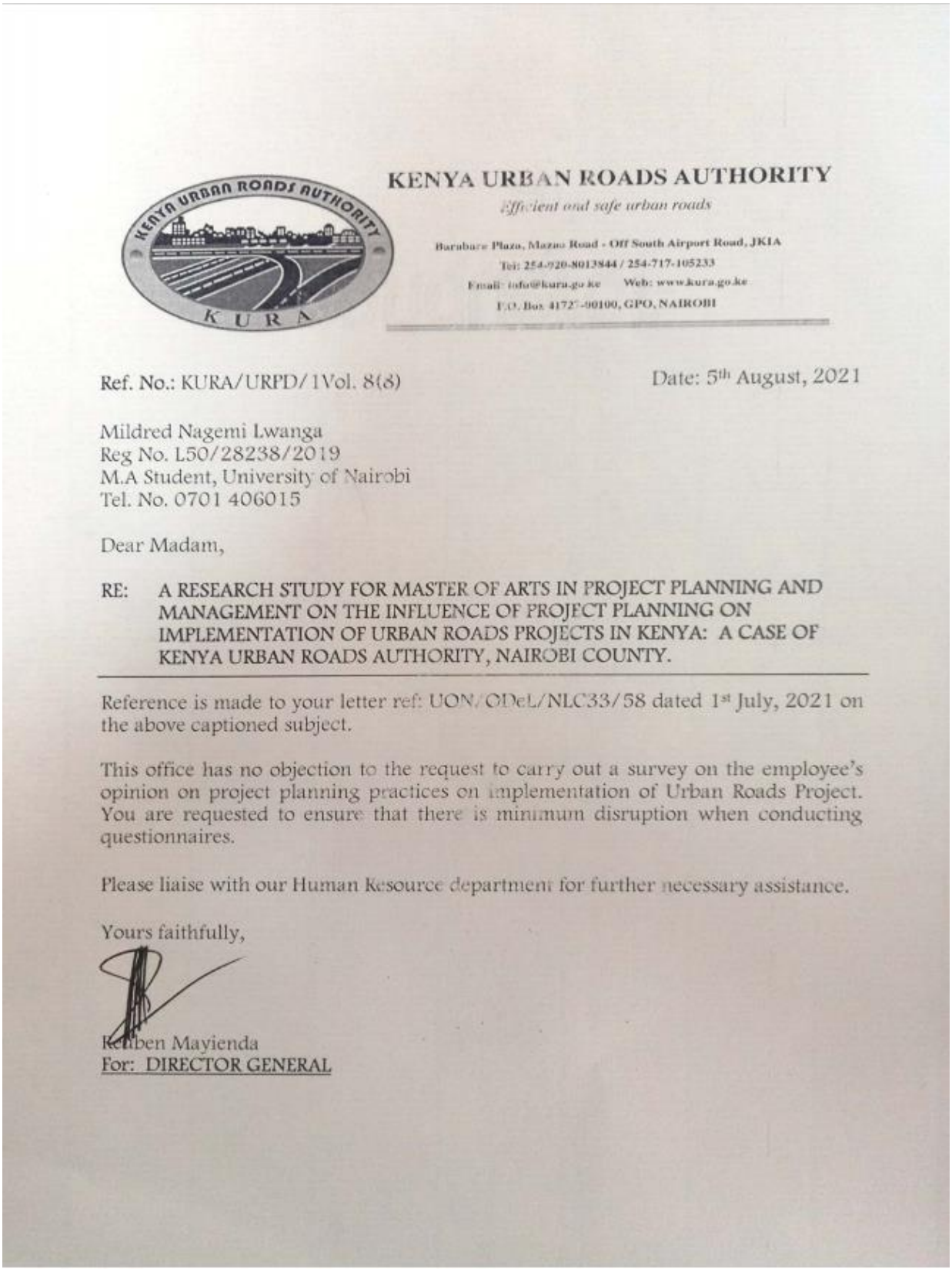
Yours Faithfully,

Mildred Nagemi Lwanga

Reg No.: L50/28238/2019

M.A Student, University of Nairobi

Appendix VI: Kenya Urban Roads Authority Research Approval Letter



KENYA URBAN ROADS AUTHORITY

Efficient and safe urban roads

Barubare Plaza, Mazao Road - Off South Airport Road, JKIA
Tel: 254-720-8013844 / 254-717-105233
Email: info@kura.go.ke Web: www.kura.go.ke
P.O. Box 41727-00100, GPO, NAIROBI

Ref. No.: KURA/URPD/1Vol. 8(8)

Date: 5th August, 2021

Mildred Nagemi Lwanga
Reg No. L50/28238/2019
M.A Student, University of Nairobi
Tel. No. 0701 406015

Dear Madam,

RE: A RESEARCH STUDY FOR MASTER OF ARTS IN PROJECT PLANNING AND MANAGEMENT ON THE INFLUENCE OF PROJECT PLANNING ON IMPLEMENTATION OF URBAN ROADS PROJECTS IN KENYA: A CASE OF KENYA URBAN ROADS AUTHORITY, NAIROBI COUNTY.

Reference is made to your letter ref: UON/ODeL/NLC33/58 dated 1st July, 2021 on the above captioned subject.

This office has no objection to the request to carry out a survey on the employee's opinion on project planning practices on implementation of Urban Roads Project. You are requested to ensure that there is minimum disruption when conducting questionnaires.

Please liaise with our Human Resource department for further necessary assistance.

Yours faithfully,

Reuben Mayienda
For: DIRECTOR GENERAL

Appendix VII: Kenya Urban Roads Authority Research Authorization Letter

KENYA URBAN ROADS AUTHORITY

Efficient and safe urban roads

Barabara Plaza, Mazao Road - Off South Airport Road, JKIA
Tel: 254-020-8013844 / 254-717-105233
Email: info@kura.go.ke Web: www.kura.go.ke
P.O. Box 41727-00100, GPO, NAIROBI

REF: KURA/CS/HRM/31 (8) **DATE:** 6th August, 2021

Mildred Nagemi Lwanga
Reg No. L50/28238/2019
M.A. Student
University of Nairobi
Tel. No. 0701406015

Dear Mildred,

RE: A RESEARCH STUDY FOR MASTER OF ARTS IN PROJECT PLANNING AND MANAGEMENT ON THE INFLUENCE OF PROJECT PLANNING ON IMPLEMENTATION OF URBAN ROADS PROJECTS IN KENYA: A CASE OF KENYA URBAN ROADS AUTHORITY, NAIROBI COUNTY

The above subject matter refers and reference is made to your letter dated 5th August, 2021, requesting to carry out a survey on the employee's opinion on project planning practices on implementation of Urban Roads Project.

We are pleased to inform you that you have been allowed to carry out the research in KURA on the above subject matter.

Please note that while conducting the research you will be bound by the Public Officer Ethics Act, 2003 and any information that will be availed to you must not be used for any other purpose other than for the academic research you have stated in your letter. Please avail the copy of your research report to the undersigned.

Philip M. Sintei
FOR: DIRECTOR GENERAL