

**DETERMINANTS OF URBAN ROADS PROJECTS COMPLETION IN KENYA: A
CASE OF INLAND CONTAINER DEPOT ACCESS ROAD A IN NAIROBI COUNTY**

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

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

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DEDICATION

This research project report is dedicated to my entire family most especially my mother Catherine Ndung'u and my wife Jecintah Wanjiku.

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ABBREVIATIONS AND ACRONYMS

ARWP	Annual Roads Works Program
CAEC	CRDC-APEC-EDON Consortium
CBD	Central Business District
CRBC	China Roads and Bridges Corporation
CRDC	China Railway Design Corporation
CSR	Corporate Social Responsibility
ESIA	Environment Social Impact Assessment
FIDIC	International Federation of Consulting Engineers
GOK	Government of Kenya
GDP	Gross Domestic Product
ICD	Inland Container Depot
KENHA	Kenya National Highways Authority
KR	Kenya Railways
KRB	Kenya Roads Board
KSHS	Kenya Shillings
KURA	Kenya Urban Roads Authority
NACOSTI	National Commission for Science, Technology and Innovation
NCHRP	National Cooperative Highway Research Program
NICD	Nairobi Inland Container Depot
PPP	Public Private Partnership
RMLF	Road Maintenance Levy Fund
RMM	Road Maintenance Manual
ROW	Right of Way
SD	Standard Deviation
SSRBC	Standard Specification for Road and Bridges Construction
TEU	Twenty-foot Equivalent Unit
USA	United States of America
USD	United States Dollars
KWS	Kenya Wildlife Services

ABSTRACT

While urban transport has had a tremendous liberating impact, it has also posed a very serious problem to the urban impact in which it operates. This has brought about the growing demands for construction of urban roads which is on its high and with it comes overstretched and widened fiscal constraints, leading Governments to seek finances only for the projects to delay or haul due to various reasons. The proposed study, therefore, was to investigate determinants of urban roads projects completion in Kenya: A case of Inland Container Depot Access Road A in Nairobi County. The study had the following objectives: to determine how Project Design, Project Financing, Contract Administration and Stakeholders Involvement influence urban roads projects completion. The study was grounded on two theories namely: The Theory of Constraints and Stakeholders Theory. The study adopted descriptive survey research design and relied mostly on primary data sources. Target population comprised of staff working at Kenya Railways, Road A Consultant and Contractor, totaling to 90 respondents. The sample size was 84, derived using Krecjie and Morgan (1970) table. The study adopted purposive sampling and stratified random sampling due to the heterogeneous nature of the target population. A semi-structured questionnaire and interview guide were adopted as research instruments. The quantitative data was coded using SPSS tool and data analyzed by the use of arithmetic means and standard deviation. Data is presented in the form of frequencies and percentages in tables. Inferential statistics were computed using Pearson Correlation Coefficient, to measure the influence of the independent variables on the dependent variable. Qualitative data gathered from the interviews and open-ended questions in the questionnaire was evaluated based on definitions consistent with the study objectives. Thematic analysis was applied to interview transcripts to examine data to identify common themes and ideas that come up. From the study findings, the theme of Urban Roads Projects Completion in Kenya had a composite mean of 3.236 and standard deviation of 2.986. The theme of project design and Urban Roads Projects Completion in Kenya had a composite mean of 3.190 and standard deviation of 2.891. The theme of Project Financing and Urban Roads Projects Completion in Kenya had a composite mean of 3.346 and standard deviation of 3.046. The theme of Contract Administration and Urban Roads Projects Completion had a composite mean of 3.528 and standard deviation of 3.241 and the theme of Stakeholders' Involvement and Urban Roads Projects Completion in Kenya had a composite mean of 3.409 and standard deviation of 3.160. From the findings, the study concluded that project design, project financing, contract administration and stakeholders' involvement influenced urban roads completion in Kenya. The study findings helped to make various recommendations, that is, that governments look into the issues of project delays, since urban road infrastructures make up a large part of the gross domestic product worldwide, playing a crucial role in the country's growth; adequate funds should be provided to support the execution of a project in order to be successful; project managers to create awareness that the success of a project is marked to the satisfaction of its stakeholders. Suggestions for areas for further research were given, guided by the study findings.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Transportation Infrastructure is the basic physical and organizational framework required to run a nation such as highways, railways, airports, marine harbors and so on. This is the business, infrastructure, and facilities required to operate in an economy. It is a significant term for judging the status of a country (Gbadebo & Olalusi, 2014). Developing countries, where around 74 per cent of the world's population lives, are expanding the development of transport infrastructure investment to achieve their goals of social and economic sustainable development. According to Amer (2014) has culminated in the completion of urban road transport projects with an unprecedented contractual cost of over US\$ 1 billion, attracting public interest due to their substantial effect on the global, regional and national economies and markets, as well as the fiscal budgets.

Successful completion of a project means that all requirements have been met by the parties concerned, be they government, investors, design engineers, contractors or even operators and criteria of efficient project implementation or essential performance indicators such as project time, budget, scope, quality, risk management, the project's hard and soft resources, technology, political climate, expertise and know-how, participation of stakeholders and customer satisfaction were thoroughly and fully satisfied, Nyamwaro (2011). According to Nwachukwu, Emoh, and Egolum (2010), the four progress evaluation criteria have to be met for a project to be termed as successfully implemented, that is the time parameter; completed on time; the cost parameter; completed within the allocated budget; the reliability parameter; completed according to the original defined performance and quality standards and the client's satisfaction parameter; accepted by the targeted users or clients.

Greater efforts should be made to project planning, schedule and cost assessments. A research conducted by Nabil, Zaydoun and Hesham (2017) on the delay and cost overrun of infrastructure projects in Jordan concluded that in order to minimize the likelihood of delay and cost overrun during the implementation of road projects, such assessments are paramount in road projects. Khalafizadeh, Mirhosseini and Tayari (2014) noted that thorough planning and management processes should be adopted during the construction period of the projects to satisfy the implementation specifications as per the project plans. Proper management of infrastructure developments can include procedures to avoid problems and contingency plans

to minimize the severity of challenges when they occur. In a research conducted in Saudi Arabia, Sambasivan and Soon (2017) observed that 30% of high-tech and state-of-the-art construction projects were completed within the planned completion periods and that the average overrun was between 10% and 30%. In Kuwait, a study by Koushki, Al-Rashid and Kartam (2015) on delays in construction contracts showed that 64% of investors had levied fines for any delay in contracts. Owolabi (2014) noted that various causes, activities and constraints influence the completion of urban road building projects, which are a mixture of both planned or unplanned developments and interactions over their lifespan and changing stakeholders and processes in ever-changing environments, thereby causing delays. According to Gbadebo and Olalusi (2014), projects are expected to reach requirements, but most projects embarked upon end up being white elephant projects. Assaf and Al-Hejji (2006) described road construction project delays as the time lags beyond the project completion period established in a contract or overruns beyond the date negotiated upon by the entities for the execution of a construction project. Karim and Marosszeky (2019) noted that project delays were a matter of great concern in the transportation construction industry.

Most construction projects suffer delay and exceed the contract amount outlined so their impact on project completion is very important, World Bank (2014). A study carried out by Piper (2011) in Malaysia revealed that between 2010 and 2017, up to 71 per cent of road infrastructure development projects were delayed for completion as a result of poor budgetary allocations and inconvenient binding contracts. In the U.S.A, Bramble and Callahan (2011) examined productivity drivers in road construction, such as owners, designers, contractors and other relevant project completion delays and discovered that late site release to the contractor, defects in contract design, slow correction of design errors, revision of tardy shop drawings, testing and inspection, acts of God and land disputes were some of the causes involved.

Amer (2014) researched on the performance of road infrastructure projects in Malaysia and the results revealed that four key components define the effective requirements of an infrastructure project which are convenience, competence, involvement and communications. Successful factors ensure well balanced capital, efforts and leadership for project execution. Competence requires that appropriate equipment, expertise, and specialties are available for the project. Involvement ensures that all project stakeholders and all levels of each participating organization's management hierarchy are able to coordinate, schedule, design,

build and operate the facility in a harmonious manner. Communication allows both internal and external project stakeholders to explain and disseminate both relevant information and feedback about the project.

Delays in project implementation are common in Africa when implementing urban road infrastructure projects. Awoyinfa (2012) noted that between 32% and 56% of projects in Nigeria experienced delays in completion due to a lack of materials, bad plants, equipment and machinery. In Egypt, Laila and Mohamed (2018) observed that 16.6% of road projects faced overhead costs, 37% suffered over time, and 98% of contractors were delayed due to financial and political factors in delivering their project on scheduled time. According to Karim & Marosszky (2019), between 2004 and 2009, up to 45 per cent of road reconstruction and renovation projects in Soweto in South Africa were not completed in time due to factors such as political disputes when Zimbabwean refugees entered the region, low technology applications in road construction, etc. According to World Bank (2014), as a result of issues resulting from irregularly procured and awarded tenders, political uncertainty has left as many as 30 per cent of roads and highways unfinished. In their claims in Sudan, Omran, Abdalrahman and Pakir (2012), urban road network projects have encountered cost overruns progressively leading to incomplete roads. A study done by Apolot (2013) on causes of delays in construction of public transport infrastructure in Uganda revealed that there is limited access to finance and decision-making attitudes.

In Kenya, the government has increased investment in urban road infrastructure through direct budgetary allocation and through cooperation with the private sector, such as foreign governments and banks as part of efforts to boost connectivity and enhance the country's logistics network. Considering the role of roads in the country's socio-economic growth, the government has gradually increased the allocation of budgets to the road sub-sector in the recent past (Ondari,2013). The Third Medium Term Plan (MTP III) 2018-2022 established the development, expansion and reconstruction of 10,000 km of convectional roads as the foundation and enabler of national transformation in steering Kenya 's economy towards achieving the objectives of the sustainable economic growth pillars of Vision 2030, (Economic Survey,2015). Despite these government commitments, delays in completing transportation infrastructure building such as roads are a common reality in Kenya. Amid Treasury Allocation Funds, Road Maintenance Levy Fund (RMLF), Local Government Capital Fund, Long-Term Infrastructure Loan, Public Private Partnerships and Debt Capital

Assistance from Developed Countries to develop Kenya's road network to meet the Vision 2030 Development Goals, significant obstacles are facing urban road projects (KURA, 2017).

Successful road construction is an impetus to economic development for Kenya as enumerated in the Kenya Vision 2030 (GoK, 2019). Consequently, the Government has invested heavily in the road construction. However, the challenges of project implementation are not experienced in Nairobi only. A study on Kericho-Kisumu road, Chepkoech (2012) argued that the road was to be completed by 2002 had taken a relatively longer time and was completed by mid-2005. Kiambu County, Kenya's fastest growing county has had a share of its challenges. For example, in financial year 2017/2018 KeNHA planned to construct 13,138.7 km of roads in Kiambu County at a projected cost of KSh.204 Million whereas KeRRA had a budget of KSh.108 Million to maintain 28,243 km of rural roads in the same county. On the other hand, KURA had a forecast of maintaining 2,338 km of roads at a cost of 510 Million (KRB, 2019). According to (KRB, 2019), there are a number of road projects in Kiambu county that have experienced a 1 year time overrun, as thus: the Ksh.110 Million proposed upgrading of 3Km Kanjiku- Kingothia road project to bituminous standards; the Ksh.1 billion upgrading of gravel road projects to bituminous standards (Kiambu bypass road 2km and Kiambu Bus park); the Ksh.100 Million upgrading of Wataalam-Bypass road, Bus park access to bituminous standards & improvement of storm water drainage; the ksh.79 Million upgrading of 2km Mugo Kibiru road project in Section 9 to bituminous standards, Improvement of drainage system and provision of NMT Facilities; the Ksh.51 Million upgrading of Kiambaa road to bituminous standards and the Ksh.140 Million proposed upgrading of Wambaa – Wamakima road project to bituminous standards.

Due to rapid development of the economy, the throughput of Mombasa port increased gradually to 24,875,000 Tons in 2014, (Kenya Ports Authority performance report, 2015). The existing modes of transport could not meet the transportation needs, so there was urgent need for a large capacity transport channel to be implemented. The government settled for construction of a Standard Gauge Railways from the port of Mombasa to Nairobi which commenced in 2014. According to Nairobi ICD Access Road Project Feasibility study report, (2015), during the implementation phase of the Standard Gauge Railway, it was foreseen the handling capacity of Nairobi Inland Container Depot would increase from 185,000 TEU per year to 410,000 TEU per year by year 2020. In order to meet the transportation requirements for the freight consignment, it was crucial to construct an access road dubbed road A from the

ICD before Mombasa Nairobi SGR line commence operations, (Nairobi ICD Access Road Project Feasibility study report, 2015).

1.2 Statement of the Problem

Road agency statistics show that delays have been experienced in road construction with cost fluctuations, particularly in Nairobi urban areas. For instance, in the construction of Kenya Wildlife Services (KWS) Gate - Bomas Section in Nairobi County by Kenya Urban Road Authority (KURA), construction commenced on 9th February 2012 and was scheduled to be completed within June 2013; the date was later revised to June 2014. The cost also escalated due to interests caused by delays (KURA, 2017). Construction cost of Thika Superhighway Road escalated from Kshs. 26.44 Billion to Kshs. 35.45 Billion (World Bank, 2014) and the project construction period was revised from July 2011 to July 2013.

Road A is one of Nairobi's Inland Container Depot (NICD) crucial cargo evacuation road. The road was scheduled for completion on 30th April 2017 one year after the government awarded a contract for its construction on 1st May 2016. The total cost of the road was Kshs. 3.5 Billion, this was part of Government of Kenya-funded construction of Nairobi Inland Container Depot yard and access roads project, Kenya Railways Report (2019). The 3.777 kilometers dual carriage way Road A stretch is the most critical artery for Nairobi Inland Container Depot whose capacity was increased from 185,000 TEU per year to 410,000 TEU per year, stretching from NICD gate A and links with the southern bypass. It cuts parallel on the east side of the Nairobi National Park and terminates at Southern Bypass-Olesereni hotel interchange.

As at end of May 2020, and four years down the line, NICD Access Road A construction progress stood at 35% (Kenya Railways monthly report, 2020). The continued state of incompleteness of the road project is causing immense congestion of trucks and cargo at the NICD hence having a significant effect on the economy. According to Kenya International Freight and Warehousing Association report (2018), importers are losing about Kshs. 70 million daily on storage and detention charges due to cargo pile up at the NICD. Kenya Railways (KR), as the project implementers, pointed out Right of Way (RoW) limitations, contractual disagreement, inadequate budgetary allocation by the Government on relocation of services, numerous design changes hence extension of time for the delivery of the project by the contractor as the major reasons for construction delay of Road A. This has resulted in

time and cost overruns. Most research work done globally and locally has dwelt on determinants of the completion of road construction projects in general but limited literature study exists on the construction of evacuation roads in an urban area. It is against this background that this research study therefore, hoped to investigate determinants of urban roads projects completion in Kenya: A case of inland container depot access road A in Nairobi County

1.3 Purpose of the Study

The purpose of the study was to investigate the determinants of Urban Roads Projects Completion in Kenya: A case of Inland Container Depot Access Road A in Nairobi County.

1.4 Objectives of the Study

The research study sought to achieve the following objectives:

1. To determine how project design influences urban roads projects completion in Kenya
2. To examine how project financing influences urban roads projects completion in Kenya
3. To assess how contract administration influences urban roads projects completion in Kenya
4. To establish how stakeholders' involvement influences urban roads projects completion in Kenya

1.5 Research Questions

The following questions were answered by the study:

1. How does project design influence urban roads projects completion in Kenya?
2. How does availability of project finances influence urban roads projects completion in Kenya?
3. How does contract administration influence urban roads projects completion in Kenya?
4. How does stakeholders' involvement influence urban roads projects completion in Kenya?

1.6 Significance of the Study

To achieve the Big 4 Development Agenda of Food Security, Universal Healthcare, Manufacturing and Affordable Housing by the government, quality and adequate road infrastructure remain essential. Urban roads not only play a pivotal role in reducing transport

costs but also fostering the development of primary economic sectors, encouraging trade and making social services more available and enhancing efficiency in public transport.

The study findings may be of importance to governments, sponsors, contractors, consultants, professionals and other project stakeholders when contracting out road construction projects in urban areas and thus lead to success factors influencing the timely completion of future projects. Governments and donors will find the outcomes of the study useful in project planning and design, and thus synchronize with various financial models before construction begins. This will avoid costly delays during implementation

The results of the study may be valuable to road construction contractors, in guiding them on when to engage stakeholders to increase the success of completion of the construction project. The results of the study contain important knowledge that could promote appropriate decision-making by road construction consultants and professionals regarding the successful implementation of projects.

The study may contribute to the knowledge in project planning and management which researchers and scholars may use as part of literature review to identify research gaps that can be investigated.

1.7 Limitation of the Study

The main limitation of the study was access to information that the study seeks. The targeted respondents were reluctant in sharing information fearing it might be used against or print a negative image about the organization they work for. In order to mitigate the situation, before sharing of questionnaires, the researcher briefed the respondents assuring them the information is purely for academic purpose and their identity shall be treated as confidential.

Due to Covid-19 state in the country, most government and private firms' officials and staff, were working from home or in shifts and this included the potential respondents of the study. This could have affected the questionnaire return rate. In order to mitigate the situation, the researcher administered questionnaires both physically and through emails.

ICD Road A project has many Project Engineers, Surveyors, Contract Managers, Designers, Liaison Managers and Financial Advisers and it was difficult to collect data from all of them. The researcher collected data from a sample size that was generalizable to the entire population of the study.

1.8 Delimitation of the Study

This study investigated determinants of urban roads projects completion in Kenya: A case of inland container depot access road A in Nairobi County. The study variables were Project Design, Project Financing, Contract Administration and stakeholders' involvement. The study's target population was 90 respondents. They were staff working at Kenya Railways, Road A Consultant and Contractor. The study sample size was 84. The sample stratum consisted of Project Engineers, Surveyors, Contract Managers, Designers, Liaison Managers and Financial Advisers.

1.9 Basic Assumptions of the Study

The study assumed that the selected Road A project in Nairobi adequately represented other urban roads in Kenya. The researcher also assumed that the respondents would participate in this study and were prepared to answer the research questionnaires, providing the right and truthful details.

1.10 Definition of Significant Terms

Completion:	Refers to the operation of finalizing construction works relevant to a project according to specified scope requirements and specification.
Contract Administration:	Refers to a tool that manages contractual matters which includes administration of the contract according to the client's and contractor's experience, indicates level of involvement of the stakeholders in contract matters and manages civil and service works' contract duration.
Determinants:	Refers to factors that directly contribute to a decision in a given situation and influence the essence or outcome of something.
Inland Container Depot:	Refers to an inland multi - modal transport hub that is connected directly by road and rail to a main port that

usually serves as a trans - shipment hub for sea freight to offshore terminals.

Project Design: Refers to a systematic collection of concepts, resources, and procedures aimed at achieving an objective. A successful design prevents pitfalls and offers guidelines for managing critical factors such as time and expense of the project.

Project Financing: Refers to the long-term infrastructure funding act or mechanism utilizing a non-recourse or restricted financial framework that relies primarily on cash flow for payments in the projects.

Stakeholders' Involvement: Refers to the method of engaging and involving ICD road A project stakeholders to the greater benefit of the project. The success of a project generally depends on how it is viewed by the stakeholders.

Urban Roads: Refers to roads within the limits of a built-up region which is marked by challenges of land use.

1.11 Organization of the Study

The study is organized into five chapters. Chapter one is the introduction covering; background to the study, statement of the study, research objectives, research questions, significance of the study, limitation of the study, delimitation of the study, basis assumption of the study and definition of significant terms. Chapter two is the literature review which covers introduction, empirical review of literature based on the objectives of the study, Theoretical framework, summary of literature, research gaps, and conceptual framework. Chapter three is on research methodology and it presents the research design, target population, sample size and sampling procedures, research instruments, validity and reliability of research instruments. It also discusses data collection procedures, data analysis techniques, ethical considerations in the study and operational definition of variables. Chapter four covers data analysis, presentation and interpretation. Chapter five comprise of an

introduction, summary of the findings, discussion of findings, conclusions and recommendations as well as suggestions for further studies.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter gives a comprehensive review of the literature on the Determinants of Urban Roads Projects Completion in Kenya. It consists of literature review on the themes of Urban Roads Projects Completion in Kenya and the related Determinants: Project Design, Project financing, Contract administration and Stakeholders Involvement. It has the theoretical structure that provides a theoretical basis for the variables of analysis, a summary of literature, the knowledge gaps matrix and finally conceptual framework which demonstrates the relation between the independent and relationships between variables.

2.2 Urban Roads Projects Completion in Kenya

Urban road projects are deemed successful when completed in scheduled time, allocated budget and defined quality (Owolabi, 2014). One of the most critical considerations for the sector is timely completion of the projects (Abbasi; Tarhini; Hassouna; & Shah, 2015). According to Hatfield (2016), the success of a project depends on meeting goals within time limits and budget limits. The project team's failure to achieve a detailed overview of the development phase from start to finish is likely to be the reason why the expected delivery date has not been realized (Ondari, 2013). In a study by Albalate (2014), project delivery delay could be defined as the period exceeding either the date specified in a contract or the date specified by the involved parties. Road construction project delay is where there are different discrepancies between the actual huge undertaking sites compared to the work scheduled, failing to meet expected time, budgeted costs and specified quality, leading to various negative effects on the projects, resentment, lawsuit, mediation, arbitration, cash-flow problems and feelings of apprehension towards one another (Oraro, 2012). When road projects are delayed, the projects are typically extended or accelerated and thereby incur extra costs.

Delays in the completion of infrastructure facilities is a critical problem with a global dimension, frequently leading to loss of production, disruption of work, loss of revenue through legal proceedings between contracting parties and abandonment of projects. Urban road infrastructures make up a large part of the gross domestic product worldwide (Owolabi, 2014). Road construction projects in the developing world provide a significant source of

jobs for the majority of countries' people (Basheka, 2011). Globally, the estimated annual value of the urban road projects is \$1.5 trillion (Hamzah, 2012). According to Mustapha (2013), the development of urban roads is one of the world economy's most important forces representing 7 per cent of its total jobs, calling for successful completion of road projects. Nonetheless, urban road building projects are a global problem that needs to be studied so that project implementers can deliver projects to the beneficiary successfully. Ramanathan, Narayanan and Idrus (2012) observed that time overrun varies from 50 percent to 80 percent for projects built worldwide and that the majority of project delays in urban roads occur during the construction process, where many unexpected factors are often involved. Delay in construction could be described as the time lag beyond the date of completion stated in a contract or beyond the date agreed by the parties for the delivery of a project. According to Memon (2014) research on contractor perspective on time overrun factors in Malaysian road construction projects, the key factors causing delays were: errors in the initial budget assessment; instability system in architecture and engineering, site risks, inadequacy of feasibility studies, frequent design changes, project scope changes, owner's financial difficulties, decision making delays and unexpected grounding conditions.

According to a study conducted in Malaysia on timeline and cost performance in road construction projects by Memon (2014), there was timely completion of 21 per cent of public sector projects and 33 per cent of private sector projects. Results of the study showed major project delays included: design and planning issues; financial resource planning; systems engineering and contract administration and management; site management, information technology. Owolabi (2014) studied the causes and effects of delay on project construction delivery time in Nigeria and stated that 7 of Nigeria's 10 projects encountered delays in their execution. The study findings revealed that the following were the five major causes of delay: lack of funds to support the project to completion, changes in drawings, lack of appropriate contact between the concerned parties, lack of sufficient consultant knowledge and sluggish decision-making. Transport infrastructure report linked delays in completing approximately one-third of infrastructure projects with a lack of capacity by contractors, an increase in construction material prices, a protracted transition of land ownership rights to contractors, postponement of payments due to design issues, as well as legislative challenges in procurement of required plant and facilities from the international market (Basheka, 2011). According to a study by Ramabodo (2012) on the causes and effects of delay and disruptions in road construction project in in the Middle East, Twenty percent of the Gulf Cooperation

Council's building projects were on hold, while twenty-four percent were cancelled; projects worth 89 billion US dollars were on hold in Qatar, while those worth 107 billion US dollars were cancelled. A research done by Yvas (2013) on the causes of delay in project construction in Developing Countries reported that 80% of road projects were delayed and almost half were delayed by more than six months. Due to factors such as hired manpower, equipment rentals, increasing material costs and expansion of third-party facilities, there was expected to be an extra expense whenever construction delays were encountered. According to a study by Mustapha (2013) who researched on the factors causing delays in road transport project delivery in Ghana, the results indicated that the key delay factors were delays in the honoring of interim payments, delay by contracting companies, market volatility, difficulty in obtaining bank loans and variations initiated by clients.

The following factors has been recorded as the main causes of delays in the construction of urban roads; construction techniques; massive overhaul due to design errors; long bureaucratic process of certification and variation orders; A study done by Apolot (2013) on causes of delays in construction of public transport infrastructure in Uganda revealed that there are limited access to finance and decision-making attitudes. According to Ramabodo (2012), empirical research in the construction of urban roads in South Africa found changes in the layout of work on site, unfinished design at the time of the bidding, project funding preparation and monitoring, delays in costing variations and additional works as major project delay factors These factors affect the completion of urban road projects. Abassi et; al (2015) Noted that time and cost overruns have affected the transportation sector in Botswana, with leading causes being inefficient contractor management, low contract workforce productivity, a lack of modern equipment by contractors, and consultants' design errors as the highest ranked causes. Project completion requires proper and effective project management practices and techniques. The completion of urban road projects has often been affected by weak contractor management.

In Lebanon, contractual arrangements and project management have been found to impact the completion of infrastructural projects from the point of view of contractors and consultants. Khalafizadeh, Mirhosseini and Tayari, (2014) observed that there has been a tremendous increase in the number of road construction projects in various parts of the country. Gwayo (2014) noted that there is growing concern about the reasons why the required goals are not being achieved according to the expectations of the client of the projects. Transport

infrastructure plays a vital role in the nation's economic growth, by growing efficiency and competitiveness. Under the Kenya Vision 2030 development agenda, the second Medium Term Plan (2013-2017) established infrastructure development as a key enabler to sustainable growth and development. Kenya Urban Road Authority, (2013) reported that there were several projects that were not executed due to client impediments, lack of availability of materials, poor infrastructure, lack of financial support and lack of competence of project managers. A study by Choge and Muturi (2014) related the timely completion of infrastructural transport projects to the experience of the contractor. The study concluded that project contractors are selected on the basis of cost procurement, experience in performing various forms of construction projects and their reputation or proven record of executing high-quality work on time well as within the agreed project budget.

In Kenya, the government increased investments in transport infrastructure through direct national budgets and through partnerships with the private sector such as international banks and governments as part of the efforts to boost connectivity and enhance the logistics network of the country. Given the importance of roads in the country's socio-economic development, the government has steadily increased the allocation of budgets to the road sub-sector in the recent past (GOK, 2014). The Third Medium Term Plan (MTP III) 2018-2022 identified the development, expansion and rehabilitation of 10,000 km of convectional roads as the foundation and facilitator of national transformation in the management and steering of Kenya's economy achieving the objectives of the Vision 2030 Sustainable Economic Growth Pillars Economic survey (2015). Notwithstanding these, government promises, delays in completing transportation infrastructures such as urban roads is a common reality in Kenya.

2.3 Project Design and Urban Roads Projects Completion in Kenya

To appreciate the timely and satisfactory completion of urban road infrastructure development projects, it is essential to note that certain steps are required to build a road. The conventional procedure for implementing road infrastructure projects begins with project planning, that involves conducting a feasibility analysis to create a project's business plan (Macharia,2016). Before the initial road building project phase starts, which, according to Mohammed (2012), is part of the rationale for the project, there must be clear objectives. The technical feasibility study includes finding the traffic constraints for the road project being proposed. Technical viability for project justification or dismissal may be based on the

amount of traffic limits, (Kagai, 2012). The road architecture requires geometrical consideration for driving comfort (Schoon, 2014). A pavement structure for construction is chosen depending on material testing considerations and the amount of and the class of traffic (Sambasivan & Soon, 2017). The process also includes executing the road project, which involves carrying out the designs using the allocated resources and implementing the project schedule set.

Variances from the construction project schedule may result either in project completion delays or cost overruns. Karim & Marosszky (2019) study of the process monitoring for process re-engineering using key performance indicators investigated the ex-post evaluation of European Investment Bank transport projects that addressed transport projects in Central and Eastern Europe. The analysis indicated that the project designs were formulated by the sponsors, in some instances supported by international consulting firms, then presented to the investment bankers and reviewed critically and suggested alterations, recommendations and conditions before authorizing the final design with certain changes incorporated. The improvements resulted in an ineffective design; reducing life span and increasing both damage to the pavement and cost of maintenance. Detailed plans, specific materials and breakdowns of labor costs were not available for assessment, so possible project components were approved on a case-by - case condition after analysis by the bank.

Construction instability and dynamic existence increased the degree of complexity involved in the planning and execution stages. Urban road construction has traditionally separated design and planning from construction processes that have resulted in some scope and design associated (Dosumu & Clinton, 2017). Separating design and construction has given rise to severe problems in which designs are made without concern for build ability or productive economies, thus negatively impacting project performance, (Austin, Andrew & John, 2002). The consequence of those changes resulted in cost overrun problems, scheduling delays and loss of profitability. The aforementioned combination has an adverse effect on the overall cost of the project. In very well-managed projects, changes in design may have a significant effect on costs in the range from 2.1 percent to 21.5 percent of overall construction costs (Chang, 2014). Results of a system dynamics model analysis by Han, Sangwon, and Feniosky (2013) to determine the impacts of design errors on road construction projects showed that design errors resulted in certain reworks in construction project and resulted in 5% to 20% increase in the project costs. Cost overrun phenomenon owing to changes in design are

universal with nearly every country experiencing the unfavorable impact of changes in design on project cost efficiency. Many studies have been carried out to identify the causes associated with changes in design, which depends on specific project and regional demographic trends. Design changes generally occur due to interconnected actions of owners, consultants and contractors (Abdul, Chen & Jeffrey, 2017). Few researchers considered clients to be the primary force behind changes in design while others accused consultants for constant changes. Nevertheless, contractors have also been described as the leading players in generating events that lead to the shift in design changes. The contractors operate within the defined time limit, mutually agreed by the two parties (Rodrigue, 2012). The contractor is permitted to raise certificates for payment monthly, depending on the contract's stipulations and requirements. As the presumption is that the contractor has project budget for the road projects, the funds will be released to ensure that the projects are finished on time.

With road building projects being completed, the contractor is entitled to request a significant completion awaiting the liability period for defects. According to NCHRP (2012), the period of liability for defects offers the employer time to check for defects and request remedy from the contractor. In the end, a Taking-Over-Certificate is given to the contractor as well as Defects Liability Certificate, upon which they the retention monies can be claimed. The client issues a completion certificate after ensuring that the maintenance monies are passed to the contractor, which fully exempts the project contractor from all responsibilities and liabilities and signifies the end of the project. Ideally, the process is controlled and guided by the FIDIC, Conditions of Contract for works of Civil Engineering Construction, Federation International des Ingenieurs-Conseils. The following manuals are used for supervision to ensure proper implementation of the works: 1986's Basic Specification for Road and Bridge Building (SSRBC), 2010's Road Maintenance Manual (RMM), 2010's Contract Management Manual, 2010's Traffic Agencies Planning Manual for the Preparation of Annual Road Works Programs (ARWP), 2010's Kenya Roads Board. The traditional procedure is implemented in accordance with E.U requirements and is intended to ensure enforcement and control. Decision-makers have, however, largely overlooked the process leading to higher road building costs.

2.4 Project Financing and Urban Roads Projects Completion in Kenya

Project financing is obtaining capital to finance a commercially viable and sustainable capital investment project, with the sponsors mainly looking at the investment cash streams as a source of funds to serve the loans and generate returns on project expenses (Chiocha, 2011). Mateshe (2013) defines project financing as funding for a particular economic unit in which the investor is willing to look primarily at the investment gains and revenues of the economic entity as its source of the funds from which the loan is to be repaid and to the assets of the economic entity as collateral for the loan. Projects are strategic efforts undertaken to build economic benefit and strategic edge (Olatunji, 2010). Therefore, it is expected that financing of construction projects such as roads, railways, port harbors and much more will be an economic investment. Urban road construction industry helps to generate wealth and create job opportunities within a country's economy. It helps to build and/or broaden urban infrastructure that promotes the service sector, spurring broad economic growth.

The transport infrastructure industry plays a crucial role in the growth of every nation in transforming the hopes and needs of its people into reality. Therefore, it is essential to increase implementation and, most importantly, to complete urban roads in a country. Sustainability is key to financing urban road projects (Bundi, 2011). Chen (2007) maintains that adequate funds should be provided to support the execution of a project in order to be successful. Jackson (2016) added that availability of project funds is a significant factor affecting a project's execution. The late release of funds, especially during the project's first phase, is a significant barrier to successful project implementation, particularly where new project personnel need to be hired and pre-required field supplies purchased for project kick-off activities. Equity and debt have become the main sources of financing for transport infrastructure. Innovative methods of funding ventures have arisen in the recent past, however, and these include special project funds and venture capital. Multilateral institutions and international governments also provide support for public infrastructure projects (Wambugu, 2013). Transport agencies of the government give priority to investments in construction projects such as roads and other transport projects not just to stimulate economic growth, but the wider associated benefits should reach the citizens.

Road building ventures typically include a developer, who funds and maintains the project. The project's investors are typically broad public institutions such as county government or multilateral institutions. Karim and Marosszeky (2019) noted that most of the public

investment goes to transport infrastructure projects, with the government being the world's leading supplier of public infrastructure services, accounting for 78% of the spending in the year between 1984 and 2003. The sponsor engages respective consultants to design, supervise and manage projects through the use of procurement strategy and contract documents. Jackson (2008) noted that funding for the project is well outlined in the contract documents. Lam, Wang, Lee and Tsang (2007) reported that FIDIC (Federation Internationale Des Ingenieurs Conseils) and New Engineering Contracts are the governors of major construction contracts worldwide. According to World Bank (2012) report on the state of rehabilitation of major urban roads in the Tennessee Valley USA following the deadly Tsunamis, two main factors were central to the completion of the road rehabilitation period, namely project time and project funding.

The meaning of a construction contract can be specified with the given construction time and finances. For a specified amount of money, for example, road construction contractor would be expected to deliver a facility within the specified time limit (Chism & Armstrong, 2010). According to Dissanayaka & Kumaraswamy (2009), once a project investor enters into a building project, an immense amount of money is spent in a specified period and it expects the investment to repay itself. As such, the prompt completion of the project means that the costs incurred are the required expense of the project. Any delay leads to cost overruns which increase the cost of the project. A study on implication of non-completion projects in Malaysia by Hussin and Omran (2012) concluded that 70% of projects suspended in Malaysian transport construction projects were mainly due to budgetary inadequacies, developer issues, contractors, local and national governments, sponsors and many others. In a similar study carried out by Piper (2011) in Malaysia, where he found out that between 2010 and 2017, up to 71 per cent of road infrastructure development projects were delayed for completion as a result of poor budgetary allocations and inconvenient binding contracts. The same study cited that the reconstruction of the major highway linking Madagascar's major international airport with the CBD of the capital city had time and cost overrun due to insufficient funding.

In 2011, 45 per cent of major road projects linking Kenya, Tanzania, Uganda and by extension Burundi, faced delays in construction due to insufficient project finances and weak financial management (GOK, 2012). The overall lack of funding to complete a project or delays in project owners or customers' payment of the services can lead to major problems

(Hussin and Omran, 2012). It has been contented that the complex and dynamic nature of urban road projects make it difficult to schedule, predict, monitor and control the construction processes of the project (Ganiyu & Zubairu, 2010). Therefore, as construction projects are capital investment that should ultimately be economically meaningful, there is a need for project managers to offer meaningful solutions to overcome delays in construction projects caused by inadequate project funding. Contributions to delays in government's urban road infrastructure projects being implemented are primarily due to the late release of funds to the contractor, impacting the ability of contractors to ensure the continued supply of construction materials (Chepkoech, 2012). Clearly, the financial position of the government greatly affects the financing status of urban road projects which influence the construction of infrastructure. Olatunji (2010) noted that Project financing is a constraint beyond the immediate control of the contracting parties but still affects the smooth flow of scheduled operations. With slow payment of project financing, the contractor may start committing less resources to the construction project which may prolong the stipulated implementation time, causing eventual overruns of costs. A study on Kericho-Kisumu road, Chepkoech (2012) argued that the road was to be completed by 2002 had taken a relatively longer time and was completed by mid-2005. The findings indicated that it was due to the political circumstances, wherein funds allocated to the project implementation was used for political and other purposes.

During the construction and maintenance of five urban road projects classified as Class A, B and C in the Kenyan coastal region under the Kenya National Highway Authority (KeNHA), which develops, operates, rehabilitates and maintains all national roads, Desai (2013) noted a similar case in which allocated road construction funds were diverted for political interests. Other cited urban roads under the same study and which experienced the same financial challenges were the periodic maintenance works of Mtito Andei-Voi (A109) Road, periodic maintenance of Mombasa- Miritini (A109) Road, rehabilitation and upgrading to bitumen standards of Mariakani-Kilifi (C107). Studies done by Oraro (2012) and O'shea (2013) revealed that (KeNHA) roads suffered from delayed construction finances from the national government, limited budgets, withdrawal by donors due to heated political alignments, weak contractual arrangements, lack of proper expertise and technology. According to World Bank (2014), the utter lack of completion and delay in road construction and rehabilitation has affected the regular operations of KeNHA in the coastal region.

Quality of urban roads is also affected by delays of construction finances or diversion of funds which mean that road reconstruction has become more regular than it ought to be. A study done by Thugge, Heller and Kiringai (2012) on implementation of transport infrastructure projects in Kenya revealed that the absorption of development budgets is a serious concern for a number of government agencies because it results in a situation where funds that would have been used to boost the economy are being diverted to activities unrelated to implementation of infrastructure projects. Wafula (2017) noted that part of the financial resources allocated by the Government for the maintenance of urban roads in the country in 2015 are mostly misappropriated and where the funds are used appropriately, slow disbursement of the construction finances hinder the pace of infrastructure development as well as rate of a country's growth. A Government of Kenya research report (GoK, 2012) examined major urban road development projects in the East African region. It was noted that in Uganda and Kenya, most of the urban road projects had been financially affected in one way or another. The survey indicated that at least 45 percent of the urban road construction projects either were abandoned or faced major delays in beating the stipulated completion period. Some of the issues the report revealed included inefficiencies in system monitoring and evaluation, and poor financial resource management.

Road construction projects often take a long time to complete, when financial problems arise and are not resolved in time. Kagai (2012), observed that Thika Super Highway in Kenya was completed in 2013, with its original completion date was July 2011. However, the implementation cost escalated to 31 billion Kenya Shillings from the initial estimate of 27 billion Kenya Shillings. Delays in the contractors' payment by (GOK) were a major contributor to the failure to meet the timeline for the project. According to Mbogo (2012), the financial challenges faced by the contractors on the Thika Road forced the private party to outsource funds to complete the road construction. World Bank (2014) noted that road construction progress payments are expected from the financial institution, the majority of cases from a government agency, investor or private party in a private public partnership. In Kenya, Kenya Roads Board (KRB), Kenya Urban Roads Authority (KURA), and KeNHA oversee most of the urban road development projects. Such organizations will make on-going payments to road contractors.

It is very challenging to have a good picture of the public construction projects from the beginning to the end and thus the danger of undertaking a road construction project is high.

The problem is compounded by the fact that the government's financial budget lasts for one financial cycle, although it will take longer than this time for most road building projects (Gaba, 2013). Therefore, constraints are likely to be encountered in having effective financing plans for road construction projects. Laryea (2015) noted that this results in delays in disbursing funds to road developers, and sometimes also lack of funding to finance and maintain projects. Callinicos (2018) indicated that a cohesive approach to transformation, quality improvement and innovative approaches can be developed through the introduction of models for financial performance management, transport infrastructure and construction organizations. Gyula (2018) noted that development of urban roads has started to implement up-to-date financial information technology, data processing and customer systems. Davis, Schoorman and Donaldson (2017) identified among other variables, the integration of project financial knowledge into project practice has made a significant contribution to good decision-making on the project financing perspective, reflecting in return the successful execution of transport infrastructure projects.

2.5 Project Contract Administration and Urban Roads Projects Completion in Kenya

Road design contracts are instruments to specify the rights and duties of stakeholders as well as to state the parties' intentions. Road building projects involve various activities such as installations, repairs, demolitions, renovations and construction, (Rodrigue, 2012). Infrastructure projects are affected the activities and interested parties. Integrating the project components is difficult because the interactions between the stakeholders as well as the scopes of the works are mostly unclear. According to Ndungu (2015), in the contract documentation, the customer will enter into a contractual agreement with a second party. The company must enter into a contractual arrangement with a second party in the contract documents, Mateshe (2013). The contractually enforceable agreement contains terms to ensure that the party in question provides for the procurement of the project construction that the customer wants to see completed.

The project contract agreement specifically stipulates the administration of contracts, it also specifies the nature of the project to be performed in the construction drawings and requirements and includes project costs in the quantity bills. According to Basheka (2011), the aspects of time, cost and quality are main provisions in any construction contract. Albalate, (2014) advances the idea that an optimal contract length exists for which the consumer earns the best price. He further avers that the owner charges a premium for the

project acceleration if the facility is required in less than optimum time. If the employer gives the contractor longer construction duration in the contract, more than the maximum period, he must pay the facility extra costs for the lost revenue, denial of the facility's use and all the potential extra costs for the contractor. Baker (2015) identifies the implementation of creative procurement or contracting methods as a good practice leading to effective execution of projects. According to Hussin and Omran (2012), creating contract management is a primary determinant of whether the project will be successfully completed or not (Republic of Kenya, 2015). As many scholars have observed, the significance of the topic of contract management and administration in construction projects keeps coming up because it brings the key aspect of quality, in urban road construction projects, Matesehe (2013). It's because fulfillment to the specifications and standards is amongst many dimensions of quality product or service from the customer's point of view. When a project fails in its completion, then the expectations and requirements of the customers in terms of construction costs are clearly not met, Davis (2014). Therefore, contract administration management processes puts customers time limits for when they will reap the advantages of the construction project. According to Choge and Muturi (2014), studies conclude that conditional admission to the possibility of potential contract delay due to very many unexpected factors is often accepted in the contract agreement where such delays are allowed on notice to the contractor. However, any additional contract extension beyond these delays is deemed inexcusable.

In contract administration, urban road contractors are expected to inform the employers of any anticipated contract delay beyond the dates stated in the legal binding agreement before their cumulative effects are financially evident, small delays are almost ignored (Ahmed, Azhar, Castillo and Kapagantulla, 2016). In Kuwait, a study by Koushki, Al-Rashid and Kartam (2015) on delays in construction contracts showed that 64% of investors had levied fines for any delay in contracts. Ayudhya (2016)) claimed that there was both delay and cost overruns caused by contractual disagreements. Rodrigue (2012) reported that only 1/8 of the construction contracts had been completed within the scheduled completion dates and that the average overruns exceeded 40%. Contract disputes in the early stages of construction may lead to both delays and cost overruns. Due to delay in contract length, cost overruns can lead to a significant proportion of contract price. Guaranteed price contracts are often used to transfer cost overruns risks and liabilities of to the contractors, whereas fixed period contracts guarantee that, if the project fails, the contractor can incur liquidated losses regularly.

Oraro (2012) cautioned that many contracts frequently stall and that due to variance, the contract figures at the inception of the project turn out to swell upwards, nearly twice initial tender. Efficient contract administration and management is a key competency for handling urban roads construction projects. Hussin and Omran (2012), noted that the implications of inadequate contract management that may not show the extent of participation of contracting parties can be disastrous and may entail thorough analysis of factors influencing contract execution and performance that may or may not be reflected in the completion of urban road projects.

2.6 Stakeholders Involvement and Urban Roads Projects Completion in Kenya

The capital-intensive design of road projects needs the stakeholders to engage in conceptualizing and prioritizing the roads to be constructed. A stakeholder is someone who substantially influences or is influenced by a decision of another affecting the project activities, (Chevalier, 2010). Project stakeholders include but not limited to financiers, suppliers, consultants, clients, communities and governments. In the last decade, projects have changed internationally, as globalization introduces a diverse collaborative road project phases and processes of construction. The research results of a study by Toor and Ogunlana (2010) on PPP's major public infrastructures concluded beyond the traditional iron triangle approach, to an awareness that the success of a project is marked to the satisfaction of its stakeholders. Consequently, many global initiatives are actually being carried out in organizations with entirely different cultures, working together to achieve project success. This extra ordinary and valuable phenomenon is composed of various stakeholders who participate from different viewpoints as well as the global project itself (Annon, 2010). Stakeholders typically now have to be recognized as essential to success in the global setting because they can assist in the design and selection of suitable infrastructure projects.

The key criteria for the success of a project have been identified as influential qualities of the stakeholders, their knowledge of the project environment and productive utilization. Studies by McKinsey (2012) on stakeholders' analysis in project execution recorded high rates of project issues and delays caused by stakeholder mismanagement. These shortcomings and significant setbacks are also key to transport development projects and their implementations, (Lavagnon, 2013). Review of related literature by various scholars cited uncertainty and ineffective stakeholder management as the key factors causing construction delays (Aaltonen,

2011; Hietbrink, Hartmann & Dewulf, 2012). A study by Beringer, Jonas and Kock (2013) concluded that challenges within the stakeholder community are largely related to the influential characteristics and behaviors of stakeholders and their knowledge and management, requiring comprehensive analysis, wider skills and inclusive management approaches, techniques and resources to be effectively assessed. According to Chang, Chi, Chew and Pisarski (2013), the goal of the project is to create value for the stakeholders. Progress of the project is considered successful when attaining stakeholder objectives is to their satisfaction. The rewards of a project success are a total of all project deliverables and client or consumer loyalty from a project's base organization. From stakeholder perspective, Beringer et al. (2013) indicated that the key to the performance of a portfolio of infrastructure projects is stakeholder attitudes actions and control of those actions. Chang, (2014) noted that stakeholders have various roles and responsibilities and control over a project, and therefore need contractors to classify the relevant stakeholders. According to Ndungu (2015), failure to identify the appropriate stakeholders would likely pose considerable challenges to projects. An understanding of the fact that stakeholders may have either constructive or detrimental impact over a project is also important, (Kagai, 2012. Although stakeholders who object to a project are often ignored, this may be counterproductive to a project's success. Aaltonen (2011) emphasized on the need to gain support from negative stakeholders whenever possible in order to maximize the likelihood of a project being successful. Therefore, project managers will seek to ensure that all stakeholder interests are catered for and compromise to at least fulfill the minimum specifications.

Mohamed (2012) noted the need to involve the project stakeholders because the stakeholders are persons or group of persons affected or impacted by another party 's decision, and therefore the host community and government agencies may be involved in a road construction project. The researchers found that the needs of the stakeholders in a road construction project need to be considered for successful project implementation. Despite the immense environmental impact of road constructions and the disruption of many other infrastructure services such as transmission lines and water distribution pipes, ensuring that all stakeholders are involved is essential. Ndungu (2015) studied the influence of stakeholders' participation in infrastructure projects in Nakuru County, Kenya. The researcher stated that the stakeholder involvement is crucial through a constructive approach to projects. However, the findings revealed that using a reactive strategy whenever stakeholders are involved is likely to be detrimental only after challenges have arisen. This

occurs mostly when stakeholders aren't involved in dynamic and complex scenarios that have far-reaching impacts on them or the projects. In this case, a project is likely to experience delays while the issues are resolved whereas if negotiations and consultations are conducted during the project lifecycle, delays might be avoided. A contractor is in a position to anticipate challenges in the project, hold meetings with stakeholders and schedule accordingly to ensure that operations run smoothly. Davis (2014) observed that if there is dissatisfaction among the main stakeholders, there is always minimal scope for the success of a project. The study presented relevant stakeholders that included stakeholder groups of senior management, project team and project recipients. The big challenge that was found to influence the projects was lack of consensus among stakeholders on the success factors of the project that resulted in discontinuity of the project support. Zhang, Wu, Shen, and Skitmore (2014) studied the sustainability of road construction projects and observed that the social implications of a project have to be addressed long before beginning the project. For example, the effect of a road construction project on social services such as water and electricity need to be explained. The researchers determined that most of the time, critical services would be disrupted for a construction to be undertaken and therefore the need to involve the party concerned in order to discuss elements of the project such as scheduling. The study suggested that the project contractors should bear the costs of shifting the public services and rehabilitating the affected area once the project has been completed.

Macharia (2016) studied road construction project in Embakasi, Nairobi County, Kenya where the researcher found that when the stakeholders are involved before a road development project, a suitable impact analysis is likely to be carried out. During the project planning process, interests of all stakeholders should be addressed and therefore prevent potential collisions throughout implementation. For instance, it was noted that wide-ranging consultations were conducted prior to the development of the Nairobi Outer Ring Road with a view to capturing the interests of stakeholders and interested parties. This included consultations with stakeholders and public hearings during the preparation of a report on the environmental and social impact assessment (ESIA). At these forums, stakeholders included representatives from the community, groups of small-scale merchants, government agencies such as water regulators, KeNHA, KURA among others. Agreements were established during these sessions about how the project should be executed to provide full value to the stakeholders. Consequently, there was limited opposition from the stakeholders due to their continued participation during the project implementation.

2.7 Theoretical Framework

The research study was grounded on the Theory of Constraints and Stakeholders Theory.

2.7.1 Theory of Constraint

Theory of Constraints' was developed in the 1980s proposed by Eliyahu. The theory of constraints is of the opinion that companies face performance problems as a result of bad management practices coupled with lack of appropriate intervention mechanisms. It also noted that all systems function in a cause-and-effect context. Eliyahu also proposed recognizing key factors that influence an organization's expenditure estimates. He proposed that managers find out how inside the specified budget to address the limitations or obstacles to performance. According to Wideman (2016), the overall performance could be improved by concentrating on solving the key problem. Cooper and Schindler (2003) reported that most companies do not analyze their activities holistically but concentrate only on short-term targets when it comes to the development of cost estimates. This leads to solutions for short-term goals which leave out the long-term goal solutions (Ramabodo, 2012). The relationship between cause and effect can be very complicated, particularly in complex processes such as those of construction projects like urban roads.

Capturing the nature of cause and effect within the structure of an entity and recognizing variables that represent these connections are the vital to the successful completion of road projects. The theory puts the study into perspective, through indicating that focusing on solving the key issues in the construction of Nairobi Inland Container Depot Access Road A project and by extension, other urban road projects is important. This is done through ensuring technical feasibility studies to assess whether the project is viable, by helping to find feasible solutions and by assisting in the creation of other project documents such as business case and project implementation; Project design and requirements are normal and comprehensive, with a summary of the dimensions, layout, workmanship; availability of project funds, ensuring a constant cash flow of project funds; implementation of contract management guidelines; participation and engagement of all construction stakeholders in the execution of road projects, enhancement of project results and assurance of project outcomes and completion.

2.7.2 Stakeholders Theory

Edward Freeman described the stakeholder theory in 1984. The theory suggested shareholders are merely one of several corporate stakeholders. The environment of stakeholders includes everyone who has invested in or influenced the company: workers, suppliers, activists, investors, contractors, environmentalists near the plants, vendors, government agencies, and more. Freeman's theory implies that the actual success of a company lies in pleasing all of its stakeholders, not just those that would benefit from its products. The attributes of strength, importance and validity of statements characterize stakeholder organization and need to be addressed if project managers are to represent the legal and moral interests of relevant parties, (Hwang & Ng, 2013). Therefore, stakeholder theory includes strategies to identify and control project stakeholders and the proportional impact of different stakeholders. According to Rifat and Mohammad (2014), in order to identify stakeholders, it's necessary to have a clear understanding of who a stakeholder is; a stakeholder in an organization is any individual or group of individuals or that can influence or are influenced or affected by the achievement of the objectives and goals of the organization.

A stakeholder community mainly consists of shareholders and creditors, staff, consumers, vendors, public or government agencies, trade unions, and environmental organizations (Gupta & Maltz, 2015). From the theory presented, it can be argued that sector can be described as a dynamic setting with multiple stakeholders who often have different, undefined and divergent objectives. Nevertheless, there was no clear evidence that the transition of working concepts, strategies and hypotheses from the private sector to the public sector were categorically impeded. Nevertheless, the probability of these transfers being successful is considered to be due to the degree of change to match the requirements of the target context (Getz & Page, 2016). Key theory points include recognizing that every institution or project is influenced by a number of stakeholders and may affect the organization or project. Therefore, knowing the interests of key stakeholders is critical for maneuvering an entity or initiative with minimal conflicts arising. Stakeholder analysis is especially useful when mapping a project's primary stakeholders and defining their respective project interests. The stakeholder analysis thus seems to be a suitable candidate solution as a strategic management method for the complexity-related problems of a balanced scorecard.

Mohamed (2013) attributed the development of Corporate Social Responsibility (CSR) to Stakeholder Theory, which implies that the sustainability and success of companies is understood in the interests of their stakeholders through achieving their economic benefit maximization and non-economic corporate social performance objectives. The stakeholder theory predisposes businesses to participate in corporate social initiatives and then consider the effect on the various stakeholder groups on all of its constituents. The view postulates that the financial success of a firm depends on its ability to devise and implement corporate strategy which effectively manages its relationships with stakeholders. Urban road project management views any community of stakeholders in a normative or instrumental manner. The normative point of view suggests that the company should treat the needs of the whole community of stakeholders equally and not only of the consumers or shareholders. In this context, a firm must lay the foundations for a comprehensive CSR initiative in a manner which appeals universally to all stakeholders. The instrumental point of view supports a firm's emphasis on enhancing economic efficiency, claiming that corporate growth is the company's main target. To this end, it is proposed that companies should only lay emphasis those CSR attributes that specifically boost economic output should be emphasized by the firm (Gupta, & Maltz, 2015). The theory on stakeholders specifies the degree to which a company adequately handles its stakeholders and is thus related to corporate social responsibility (Oberseder, Schlegelmilch & Murphy, 2013). This theory thus helps in considering the role of stakeholders in the execution of road infrastructure development projects.

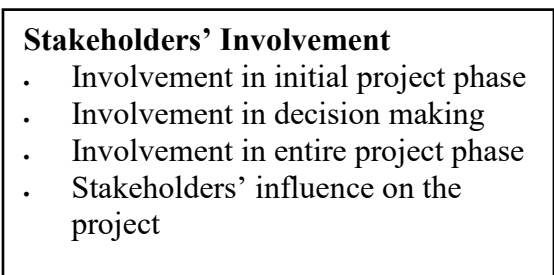
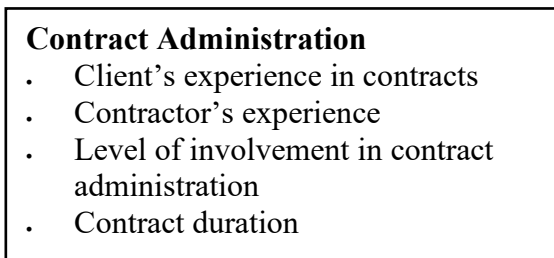
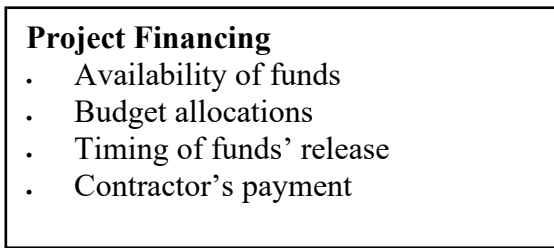
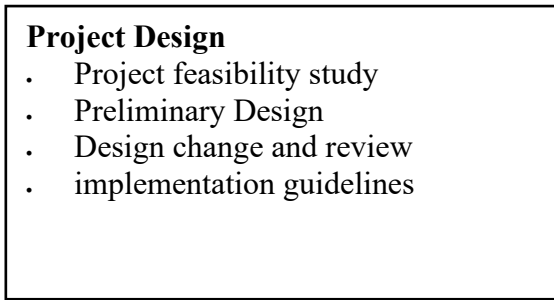
The philosophy of stakeholder management has ethics and cooperative capitalism as a basis for social cooperation and value-production. A philosophy is to represent clients to ensure positive returns. It opposes the notion of trade between powerful and weak stakeholders involved and their expectations as well as interests, (Yang, Shen, Ho, Drew, & Xue, 2011) The purpose of urban road infrastructure projects is to provide value; they are an organization's strategic component that impacts a variety of concerns and should be managed and integrated with corporate policy and stakeholder governance principles. Transport infrastructure projects such as urban road infrastructure development should therefore encourage the satisfaction of the stakeholders involved; Calling for no trade between parties and actively promoting communication, engagement, participation and empowerment of the stakeholders, and also suggesting continual assessment and improvement of processes leading to greater successes and efficiency of transport projects because management system

for stakeholders facilitates greater results through more responsible management and governance. The theory brings to light the fact that there are a range of stakeholders that urban road contractors and other parties can consider when undertaking construction projects to achieve success. This goes for the construction of Nairobi Inland Container Depot Access Road A. Therefore, a company should be able to adapt its mode of operation to meet the needs of its stakeholders and at the same time ensure that the overall objective of carrying out the tasks set is achieved. Stakeholder involvement and consideration of the social effects of road building projects are defined as crucial factors that decide the success of such projects. In addition, the study appreciates the value of negotiations with stakeholders to ensure that road construction projects are implemented successfully.

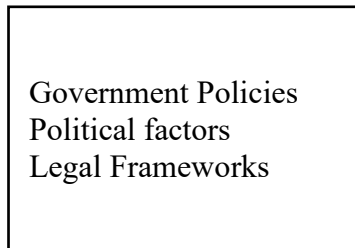
2.8 Conceptual framework

A conceptual framework is a visual representation of how the various variables relate to each other. The independent variable is a factor that affects the action or outcome of another variable whereas the dependent variable is a variable that, if observed over time and calculated, is capable of evaluating the effect of the independent variable. In this study, the independent variables were the determinants while the dependent variable were urban roads projects completion in Kenya. The study's moderating variables were government policies and legal frameworks. The determinants researched on were project design, project financing, contract administration and stakeholders' involvement and completion of urban roads projects. The research study aimed at assessing whether there was a relationship existing between the two variables and whether determinants had direct impacts on the completion of urban roads projects.

Independent Variables



Moderating Variables



Dependent Variable

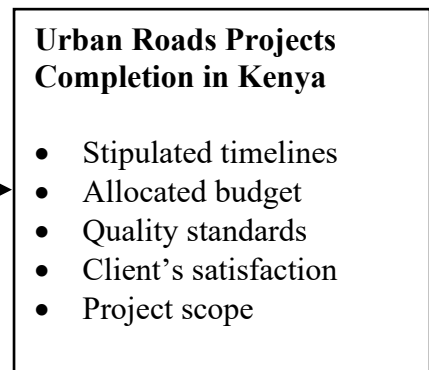


Figure 1: Conceptual Framework

2.9 Summary of Literature Review

The chapter addressed an in-depth literature review that included the theoretical evaluation of empirical results from previous research done by other scholars around the world regarding the determinants affecting urban road completion projects. Studies and theories have shown that the construction of urban roads is challenged by time and costs over runs, affecting a project's scope, funds, client's satisfaction and quality. Road projects and construction of infrastructure that are completed on time, on budget and within the stipulated timelines are important for social and economic developments and for promoting pro-poor growth. A country's insufficient or incomplete road infrastructures hinder its regional, national, and local economic development and growth as well as its international competitiveness.

2.10 Knowledge Gap Matrix

Table 2.1: Knowledge Gap Matrix

Variables	Author(s) & Year	Focus of Study	Findings	Knowledge Gaps
Project design and urban roads projects completion in Kenya	Karim and Marosszeky (2019)	Process management to re-engineer processes using main performance measures	The design adjustments resulted in insufficient project design; reducing the project life cycle and increased damage to the pavements and raising maintenance	The study focused on Eastern and Central European countries only. It was not clear if the same research findings can apply in project design in Urban Roads project in developing countries.
	Han, Sangwon, and Feniosky, (2013)	Dynamic systems model for evaluating the effects of design errors in building projects	Project design failures resulted in some reworks in construction projects and change in the project timeline by 5-20 percent	The research study didn't point if the 5-20% phenomena of cost overrun due to design changes is universal. Further studies can be done to evaluate if there is a standard percentage on the cost overruns due to design changes
Project financing and urban roads projects completion in Kenya	Hussin and Omran (2012)	Consequences of Incomplete Projects construction in	Projects had not been completed because of financial inadequacy and	The study did not elaborate on the financial and contractor's inadequacy factor, leaving a broad knowledge gap to

Variables	Author(s) & Year	Focus of Study	Findings	Knowledge Gaps
	Chepkoech (2012)	Malaysia Road Provision of roads by Kenya Urban Roads Authority	contractors' Incompetency. Completion of the construction of Kericho-Kisumu delayed due to project funds being diverted on political grounds	be studied Other factors that caused delay of the Kericho Kisumu road were not investigated and can be researched on.
Project Contract Administration and Urban Roads Projects Completion in Kenya.	Assaf and Al-Hejji (2016) Koushki, Al-Rashid and Kartam (2015)	Delay triggers for major building construction projects Contract delays in the construction sector	Thirty per cent of building projects were finished on within the scheduled timelines. Sixty four percent of construction managers had set fines for any delay in contracts.	The study failed to define the kind of construction projects that were researched on and if 30% of the projects completed on time includes urban roads projects. Project delays and failures are due to a combination of factors. Only the research study was captured and therefore the factors contributing to the delays can be investigated
Project Stakeholders'	McKinsey	Analyzing project	Most project delays are	Stakeholders' level of participation and

Variables	Author(s) & Year	Focus of Study	Findings	Knowledge Gaps
involvement and Urban Roads Projects Completion in Kenya.	(2012)	partners during project implementation	attributed to stakeholders' mismanagement.	influence on completion of urban roads project was not explored.
	Toor and Ogunlana (2010)	PPP's public sector infrastructure projects	Perceptions and satisfaction of the stakeholders are key to the success of a project.	The study failed to capture other stakeholders' factors such as community participation, stakeholders' management and influential support for a project's success
Urban Roads Projects Completion in Kenya.	Ramabodo (2012)	The causes and consequences of road building project delays and disruption in the middle east	Twenty percent of the Gulf Cooperation Council's building programs were placed on hold and 24 percent were cancelled	The study was done in the Middle East construction projects and due to the large number of road transport infrastructure projects going on all the world, the study findings cannot be generalized to Urban roads projects.
	Yvas (2013)	Causes for delay in the construction of projects in developing nations	80% of road infrastructure projects were deferred, and almost half of the projects were	In order for the study data to be useful to future transport infrastructure development without delays, further

Variables	Author(s) & Year	Focus of Study	Findings	Knowledge Gaps
			overdue by more than 6 months	research can be carried out on delay factors associated with urban roads projects

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines research methodology that were used in conducting the study investigation. It consisted of the research design, target population, sample size and sampling procedures, data collection methods, validity and reliability, methods of data analysis, operational definition of variables and ethical considerations.

3.2 Research Design

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

3.3 Target Population

The target population of this study was staff working for Kenya Railways, NICD Consultant (CAEC) and the NICD Contractor (CRBC) making a total of 90 respondents. The respondents formed the target population of this study owing to their rich understanding and knowledge on the research topic, having been involved in the design and implementation of Nairobi Internal Container Depot Road A project. Respondents had experience that was directly related to the study of determinants influencing completion of urban roads projects.

Table 3.1: Target Population

Categories	Target Population (N)
Staff working for Kenya Railways	30
Staff working for NICD Road A Consultant	30
Staff working for NICD Road A Contractor	30
Total	90

Source: Kenya Railways Report, 2020

3.4 Sample Size and Sampling Procedures

Kothari (2004) indicated sampling as the process of obtaining information about the entire population by examining its sample. The sample size for this research study was derived from the target population of 90 respondents, using Krejcie & Morgan (1970) Table.

3.4.1 Sample Size

The sample size for the research study that was a representative of the target population was 84, as derived from the target population of 90 respondents. Sample size determination Table 3.2 is derived from Krejcie & Morgan (1970) Table.

Table 3.2 Sample Size

Categories	Sample Size (n)	Percentage (n /N) * 100 (%)
Project Engineers	30	33.20
Surveyors	15	16.67
Contract Managers	15	16.67
Designers	10	11.11
Liaison Managers	10	11.11
Financial Advisers	4	4.44
TOTAL	n=84	100

Source: Derived using Krejcie and Morgan (1970) Table

3.4.2 Sampling Procedures

Due to the heterogeneous existence of the target population, stratified random sampling technique was employed in the study. Participants were chosen in each stratum according to their suitability to participate in the study. Samples were obtained randomly from each sampling unit such that each respondent from the population had an equal opportunity to be selected (Creswell, 2009). The number of elements from each sample of the population was according to the proportion of the population under study (Faridullah, 2010). Purposive sampling technique were used to obtain qualitative data from Kenya Railways Project Manager, Consultant-CAEC Team Leader and Contractor-CRBC Project Manager because they were the key project implementers with deep knowledge about the construction of ICD

Road A. Interview participants are purposively selected to include only people who meet the specific criteria determined by the researcher's judgment (Taiwo, 2013).

3.5 Data Collection Instruments

In this study, an interview guide for Kenya Railway's Project Manager, Consultant's Team Leader and Contractor's Project Manager was used to collect qualitative data. A semi-structured questionnaire for the staffs working for Kenya Railways, Road A Consultant-CAEC and Contractor-CRBC was used to collect quantitative data. A semi structured questionnaire was appropriate for this research study because they collect comprehensive data from the research respondents. A questionnaire is a dynamic way gathering data from a wide majority of individuals in any defined timeframe (Gay, 1996). The questionnaire had an introductory note describing the research study's intent. It was written in English and clear, simple and concise instructions were given for completing the questionnaires. Open ended questions and a Likert scale approach using a five-point scale was used to collect research data. The questionnaire was divided into six sections that were in line with the study objectives. Objectives' statements were marked by selecting each category with a corresponding numerical score. The respondents were asked to place themselves on an attitude continuum ranging from Strongly disagree=1; Disagree=2; Neutral=3; Agree=4; Strongly Agree =5.

3.5.1 Piloting of the Instruments

Mugenda and Mugenda (2003) theory guided the selection of the piloting of the research instruments. The theory suggested that depending on the sample size of the study, the piloting sample should be between 1% and 10% of the study sample. Calculating a 5 % of the study sample size of 84, questionnaire pilot testing was done by randomly choosing 5 respondents from a sample that did not participate in the actual study. The pilot testing was carried out on Western bypass project which is in Kiambu County. This was because the road project has similar characteristics as those of the NICD Access Road A it been in a densely populated area where land use is crucial. According to McDaniel & Gates (1996), the pilot testing questionnaire is structured with open-ended questions to recognize additional research aspects which may be included in the survey. The questionnaires were administered by the researcher, allowing clarification of queries as deemed necessary and examine respondents' understanding of questions of research. Questionnaires were designed for the pilot

respondents to integrate feedback. The feedback assisted in eliminating ambiguity, inconsistency or redundancy in the questionnaire, hence collecting useful and meaningful information.

3.5.2 Validity of the Instruments

Validity is the meaningfulness, accuracy and usefulness of evidence that is used to support the interpretations of research data (Cooper & Schindler, 2013). Content validity is meant to yield logical judgement if research instruments measure what they are supposed to measure. According to research experts, before administering a research instrument, it's good to ensure it clearly defines what's to be measured, checked by a panel of experts and contains open-ended questions in order to identify other contents that can be included in the study (McDaniel & Gates, 1996). To ensure content validity, the researcher asked the academic research supervisor and three experts in the field of urban roads transport projects namely KR's project manager, Consultant Team Leader and Contractors Project Manager to critically examine the questionnaire for their representativeness. They had sufficient experience and knowledge concerning the study and therefore, they made valid observations, suggestions, recording procedures and any other item of concern in the research instrument. Variables' statements were phrased and constructed according to suggestions that were given. Upon approval by the experts, the researcher administered the questionnaires for data collection. The study used interview guide to collect qualitative data. The line of interview questions was drawn from the study objectives in order to give an in-depth view of all the study variables.

3.5.3 Reliability of the Instruments

Reliability refers to the extent in which results from a study are consistent over a certain period of time and their accurate representation of the population under the research study (Juppe, 2000). It indicates the stability and consistency with which the data collection instruments measure the concepts. To estimate reliability, repeated measurements was used, with administration of an alternative form method. According to Berg (2001), the structured and concise line of inquiries was intended for the reliability and potential study replication. Cronbach's alpha values will be computed to measure the internal consistency reliability for multipoint scaled items in the questionnaires. Cronbach alpha values ranges from 0 to 1, with the accuracy of the data sets described by high values close to 1. A reliability coefficient with

a score of 0.7 is considered to be the acceptable criterion for scale reliability in the social sciences (Gay, 1996). For this study, the Cronbach values was found to range between 0.769 to 0.835, revealing a high reliability of the research instruments.

Table 3.3 Reliability Co-efficient

Line Statements Scale	Cronbach's Alpha Value
Project Design	.835
Project Financing	.808
Contract Administration	.769
Stakeholders Involvement	.824

3.6 Data Collection Procedures

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

3.7 Data Analysis Techniques

Qualitative and quantitative data was collected in this research study. The quantitative data collected was analyzed using descriptive statistics. The data was thoroughly screened for completeness, accuracy and uniformity, keyed into and coded by Statistical Package for Social Sciences software. Data was analyzed using arithmetic mean, standard deviation, percentages and frequencies. Data was presented in tables. Inferential statistics which include Pearson Correlation Coefficient was computed to measure the influence of the independent variables on the dependent variable. Qualitative data gathered from the interviews and open-

ended questions in the questionnaire was analyzed thematically to identify common themes and ideas that come up in line with the study objectives.

3.8 Ethical Consideration

Ethical standards were observed while administering questionnaires in order to promote collaborative work create accountability, trust, fairness and mutual respect between the respondents and the researcher. Research permit to collect the study data was sought from NACOSTI. The questionnaires contained a cover letter asking the respondent for their permission to take part in the study and were signed individually. Respondents were assured of their confidentiality and the information given was not to be used for malicious purposes but for this research study only. Belmont Report (2015) outlines the four well known ethical principles that constitute the basis for ethics in research study and which the researcher observed in the course of the study. The principle of non-maleficence, stated that the research must not cause any harm to the respondents or people in general; The principle of beneficence, stated that the work of research should make positive contribution towards people's welfare; The principle of autonomy, stated that the research must respect and protect the rights and also dignity of the respondents and finally, the principle of justice, stated that research benefits and risks should be distributed fairly among people.

3.9 Operationalization of Variables

Table 3.4 Operationalization of Variables

Objectives of the Study	Variables	Indicators	Scale of Measurement	Data Analysis Techniques	Tools of Analysis
To determine how Project Design influence Urban Roads Projects Completion in Kenya.	Independent Variable Project Design	<ul style="list-style-type: none"> . Project feasibility study . Preliminary Design . Design change and review . Design implementation 	Ordinal Interval	Descriptive Statistics Inferential Statistics Content Analysis	Mean S.D Frequencies Percentages
To examine how Project Financing influence Urban Roads Projects Completion in Kenya.	Independent Variable Project Financing	<ul style="list-style-type: none"> . Availability of funds . Budget allocations . Timing of funds' release . Contractor's payment 	Ordinal Interval	Descriptive Statistics Inferential Statistics Content Analysis	Mean S.D Frequencies Percentages
To assess how Project Contract Administration influence Urban Roads Projects Completion in Kenya.	Independent Variable Project Contract Administration	<ul style="list-style-type: none"> . Client's experience in contracts . Contractor's experience in contracts . Level of involvement in contract administration . Contract duration 	Ordinal Interval	Descriptive Statistics Inferential Statistics Content Analysis	Mean S.D Frequencies Percentages

Objectives of the Study	Variables	Indicators	Scale of Measurement	Data Analysis Techniques	Tools of Analysis
To establish how Stakeholders' involvement influences Urban Roads Projects Completion in Kenya.	Independent Variable Stakeholders' involvement	<ul style="list-style-type: none"> • Involvement in the initial project phase • Involvement in decision making • Involvement in the entire project phase • Stakeholders' influence on the project 	Ordinal Interval	Descriptive Statistics Inferential Statistics Content Analysis	Mean S.D Frequencies Percentages
The purpose of the study is to research on Determinants of Urban Roads Projects Completion in Kenya.	Dependent Variable Urban Roads Projects Completion in Kenya	<ul style="list-style-type: none"> • Stipulated timelines • Allocated budget • Quality • Client's satisfaction • Project scope 	Ordinal Interval	Descriptive Statistics Inferential Statistics Content Analysis	Mean S.D Frequencies Percentages

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATIONS

4.1 Introduction

This chapter contains data analysis, presentations and interpretation of the research findings. The sub themes covered are the introduction, questionnaire return rate, personal information of the respondent, data presentation and summary. The variables used were Project Design, Project Financing, Contract Administration and Stakeholders' Involvement. Quantitative data was coded using the SPSS analytical tool and the descriptive statistics analyzed using arithmetic mean, standard deviation, presented, frequencies and percentages and presented in tables.

4.2 Questionnaire Return Rate

The quantitative data was obtained using questionnaires. The research study had a sample size of eighty-four respondents. Eighty-four questionnaires were administered. Eighty-two questionnaires were filled and returned, achieving a return rate of 97.6%. A response rate of 50% is satisfactory, 60% is good, 70% is really good, 80% and above is excellent, (Mugenda and Mugenda, 2003). Questionnaire return rate of 97.60% was excellent and appropriate for data analysis. The findings are indicated in table 4.1

Table 4.1 Questionnaire Return Rate

Research Instrument	Sample Size	Percentage (%)
Questionnaires returned	82	97.60
Questionnaires not returned	2	2.40
Total	84	100

4.3 Personal Information of the Respondents

The respondents were requested to indicate the following personal information: Work sector; Duration of employment in the organization; Position held in the organization and Highest academic qualifications.

4.3.1 Respondents' Work Sector

The study sought to determine the organization the respondents were working in. The findings are indicated in Table 4.2

Table 4.2 Respondents' Work Sector

Gender	Frequency	Percentage (%)
KR	27	32.93
CAEC	28	34.14
CRBC	27	32.93
Total	82	100

From the findings, 34.14% of the respondents were working for the project consultant (CAEC), while respondents working for both the project client (KR) and contractor (CRBC) achieved 32.93% representation each. The equal distribution of participants in each stratum ensured more accurate, reliable and unbiased data was collected for the study.

4.3.2 Respondents' Highest Academic Qualification

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

Table 4.3 Respondents' Highest Academic Qualification

Highest Academic Qualification	Frequency	Percentage (%)
PhD	0	0.00
Masters	1	1.22
Undergraduate	59	71.95
Diploma	13	15.85
Certificate	9	10.96
Total	82	100

The study findings, 71.95% of the respondents had an undergraduate degree, 15.85% had diplomas, 10.96% had certificates, 1.22% had a master's degree and none had a doctorate degree. These findings depicted that the respondents were educated and understood the questionnaire's line statements.

4.3.3 Respondents' Duration of Service in the Organization

The study sought to determine the number of years the respondents had worked in their respective organizations. The results are indicated in Table 4.4

Table 4.4: Respondents' Duration of Service in the Organization

No. of Years	Frequency	Percentages (%)
1 - 3 years	5	6.09
4 - 6 years	43	52.43
7 - 9 years	21	25.61
10 - 12 years	11	13.41
Above 12 years	2	2.43
Total	82	100

From the study findings, 52.43% of the respondents had 4 to 6 years' duration in their organization, 25.16% had 7 to 9 years' duration, 13.41% had 10 to 12 years' duration, 6.09% had 1 to 3 years' duration and 2.43% had above 12 years of work service. 58.52% of the respondents had worked in their organization for a period between 1 and 6 years, falling within the implementation period of the Nairobi ICD Access Road A. This meant they were versant with the research topic.

4.3.4 Respondents' Position in the Organization

The study sought to determine respondents' position in their respective organization. The results are indicated in Table 4.5

Table 4.5: Respondents' Position in the Organization

Position	Frequency	Percentage (%)
Project Manager	3	3.66
Engineer	37	45.12
Designer	15	18.29
Financial Manager	15	18.29
Surveyor	6	7.32
Liaison Manager	4	4.88
Any Other	2	2.44
Total	82	100

According to the study findings, 45.12 % the respondents indicated they were engineers, 18.29% were designers, 18.29% were financial managers, 7.32% were surveyors, 4.88% were liaison managers, 3.66% were project managers and 2.44% were others. Majority of the respondents were within the categories the researcher had hoped to collect data from and well understood the research objectives.

4.4 Urban Roads Projects Completion in Kenya

The study sought to investigate Urban Roads Projects Completion in Kenya.

4.4.1 Delay in Completion of Road A Construction Has Caused Congestion at Nairobi Inland Container Depot

Respondent were asked to give their opinion on whether the delay in completion of Road A construction has caused the congestion currently being experienced at the Nairobi Inland Container Depot. The findings are as shown in table 4.6

Table 4.6: Delay in Completion of Road A Construction Has Caused Congestion at Nairobi Inland Container Depot

Responses	Frequency	Percentage (%)
Yes	76	92.68
No	6	7.32
Total	82	100

The study findings indicated that 92.68% of the respondents opined that the congestion currently being experienced at the Nairobi Inland Container Depot was as a result of the delay in completion of Road A construction. A low percentage of the respondents, 7.32%, indicated that the congestions was not related to the delays in construction.

4.4.2 Respondents' Reasons for the Delay in Completion of Road A Construction Project

The study sought to determine the respondents' reasons for the delay in completion of Road A construction project. The findings are as indicated in table 4.7

Table 4.7: Respondents' Reasons for the Delay in Completion of Road A Construction Project

Responses	Frequency	Percentage
Project Design	52	63.41
Stakeholders' Involvement	19	23.17
Contract Administration	11	13.42
Total	82	100

From the study findings, 63.41% of the respondents indicated project design as the reason for the delay in completion of Road A construction project, 23.17% indicated stakeholders' involvement while 13.42% indicated contract administration as the reason for the delay.

4.4.3 Statements Relating to Urban Roads Projects Completion in Kenya

The study sought to determine the extent to which the respondents agreed with statements relating to Urban Roads Projects Completion in Kenya. The respondents were requested to use Strongly agree (SA)=5, Agree(A)=4, Undecided(U)=3, Disagree(D)=2, and Strongly Disagree (SD)=1. The results are indicated in table 4.8

Table 4.8: Statements Relating to Urban Roads Projects Completion in Kenya

Statements	1	2	3	4	5	Mean	S. D
Road A Project is not implemented within stipulated time	2 (2.44)	5 (6.10)	3 (3.66)	26 (31.71)	46 (56.10)	4.329	3.920
Time delays are common in urban roads construction projects	2 (2.44)	1 (1.22)	7 (8.54)	6 (7.32)	66 (80.49)	4.622	4.185
Allocated budget is inadequate in urban road projects	13 (15.85)	12 (14.63)	30 (36.6)	9 (10.98)	18 (21.95)	3.085	2.863
Allocated budget is a delay factor in road construction	39 (47.56)	12 (14.63)	7 (8.54)	9 (10.98)	15 (18.29)	2.378	2.404
Budget over runs can be controlled	10 (12.20)	27 (32.91)	18 (21.95)	14 (17.07)	13 (15.85)	2.915	2.682
Road A face unclear quality standards	23 (28.05)	16 (19.51)	16 (19.51)	15 (18.29)	12 (14.63)	2.720	2.585
Project budget does not affect duration of a project	56 (68.29)	11 (13.41)	5 (6.10)	6 (7.32)	4 (4.88)	1.671	1.577
Clients' satisfaction has affected completion of road A project	18 (21.95)	9 (10.98)	35 (42.68)	17 (20.73)	3 (3.66)	2.732	2.449
Project scope means creating all project deliverables	1 (1.22)	2 (2.44)	2 (2.44)	13 (15.85)	64 (78.05)	4.671	4.208
Composite Mean and Standard Deviation						3.236	2.986

The results in Table 4.8 indicated that the statements related to time and Urban Roads Projects completion in Kenya attained a mean of 4.622 and a standard deviation of 4.185

which was higher than the composite mean of 3.236 and a composite standard deviation of 2.986 implying that time as an indicator had a positive influence.

On scope, a mean of 4.671 and a standard deviation of 4.208 was attained which was higher than the composite mean of 3.236 and a composite standard deviation of 2.986. This implied that scope had a positive influence.

On cost, a mean of 2.915 and a standard deviation of 2.682 was attained which was lower than the composite mean of 3.236 and a composite standard deviation of 2.986. This implied that cost had a negative influence.

Three interviews were conducted on urban roads project completion in Kenya. Client's Project Manager was asked the reasons that have contributed to the unsuccessful implementation of Road A project and pointed out there have been different discrepancies between the actual works at NICD Access Road A site compared to the work scheduled, failing to meet expected completion time, leading to various negative effects on the project. The project stakeholders' failure to achieve a detailed overview of the development phase from start to finish was likely to be the reason why the expected delivery date has not been realized.

The Consultant Team Leader was asked if quality was compromised due to contractual pressure for the contractor to complete the road. The response given was that project quality is a combination of the standards and criteria to which the project's products must be delivered for them to perform effectively. Quality on a project is controlled through quality assurance, which is the process of evaluating overall project performance on a regular basis to provide confidence that the project will satisfy the relevant quality standards. With that in mind, it was assured that supervision was done and quality of Access Road A was up to the standards and would be maintained until project completion

The Contractors' Project Manager was asked if the delay of Road A construction had resulted in the congestion currently being experienced at the Nairobi Inland Container Depot. The response given was that the congestion experienced was mostly due to the incompleteness of the access road project. The road was meant to serve as a large capacity transport channel, to meet the transportation requirements for the freight consignment from Mombasa to NICD. This being the main reason for its construction, therefore in its incomplete state, it was creating congestion at the Nairobi container depot.

4.5 Project Design and Urban Roads Projects Completion in Kenya

The study sought to determine project design and Urban Roads Projects Completion in Kenya.

4.5.1 Respondents' Opinion on the Influence of Project Design on Urban Roads Completion

The study sought to determine the respondents' opinion on the influence of project design on urban roads completion. The findings are as indicated in table 4.9

Table 4.9: Respondents' Opinion on the Influence of Project Design on Urban Roads Completion

Responses	Frequency	Percentage (%)
Yes	73	89.02
No	9	10.98
Total	82	100

The study findings showed that 89.02% of the respondents opined that project design influence urban roads completion while 10.98 % had a contrary opinion on the same.

4.5.2 The Challenges Affecting Road A Project Design

The study sought to determine the challenges affecting road a project design. The findings are as indicated in table 4.10

Table 4.10: The Challenges Affecting Road A Project Design

Responses	Frequency	Percentage
Harmonization of Chinese with Kenyan Roads standards	33	40.24
Inadequate land use hence constant design changes	27	32.93
Presence of numerous collector roads	22	26.83
Total	82	100

From the study findings, 40.24% of the respondents indicated a need to harmonize the Chinese road standards with Kenyan roads standards in terms of the head room or road clearance. 32.93% indicated land use was inadequate hence the road designs were constantly changed to accommodate road geometry, the road alignment, curves and gradients. 26.83% indicated that the presence of numerous collector roads due to the dense population along the alignment was a challenge affecting road A project design.

4.5.3 Statements Relating to Project Design

The study sought to determine the extent to which the respondents agreed with statements relating to Project Design. The respondents were requested to use Strongly agree (SA)=5, Agree(A)=4, Undecided(U)=3, Disagree(D)=2, and Strongly Disagree (SD)=1. The results are indicated in table 4.11

Table 4.11: Statements Relating to Project Design

Statements	1	2	3	4	5	Mean	S. D
Road A Project feasibility studies was done	9 (10.98)	23 (28.05)	20 (24.39)	16 (19.51)	14 (17.03)	3.037	2.789
Feasibility studies do not guarantee project completion	3 (3.66)	4 (4.88)	4 (4.88)	26 (31.71)	45 (54.87)	4.293	3.895
Design standards has influenced completion of Road A project	10 (12.20)	12 (14.63)	13 (15.83)	31 (37.80)	16 (19.51)	3.378	3.112
Not all stakeholders were involved in Road A preliminary design	49 (59.76)	19 (23.17)	10 (12.20)	3 (3.66)	1 (1.22)	1.634	1.370
Design changes are inevitable in roads construction projects	17 (20.73)	12 (14.63)	41 (50.00)	6 (7.32)	6 (7.32)	2.659	2.374
Design changes contribute to project delays	11 (13.41)	17 (20.73)	34 (41.46)	8 (9.76)	12 (14.63)	2.914	2.646
Proper design implementation leads to successful projects	0 (0.00)	0 (0.00)	1 (1)	33 (40.24)	48 (58.54)	4.573	4.076
Project design and implementation process is costly	16 (19.51)	18 (21.95)	11 (13.41)	21 (25.61)	16 (19.51)	3.037	2.867
Composite Mean and Standard Deviation						3.190	2.891

The results in Table 4.11 indicated that the statements related to feasibility and project design attained a mean of 4.293 and a standard deviation of 3.895 which was higher than the composite mean of 3.190 and a composite standard deviation of 2.891 implying that feasibility study as an indicator had a positive influence.

On design standards, a mean of 3.378 and a standard deviation of 3.112 was attained which was higher than the composite mean of 3.190 and a composite standard deviation of 2.891. This implied that design standards had a positive influence.

Regarding design changes, a mean of 2.914 and a standard deviation of 2.646 was attained which was lower than the composite mean of 3.190 and a composite standard deviation of 2.891. This implied that design change had a negative influence.

Three interviews were conducted on project design. In the first interview, the researcher sought to establish the magnitude of the impacts of design errors on urban roads projects. The Consultant Team Leader responded that the Design errors results in reworks in road construction project causing 5% to 20% increase in the project costs. The respondent further indicated that cost overrun owing to project design, design changes or errors as common to all roads, urban or otherwise. Nearly every country experiences the unfavorable impact of changes in design on project cost efficiency.

The Contractors' Project Manager was asked to indicate how many road design options were available, and pointed out that in road design, the horizontal and vertical alignments are important factors to consider as is, adjusting the road alignment to the constraints imposed by the terrain. Free alignments and the convectional designs were made available. Constant adjustments were however made to accommodate the inadequacy of land use, in terms of the gradient, curves and clearance.

Interview data indicated that design changes had an effect on the commercial contract scope further the Client's Project Manager indicated that change in the project scope of work is inevitable and it arises due to a variety of reasons which included the change in an owner's needs or expectations, design errors and/or omission, differing site conditions not envisioned in the original contract price, changes to the project scope of work due to constructability issues or conflicts between systems, and modifications due to actions or inactions of third-

parties or even changes arising due to reasons beyond anyone’s control. All these affected the contract scope

4.6 Project Financing and Urban Roads Projects Completion in Kenya

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

4.6.1 Impact of the Financing Approach used on Road A’s Construction Delays

The study sought to determine if the financing approach that was used had an impact on Road A’s construction delays. The study findings are as shown in table 4.12.

Table 4.12 Impact of the Financing Approach used on Road A’s Construction Delays

Responses	Frequency	Percentage
Yes	3	3.66
No	79	96.34
Total	82	100

The study findings showed that 99.34% of the respondents indicated financing approach that was used did not have impact on Road A’s construction delays. 3.66% of the respondents indicated that the financing approach used had an impact on the road construction.

4.6.2 Respondents’ Suggestions Concerning Urban Road Project’s Financing

The study sought to determine the respondents’ Suggestion Concerning Urban Road Project’s Financing. The findings are as indicated in table 4.13

Table 4.13: Respondents’ Suggestions Concerning Urban Road Project’s Financing

Responses	Frequency	Percentage
Use PPP Financing	61	74.39
Road Annuity Programs	21	25.01
Total	82	100

From the study findings, 74.39% of the respondents suggested that urban road projects to be financed using PPP model of project financing while 25.01% suggested that road annuity programs to be used to finance urban roads projects.

4.6.3 Statements Relating to Project Financing

The study sought to determine the extent to which the respondents agreed with statements relating to Project Financing. The respondents were requested to use Strongly Agree (SA)=5, Agree(A)=4, Undecided(U)=3, Disagree(D)=2, and Strongly Disagree (SD)=1. The results are indicated in Table 4.14

Table 4.14 Statements Relating to Project Financing

Statements	1	2	3	4	5	Mean	S. D
Road A's completion is dependent on availability of funds	1 (1.22)	8 (9.76)	2 (2.44)	28 (34.15)	43 (52.44)	4.268	3.864
Government's funding for Road A project is limited	5 (6.10)	21 (25.61)	16 (19.51)	12 14.63)	28 (34.15)	3.451	3.204
Road's finance management is complex	21 (25.61)	20 (24.39)	36 (43.90)	3 (3.66)	2 (2.44)	2.329	2.012
Cost variation occurred in Road A project implementation preliminary design	4 (4.88)	11 (13.41)	18 (21.95)	31 (37.80)	18 (21.95)	3.585	3.242
Project funds were released by the client on time	5 (6.10)	1 (1.22)	11 (13.41)	42 (51.22)	23 (28.05)	3.939	3.548
Road A project funds were diverted to other projects	23 (28.05)	16 (19.51)	30 (36.59)	6 (7.32)	7 (8.54)	2.488	2.274
Contractor's payment is equal to the construction work done	3 (3.66)	8 (9.76)	4 (4.88)	22 (26.81)	45 (54.88)	4.195	3.832
Contractor is paid in installments	26 (31.71)	21 (25.61)	12 (14.63)	13 (15.83)	10 (12.20)	2.512	2.394
Composite Mean and Standard Deviation						3.346	3.046

The results in Table 4.14 indicated that the statements related to availability of funds and project financing attained a mean of 4.268 and a standard deviation of 3.864 which was higher than the composite mean of 3.346 and a composite standard deviation of 3.046 implying that availability of funds as an indicator had a positive influence.

On contractor's payment, a mean of 4.195 and a standard deviation of 3.832 was attained which was higher than the composite mean of 3.346 and a composite standard deviation of 3.046. This implied that contractor's payment had a positive influence.

Regarding diverted funds, a mean of 2.488 and a standard deviation of 2.274 was attained which was lower than the composite mean of 3.346 and a composite standard deviation of 3.046. This implied that diverting funds had a negative influence.

Interview data on project financing by Clients Project Manager indicated that Project sustainability was key and that Governments, financiers, sponsors and all involved in road implementation had to have a cohesive approach to transformation, quality improvement and innovative approaches which can be developed through the introduction of models for financial performance management, transport infrastructure and construction organizations.

The Consultants Team Leader reported that change in the financing approach had no impact on Road A delay' since the project was being implemented on a PPP scheme (EPC Contract), meaning the private entity was the major financier. It was further added that Project budget was not a major issue which meant PPP is actually the way forward for infrastructure development in Kenya.

4.7 Contract Administration and Urban Roads Projects Completion

The study sought to determine Contract Administration and Urban Roads Projects Completion.

4.7.1 Respondents' Involvement in Road A Project Contract Administration Process

The study sought to investigate whether the respondents were involved in the Road A project contract administration process. The results are indicated in table 4.15.

Table 4.15: Respondents' involvement in the Road A project Contract Administration process

Responses	Frequency	Percentage
Yes	36	43.90
No	46	56.10
Total	82	100

The study findings indicated that 43.90% of the respondents were involved in the in the Road A project contract administration process. 56.10 % of the respondents indicated they were not involved.

4.7.2 Respondents' Suggestions to Improve Road Contract Administration in Densely Populated Urban Areas Like the Nairobi ICD

The study sought to determine the respondents' suggestions to improve road contract administration in densely populated urban areas like the NICD. The results are as indicated in table 4.16

Table 4.16: Respondents' Suggestions to Improve Road Contract Administration in Densely Populated Urban Areas Like the Nairobi ICD

Responses	Frequency	Percentage
Align the road projects with FIDIC Conditions of Contract administration	46	56.10
Have experienced project managers from the project clients	36	43.90
Total	82	100

The study findings showed that 56.10% of the respondents suggested that road projects should be aligned with FIDIC Conditions of Contract administration, in order to guide on projects formulation and implementations. 43.90% suggested that the project's client should have experiences project managers who have undertaken both rail and road projects.

4.7.3 Statements Relating to Contract Administration

The study sought to determine the extent to which the respondents agreed with statements relating to Contract Administration. The respondents were requested to use Strongly agree (SA)=5, Agree(A)=4, Undecided(U)=3, Disagree(D)=2, and Strongly Disagree (SD)=1. The results are indicated in table 4.18

Table 4.17 Statements Relating to Contract Administration

Statements	SD	D	U	A	SA	Mean	S. D
Road A project client has experience in contract administration	5 (6.10)	6 (7.32)	3 (3.66)	17 (20.73)	51 (62.20)	4.256	3.911
Client's decisions in contract administration has led to project delay	8 (9.76)	5 (6.10)	24 (29.27)	12 (14.63)	33 (40.24)	3.695	3.418
Road A Contractor has experience in urban road contracts	1 (1.22)	1 (1.22)	5 (6.10)	29 (35.37)	46 (56.10)	4.439	3.982
Contractor with international project experience are preferred	21 (25.61)	11 (13.41)	15 (18.29)	19 (23.17)	16 (19.51)	2.976	2.837
Road A's contract's level of involvement is clear	30 (36.59)	12 (14.63)	16 (19.51)	9 (10.98)	15 (15.29)	2.598	2.538
Contract type determined the involvement of the project team	4 (4.88)	1 (1.22)	2 (2.44)	7 (8.54)	68 (82.93)	4.634	4.217
Contract extension period has affected project cost	9 (10.98)	13 (15.85)	44 (53.66)	12 (14.63)	5 (6.10)	2.892	2.538
Contract duration may affect the project quality	14 (17.03)	25 (30.49)	19 (23.17)	17 (20.73)	7 (8.54)	2.732	2.489
Composite Mean and Standard Deviation						3.528	3.241

The results in Table 4.17 indicated that the statements related to Contractors experience and Contract administration attained a mean of 4.439 and a standard deviation of 3.982 which was higher than the composite mean of 3.528 and a composite standard deviation of 3.241 implying that Contractors experience as an indicator had a positive influence.

On type of contract, a mean of 4.634 and a standard deviation of 4.217 was attained which was higher than the composite mean of 3.528 and a composite standard deviation of 3.241. This implied that type of Contract had a positive influence.

Regarding Contract level of involvement, a mean of 2.598 and a standard deviation of 2.538 was attained which was lower than the composite mean of 3.528 and a composite standard deviation of 3.241. This implied that contract level of involvement had a negative influence.

Two interviews were conducted on contract administration. Consultant Team Leader was asked what it meant to have an effective contract administration system in place, for road projects implementation. The respondent pointed out that when a project fails in its completion, then the expectations and requirements of the customers in terms of construction costs are clearly not met. Contract administration management processes put customers time limits for when they would benefit from the project.

When asked if the consultant was engaged in contract administration with regards to the stakeholders, the Client Project Manager responded that Road A consultant was very much engaged in contract matters.

4.8 Stakeholders Involvement and Urban Roads Projects Completion in Kenya

The study sought to determine Stakeholders' Involvement and Urban Roads Projects Completion in Kenya

4.8.1 Respondents' Involvement as Stakeholders During Road A Project Construction

The study sought to investigate whether the respondents were involved as stakeholders during Road A project construction. The results are indicated in Table 4.18.

Table 4.18 Respondents’ Involvement as Stakeholders During Road A Project Construction

Responses	Frequency	Percentage
Yes	63	76.83
No	19	23.17
Total	82	100

The study findings indicated that 76.83% of the respondents were involved as stakeholders during Road A project construction. Only 23.17% of the respondents indicated they were not involved.

4.8.2 Respondents’ Suggestions to Ensure All Stakeholders are Involved in the Implementation of Inland Container Depot Access Road A

The study sought to determine Respondents’ Suggestions to Ensure All Stakeholders are Involved in the Implementation of Inland Container Depot Access Road A. The findings are as indicated in table 4.19

Table 4.19: Respondents’ Suggestions to Ensure all Stakeholders are Involved in the Implementation of Inland Container Depot Access Road A

Responses	Frequency	Percentage
Proper identification of the stakeholders before construction activities.	39	47.57
Involve stakeholders in decision making processes that have direct impacts on them.	31	37.80
Stakeholders involvement during project preparation, construction and post construction.	12	14.63
Total	82	100

From the study findings, 47.57% of the respondents indicated that proper identification of the stakeholders before construction activities should be done, 37.80% indicated that stakeholders should be involved in decision making processes that have direct impacts on them and 14.63% indicated that stakeholders’ involvement should be done during project preparation, construction phase and post construction phase.

4.8.3 Statements Relating to Stakeholders' Involvement

The study sought to determine the extent to which the respondents agreed with statements relating to Stakeholders' Involvement. The respondents were requested to use Strongly Agree (SA)=5, Agree(A)=4, Undecided(U)=3, Disagree(D)=2, and Strongly Disagree (SD)=1. The results are indicated in table 4.20

Table 4.20: Statements Relating to Stakeholders' Involvement

Statements	1	2	3	4	5	Mean	S. D
Stakeholders were involved in the initial project phase only	4 (4.88)	16 (19.51)	4 (4.88)	19 (23.17)	39 (47.56)	3.890	3.602
Stakeholders should be involved in the entire project phase	6 (7.32)	2 (2.44)	12 (14.63)	9 (10.98)	53 (64.64)	4.232	3.895
Stakeholders' condition of works has derail construction process	36 (43.90)	18 (21.95)	6 (7.32)	17 (20.73)	5 (6.10)	2.232	2.141
Stakeholders support is important for completion of Road A	3 (3.66)	4 (4.88)	13 (15.85)	20 (24.39)	42 (51.22)	4.146	3.771
Stakeholders' attributes have caused project delays	8 (9.76)	14 (17.03)	0 (0.00)	31 (37.80)	29 (35.37)	3.720	3.457
There are stakeholders with high influence in road A project	19 (23.17)	8 (9.76)	27 (32.93)	10 (12.20)	18 (21.95)	3.000	2.833
Consultation with stakeholders has led to slow decision making	43 (54.44)	23 (28.05)	7 (8.54)	6 (7.32)	3 (3.66)	1.817	1.638
Stakeholders' management will increase the project's success	9 (10.98)	4 (4.88)	2 (2.44)	11 (13.41)	56 (68.29)	4.232	3.939
Composite Mean and Standard Deviation						3.409	3.160

The results in Table 4.20 indicated that the statements related to level at which to involve stakeholders and Stakeholders involvement attained a mean of 4.232 and a standard deviation of 3.895 which was higher than the composite mean of 3.409 and a composite standard deviation of 3.160 implying that level of stakeholders involvement as an indicator had a positive influence.

On Stakeholders support, a mean of 4.146 and a standard deviation of 3.771 was attained which was higher than the composite mean of 3.409 and a composite standard deviation of 3.160. This implied that stakeholders support had a positive influence.

Regarding stakeholders' conditions, a mean of 2.232 and a standard deviation of 2.141 was attained which was lower than the composite mean of 3.409 and a composite standard deviation of 3.160. This implied that stakeholders' conditions had a negative influence.

Three interviews were conducted on stakeholder's involvement. The Clients Project Manager was asked how important it is to identify project stakeholders according to their strengths, weaknesses, attributes and roles. The respondent indicated the key to the performance of a portfolio of infrastructure projects is stakeholder attitudes actions and control of those actions.

When asked if all stakeholders were involved before design of Road A, the Contractors Project Manager said that as many stakeholders as possible were involved but there were a number of them who were involved during the road's implementation process. The respondent further elaborated that at times it's difficult to bring every stakeholder on board, in the preconstruction phase.

The Consultant Team Leader was asked if different stakeholders were engaged in Road A construction and at what point. The respondent pointed out that diverse stakeholders were involved. The government, contractor, client, service providers, KWS, business owners were all involved during the various phases of the project implementation.

4.9 Inferential Analysis - Pearson Correlation Co-efficient

The data on project design, project financing, contract administration and stakeholders' involvement were analyzed using Pearson Correlation Coefficient and averages for each factor calculated into single variables. Pearson 's study of correlation was performed at a

confidence interval of 95% and a 2-tailed confidence level of 5% significance. Results are as indicated in the correlation matrix (Table 4.21), between the different factors and urban roads projects completion in Kenya.

Table 4.21: Correlation Matrix

Variables		Urban roads projects completion in Kenya	Project Design	Project Financing	Contract Administration	Stakeholders Involvement
Values / P. Values						
Urban roads projects completion in Kenya	Pearson's (R)	1				
	Sig. (2tailed)					
Project Design	Pearson's (R)	.857	1			
	Sig. (2tailed)	.023				
Project Financing	Pearson's (R)	.761	.877	1		
	Sig. (2tailed)	.025	.020			
Contract Administration	Pearson's (R)	.890	.745	.665	1	
	Sig. (2tailed)	.021	.024	0.25		
Stakeholders' Involvement	Pearson's (R)	.746	.799	.714	.763	1
	Sig. (2tailed)	.026	.035	.026	.024	

The results on table 4.21 indicated that there was a positive coefficient between project design, project financing, contract administration and stakeholders' involvement which had a value of 0.857 and p-value of 0.23; 0.761 and p-value of 0.25; 0.890 and p-value of 0.21; and 0.746 and p-value of 0.26 respectively. A positive relationship implies there is correlation between these independent variables and urban roads projects completion in Kenya, with contract administration having the highest influence on urban roads projects completion in Kenya, followed by project financing, stakeholders' involvement and project design having the lowest influence on the urban roads projects completion in Kenya.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter highlights the summary of findings, discussions, conclusion and recommendations made from the findings. Suggestions for further research are given, made in line with the outcomes of the study.

5.2 Summary of Findings

The purpose of the study was to determine the Determinants of Urban Roads Projects Completion in Kenya: A case of Inland Container Depot Access Road A in Nairobi County.

5.2.1 Urban Roads Projects Completion

With regards to urban roads projects completion, the study sought to determine indicators of project completion namely: project scope, time, quality, schedule and client's satisfaction. Respondents strongly agreed that Road A Project is not implemented within stipulated time (56.10%); time delays are common in urban roads construction projects (80.49%), and project scope means creating all project deliverables (78.05%). On the statement that project budget does not affect duration of a project, 68.29% strongly disagreed with the statement. These indicators attained a higher mean than the composite mean of 3.236 and standard deviation of 2.986, implying that they are positive indicators of urban roads projects completion. 36.6% had a neutral ground on allocated budget is inadequate in urban road projects while 32.91% disagreed that budget over runs can be controlled. The two statement had means and standard deviation lower than the composite mean and standard deviation of 3.236 and 2.986 respectively, implying that they had a negative influence on urban roads projects completion.

5.2.2 Project Design and Urban Roads Projects Completion in Kenya

Regarding the first objective on determining how project design influences urban roads projects completion in Kenya, the findings indicated that respondent (59.76%) strongly disagreed that not all stakeholders were involved in Road A preliminary design. 54.87% of the respondents strongly agreed that feasibility studies do not guarantee project completion.

Respondents agreed with the following statements: design standards have influenced completion of Road A project (37.80%); and project design process is costly (25.61%). On the statement about design changes contribute to project delays, (41.46%) of the respondents had a neutral attitude. The calculated means and standard deviation of majority of statements is higher than the composite mean of 3.190 and standard deviation of 2.891, indicating that project design positively influences urban roads projects completion in Kenya.

5.2.3 Project Financing and Urban Roads Projects Completion in Kenya

Regarding the second objective on determining how project financing influences urban roads projects completion in Kenya, the study findings indicated the respondents strongly agreed that: contractor's payment is equal to the construction work done (54.88%) followed by Road A's completion is dependent on availability of funds (52.44%) and government's funding for Road A project is limited (34.15%). Respondents strongly disagreed that contractor is paid in installments (31.71%). Respondents agreed that project funds were released by the client on time (51.22%); and cost variation occurred in Road A project implementation preliminary design (37.80%). Respondents were neutral on the statements that road projects finance management is complex (43.90%) and Road A project funds were diverted to other projects (36.59%). The calculated mean and standard deviation of majority of the line statements is higher than the composite mean of 3.346 and standard deviation of 3.046, indicating that the statements have a positive influence on urban roads projects completion in Kenya.

5.2.4 Contract Administration and Urban Roads Projects Completion

On the third objective on determining how contract administration influences urban roads projects completion in Kenya, the study findings indicated that respondents strongly agreed that: contract type determined the involvement of the project team (82.93%); Road A project client has experience in contract administration (62.20%); Road A contractor has experience in urban road contracts (56.10%); and client's decisions in contract administration has led to project delay (40.24%). On the statement about contract extension period has affected project cost, respondent (53.66%) had a neutral attitude on the line statement. Respondents strongly disagreed with the following statements: Road A's contract's level of involvement is clear (36.59%); and contractor with international project experience are preferred (25.61%). The calculated mean and standard deviation of the majority of line statements is higher than the composite mean of 3.528 and standard deviation of 3.241, indicating that contract administration influences urban roads projects completion in Kenya positively.

5.2.5 Stakeholders' Involvement and Urban Roads Projects Completion in Kenya

Concerning the fourth objective on determining how stakeholders' involvement influences urban roads projects completion in Kenya, the findings indicated the respondents strongly agreed that: stakeholders' management will increase the project's success (68.29%); stakeholders should be involved in the entire project phase (64.64%); stakeholders support is important for completion of Road A (51.22%); and stakeholders were involved in the initial project phase only (47.56%); 37.80% agreed that stakeholders' attributes have caused project delays. Majority of the respondents strongly disagreed with the following statements: consultation with stakeholders has led to slow decision making (54.44%); and stakeholders' condition of works has derail construction process (43.90%) while 32.93% of the respondents were neutral on the statement that there are stakeholders with high influence in Road A project. The calculated mean and standard deviation of line statements is higher than the composite mean of 3.409 and standard deviation of 3.160, indicating that stakeholders' involvement influences urban roads projects completion in Kenya positively.

5.3 Discussion of Findings

5.3.1 Urban Roads Projects Completion

The study findings revealed that 56.10% of the respondents strongly agreed that Road A Project was not implemented within stipulated time. Owolabi (2014) stated that urban road projects are deemed successful when completed in scheduled time, allocated budget and defined quality. The fact that the road project was behind schedule in its implementation, therefore, means that it was not a success. The findings are in line with Hatfield (2016), who opined that the success of a project depends on meeting goals within time limits and budget limits. The study revealed that time overruns are common in road projects in urban roads project (80.49%). The findings agree with the statement by World Bank (2015), that delays in the completion of infrastructure facilities is a critical problem with a global dimension, frequently leading to loss of production, disruption of work, loss of revenue through legal proceedings between contracting parties and abandonment of projects and project scope. of Respondents strongly disagreed (68.29%) that inadequate project budget does not cause project delays. These findings concur with the observation of Chen (2017), who indicated that adequate funds should be provided to support the execution of a project in order to be successful.

Majority of the statement touching on quality specification, project scope, project cost, project implementation timelines and client satisfaction attained a composite mean of 3.236 and a standard deviation of 2.986 implying they are positive indicators of urban roads project completion.

Pearson correlation coefficient test indicated that there was a positive correlation between project design, project financing, contract administration and stakeholders' involvement which had a value of 0.857 and p-value of 0.23; 0.761 and p-value of 0.25; 0.890 and p-value of 0.21; and 0.746 and p-value of 0.26 respectively. A positive relationship implies there is correlation between these independent variables and urban roads projects completion in Kenya, with contract administration having the highest influence on urban roads projects completion in Kenya, followed by project financing, stakeholders' involvement and project design having the lowest influence on the urban roads projects completion in Kenya.

When asked the reasons that have contributed to the unsuccessful implementation of Road A project, an interviewee said that the project stakeholders' failure to achieve a detailed overview of the development phase from start to finish is likely to be the reason why the expected delivery date was not been realized. The statement supports Memon (2014), who observed major project delays included: design and planning issues; financial resource planning; lack of stakeholders' involvement; systems engineering and contract administration and management; site management, information technology.

5.3.2 Project Design and Urban Roads Projects Completion in Kenya

Concerning the objective of determining the influence of project design on urban roads projects completion, study findings revealed that 59.76% of the respondents strongly disagreed that not all stakeholders were involved in Road A preliminary design. The findings are in contrary to the conclusion of Mohamed (2012), that the technical feasibility study includes finding the traffic constraints for the road project being proposed, with all technical teams involved by large. The findings also revealed that 54.87% of the respondents strongly disagreed feasibility studies do not guarantee project completion. The study findings are in line with the conclusion drawn by Kagai (2012), technical viability or feasibility provides project justification or dismissal, giving a rationale for the implementation, or lack of it thereof. 14.63% of the respondents indicated that design changes contribute to project delays. The findings concur with the views of Austin, Andrew and John (2018), who opines that the consequence of design changes is that designs are made without concern for buildability or

productive economies, thus negatively impacting project performance, cost overrun problems, scheduling delays and loss of profitability. Majority of the line statements relating to project design had means and standard deviations that were higher than the composite mean of 3.190 and standard deviation of 2.891, indicating project design positively influences urban roads projects completion. Pearson Correlation test done on project design and urban roads projects completion revealed a 0.857 positive correlation with a p-value of 0.23, indicating there is a strong correlation between the two variables. The researcher sought to establish the magnitude of the impacts of design errors on urban roads projects. An interviewee said that design errors results in reworks in road construction project, causing a 5% to 20% increase in the project costs and the cost overrun phenomenon owing to project design, design changes or errors are universal and very common to all roads, urban or otherwise. This agrees with the views of Chang (2014), that in not well-managed projects, changes in design may have a significant effect on costs in the range from 2.1 percent to 21.5 percent of overall construction costs.

5.3.3 Project Financing and Urban Roads Projects Completion in Kenya

In relation to the objective of determining the influence of project financing on urban roads projects completion, the study findings revealed that Road A's completion is dependent on availability of funds (52.44%). The study findings concur with the research by Jackson (2016), adequate funds should be provided to support the execution of a project in order to be successful. He added that availability of project funds is a significant factor affecting a project's execution. Respondents agreed project funds were released by the client on time (51.22%). The findings concur with those of Chepkoech (2012), who concluded contributions to delays in government's urban road infrastructure projects being implemented are primarily due to the late release of funds to the contractor, impacting the ability of contractors to ensure the continued supply of construction materials. 28.05% of the respondents were disagreed that Road A project funds were diverted to other projects. The findings failed to support Thugge, Heller and Kiringai (2012), who observed that in Kenya, development funds that would have been used to boost the economy are being diverted to activities unrelated to implementation of infrastructure projects. The line statements relating to project financing had means and standard deviations that were higher than the composite mean of 3.216 and standard deviation of 3.137, indicating that project financing influences urban roads projects completion positively. Pearson Correlation test done on project financing and urban roads projects completion revealed a 0.761 correlation with a p-value of

0.25, indicating there is a strong correlation between the two variables. When asked the way forward in road implementation, an interviewee said that Governments, financiers, sponsors and all involved in road implementation have to have a cohesive approach to transformation, quality improvement and innovative approaches which can be developed through the introduction of models for financial performance management, transport infrastructure and construction organizations. The study findings concur with the views of Gyula (2018) who noted that development of urban roads has started to implement up-to-date financial information technology and approaches, data processing and modern customer systems.

5.3.4 Contract Administration and Urban Roads Projects Completion

In relation to the objective of assessing the influence of contract administration on urban roads projects completion, respondents were neutral on that contract extension period has affected project cost (53.66). The findings are not consistent with the opinion of Albalate (2014), who avers that if the employer gives the contractor longer construction duration in the contract, more than the maximum period, he must pay the facility extra costs for the lost revenue, denial of the facility 's use and all the potential extra costs for the contractor. The findings indicated that Road A project client has experience in contract administration (62.20%). This is in support of a report by GoK (2016), which says that creating contract management is a primary determinant of whether the project will be successfully completed or not. Majority of line statements' means and standard deviations were higher than the composite mean of 3.528 and standard deviation of 3.241, indicating that contract administration influences urban roads projects completion. Pearson Correlation test done on contract administration and urban roads projects completion revealed a 0. 890 positive correlation with a p-value of 0.26, indicating there is a strong correlation between the two variables. An interviewee was asked what it meant to have an effective contract administration system in place, for road projects implementation, and indicated that when a project fails in its completion, then the expectations and requirements of the customers in terms of construction costs are clearly not met. Contract administration management processes put customers time limits for when they will reap the advantages of the construction project. The statement echoes the views of Mateshe (2013), who emphasized that the significance of the topic of contract management and administration in construction projects keeps coming up because it brings the key aspect of quality, in urban road construction projects.

5.3.5 Stakeholders' Involvement and Urban Roads Projects Completion in Kenya

As concerning the objective of determining the influence of stakeholders' involvement on urban roads projects completion, majority of the respondents (35.37%) strongly agreed that stakeholders' attributes have caused project delays. This resonates with the statement by McKinsey (2012), that the key criteria for the success of a project have been identified as influential qualities of the stakeholders, their knowledge of the project environment and productive utilization. 64.64% of the respondents indicated that stakeholders should be involved in the entire project phase. This agrees with Mohamed (2012), who noted the need to involve the project stakeholders in entire project implementation because the stakeholders are persons or group of persons affected or impacted by another party 's decision, and therefore the host community and government agencies may be involved in a road construction. 68.90% of the respondents indicated that stakeholders' management increase the project's success. The findings support Aaltonen (2012), that ineffective stakeholder management is a key factor causing construction delays. The line statements relating to project financing entity had means and standard deviations that were higher than the composite mean of 3.409 and standard deviation of 3.160, indicating that stakeholders' involvement influences urban roads projects completion. Pearson Correlation test done on stakeholders' involvement and urban roads projects completion revealed a 0.746 positive correlation with a p-value of 0.26, indicating there is a strong correlation between the two variables. When asked just how important it is to identify project stakeholders according to the strengths, weaknesses, attributes and roles, an interviewee indicated that the key to the performance of a portfolio of infrastructure projects is stakeholder attitudes actions and control of those actions. Stakeholders have various roles and responsibilities and control over a project, and therefore need contractors to classify the relevant stakeholders. failure to identify the appropriate stakeholders would likely pose considerable challenges to projects. The findings are in line with the conclusion of Kagai (2012), who established that an understanding of the fact that stakeholders may have either constructive or detrimental impact over a project is important.

5.4 Conclusions

The study concluded that project design influence urban roads projects completion. The findings revealed that design standards influence project completion. The findings also show that all stakeholders ought to be involved in the preliminary design of urban road projects. The results of the study have concluded that design changes are inevitable in roads

construction projects and indeed, they contribute to project delays. Lastly, the findings show that proper design implementation leads to successful projects.

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

The research findings concluded that contract administration influence urban roads projects completion. The results revealed that the project client should have experience in contract administration; client's decisions in contract management can lead to project delays; Urban road contractors should have experience, both local and international, in urban road contracts; contract type determined the involvement of the project team and contract extension period affects an urban road project cost.

The study concluded that stakeholders' involvement influences urban roads projects completion, through identifying stakeholders right from the pre-construction phase to involving stakeholders in the entire project phase so as to create understanding of project goals, considering the interests of all stakeholders, project managers being aware of stakeholders with high influence and that are necessary in road projects. Finally, stakeholders' management will increase the project's success

5.5 Recommendations

Based on research findings and conclusions, the study recommends that:

- i. Governments look into the issues of project delays, since urban road infrastructures make up a large part of the gross domestic product worldwide, playing a crucial role in the country's growth. Road construction projects in the developing world like Kenya provide a significant source of jobs for the majority of the citizens. This calls for increased implementation and successful completion of urban road projects.
- ii. Funds should be provided to support the execution of a project in order to be successful. The findings recommend a shift from equity and debt as the main sources

of financing for transport infrastructure and embrace the use of special project funds and venture capital as a financing alternative.

- iii. Adequate feasibility studies should be carried out during pre-construction phase and harmonized with project design.
- iv. Contract administration of infrastructure project which are not within the client's mandate should be sub-contracted or assigned to relevant authorities.
- v. Project managers should create awareness that the success of a project is marked to the satisfaction of its stakeholders. This is because various project stakeholders participate in the project implementation from different viewpoints. For that reason, stakeholders should be recognized as essential to success in the project setting because they can assist in the design and selection of suitable infrastructure projects.

5.6 Suggestions for Further Research

The following areas for further research were identified:

- i. The study investigated urban roads projects completion. A replication of the studies can be done and the study finding compared to findings on completion of other road projects such as PPP road projects, county funded road projects, highway roads, donor funded road projects, rural roads etc.
- ii. The aspect of stakeholders being involved in pre-construction preliminary design process can be investigated, since proper design implementation leads to successful projects. Design changes have been established as inevitable in roads construction projects. They contribute to project delays and therefore, a study on the influence of design changes on completion of urban road projects can be done
- iii. The project client or employer's experience, the level of involvement and decision-making processes in contract administration can be researched on.

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APPENDICES

Appendix I: Introduction Letter


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

Your Ref: _____ Main Campus
Our Ref: _____ Gandhi Wing, Ground Floor
Telephone: 318262 Ext. 120 P.O. Box 30197
NAIROBI

REF: UON/ODEL/NLC/32/246 27th October, 2020


TO WHOM IT MAY CONCERN


RE: MISHECK WAITITU NDUNGU - REG NO: L50/89154/2016

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

He is proceeding for research entitled *"Determinants of Urban Roads Projects Completion in Kenya: A Case of Inland Container Deport Access Road A in Nairobi County"*.

Any assistance given to him will be highly appreciated.


for **CAREN AWILLY**
CENTRE ORGANIZER
NAIROBI LEARNING CENTRE


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

Appendix II: Letter of Transmittal of Data Collection Instruments

MISHECK WAITITU NDUNG’U

TEL: +254723271169

PO BOX 12565, 00400

NAIROBI, KENYA

EMAIL: Misheckndungu@gmail.com

Dear Respondent,

RE: REQUEST FOR YOUR PARTICIPATION IN A RESEARCH STUDY

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

Yours Faithfully,

A handwritten signature in black ink, appearing to read 'Misheck Waititu Ndung'u', is written over a light blue rectangular background.

Misheck Waititu Ndung'u

Appendix III: Questionnaire for the Staffs working for Kenya Railways, Road A Consultant - CAEC and Contractor – CRBC.

Please respond to the following questions by placing a tick (✓) in the appropriate box spaces provided or by writing your answers in the spaces provided.

SECTION A: GENERAL PERSONAL INFORMATION

Kindly put a check [✓] to answer the following questions:

1. Which organization are you working in?

Kenya Railways [] CAEC [] CRBC []

2. What is your highest academic qualification?

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

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

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

4. Indicate the position you hold in your institution.

Project Manager [] Engineer [] Designer [] Financial advisor []

Surveyor [] Liaison Manager []

Any other (specify).....

SECTION B: COMPLETION OF URBAN ROADS PROJECTS IN KENYA.

1. Do you think the delay in completion of Road A construction has caused the congestion currently being experienced at the Nairobi Inland Container Depot?

Yes [] No []

2. What do you think is the reason for the delay in completion of Road A construction project?

.....
.....

3. To what extent do you agree with the following statements that relate to Urban Roads Projects Completion in Kenya?

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

Completion of Urban Roads Projects	1	2	3	4	5
Road A Project is implemented within stipulated time					
Time delays are common in urban roads construction projects					
Allocated budget is inadequate in urban road projects					
Allocated budget is a delay factor in road construction					
Budget over runs can be controlled					
Road A face unclear quality standards					
Project budget does not affect duration of a project					
Clients' satisfaction has affected completion of road A project					
Project success depends on the client's satisfaction					
Road A project has undefined project scope					
Project scope means creating all project deliverables					

SECTION C: PROJECT DESIGN

1. Do you think a project’s design influence completion of urban road?

Yes []

No []

2. In your opinion, what can you point as the challenges affecting Road A project design?

.....
.....

3. To what extent do you agree with the following statements that relate to Project Design

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

Project Design	1	2	3	4	5
Road A Project feasibility studies was done					
Feasibility studies does not guarantee project completion					
Design standards has influenced completion of Road A project					
Not all stakeholders were involved in Road A preliminary design					
Design changes are inevitable in roads construction projects					
Design changes contribute to project delays					
Proper design implementation leads to successful projects					
Project design and implementation process is costly					

SECTION D: PROJECT FINANCING

1. Do you think the financing approach that was used had an impact on Road A delay?

Yes []

No []

2. What suggestion would you give concerning urban road project's financing?

.....

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

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

Project Financing	1	2	3	4	5
Road A's completion is dependent on availability of funds					
Government's funding for Road A project is limited					
Road's finance management is complex					
Cost variation occurred in Road A project implementation					
Project funds were released by the client on time					
Road A project funds were diverted to other projects					
Contractor's payment is equal to the construction work done					
Contractor is paid in installments					

SECTION E: PROJECT CONTRACT ADMINISTRATION

1. Were you engaged in the Road A project contract administration process?

Yes []

No []

2. What suggestions would you give to improve road contract administration in densely populated urban areas like the Nairobi ICD?

.....

3. To what extent do you agree with the following statements that relate to Project Contract Administration?

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

Project Contract Administration	1	2	3	4	5
Road A project client has experience in contract administration					
Client’s decisions in contract administration has led to project delay					
Road A Contractor has experience in urban road contracts					
Contractor with international project experience are preferred					
Road A’s contract’s level of involvement is clear					
Contract type determined the involvement of the project team					
Contract extension period has affected project cost					
Contract duration may affect the project quality					

SECTION F: STAKEHOLDERS' INVOLVEMENT

1. Were you involved as Road A project stakeholder during the construction phases?

Yes [] No []

2. What would you suggest to be done to ensure all stakeholders are involved in the implementation of inland container depot access roads?

.....

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

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

Stakeholders' Involvement?	1	2	3	4	5
Stakeholders were involved in the initial project phase only					
Stakeholders should be involved in the entire project phase					
Stakeholder involvement has created understanding of the project					
Stakeholders support is important for completion of Road A					
Stakeholders' attributes have caused project delays					
There are stakeholders with high influence in road A project					
Stakeholders participation leads to joint ownership of projects					
Consultation with stakeholders has led to slow decision making					
Stakeholders' condition of works has derail construction process					
Stakeholders' management will increase the project's success					

Appendix IV: Interview Guide for Kenya Railways Project Manager, Consultant-CAEC Team Leader and Contractor-CRBC Project Manager


1. Do you think delay in completion of Road A has any impact on the allocated budget?
2. Will quality be compromised due to contractual pressure for the contractor to complete the road? Kindly elaborate.
3. Has the delay of Road A construction caused the congestion currently being experienced at the Nairobi Inland Container Depot?
4. Do you think that different stakeholders engaged in Road A construction? At what point?
5. It has been argued that the key mandate of Kenya Railways is construction of railways and not roads. Do you agree with that line of argument?
6. Could a change in the financing approach had an impact on Road A delay?
7. Do you think the consultant was engaged in contract administration with regards to the stakeholders? To what extent?
8. Was the road design related to the allocated budget or contract variation was an option?
9. Were key stakeholders involved before design of Road A? Kindly elaborate.
10. Road A is located in an urban area which has land use and dense population challenges hence delay in construction. Do you agree with that line of argument?
11. Can you indicate how many road design options were available?
12. According to you, did the consultant bring diverse personnel skills into the project?
13. Has the type of contract (EPC Contract) had an impact on the implementation of the project?
14. Can you say that design changes have an effect on the commercial contract scope?

Appendix V: NACOSTI Permit

REPUBLIC OF KENYA
HARAMBEE

Ref No: 976779

RESEARCH LICENSE




This is to Certify that Mr.. Ndungu Misheck Waititu of University of Nairobi, has been licensed to conduct research in Nairobi on the topic: Determinants of Urban Roads Projects completion in Kenya: A case of Inland Container Depot Access Road A in Nairobi County for the period ending : 03/November/2021.

License No: BAHAMAS ABS/P/20/7445

Applicant Identification Number: 976779

Waititu
Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

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