

**CONTRACTORS CAPACITY AND PERFORMANCE OF ROAD
CONSTRUCTION PROJECTS IN NAIROBI CITY COUNTY, KENYA**

STELLA WAMAITHA WAHUGA

D53/CTY/PT/38074/2017

**A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS,
ECONOMICS AND TOURISM IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTERS OF
BUSINESS ADMINISTRATION (PROJECT MANAGEMENT) OF
KENYATTA UNIVERSITY**

OCTOBER, 2025

DECLARATION

This research project is my independent work and has not been presented for any degree or other academic award at any institution. No portion of this report may be duplicated without the consent of the author and/or Kenyatta University.

Signature:

Date:

Stella Wamaitha Wahuga

D53/CTY/PT/38074/2017

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

Signature:

Date:

Dr. Lucy Ngugi

Department of Management Science

Kenyatta University

DEDICATION

This project is devoted to my loving family. Many thanks to you for your continuous encouragement, love, guidance, and understanding throughout this journey. May you be abundantly blessed by God the Almighty.

ACKNOWLEDGEMENTS

I wish to express my sincere appreciation to the faculty at Kenyatta University who have been instrumental throughout my academic journey. My deepest gratitude goes to Dr. Lucy Ngugi, whose unwavering support and dedication have been invaluable in bringing this project to fruition.

A heartfelt thank you to my family, especially my mother, as well as my friends and colleagues, whose constant encouragement and support have given me the confidence to complete this project.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENTS	iv
TABLE OF CONTENTS	v
LIST OF TABLES	ix
LIST OF FIGURES	x
ABBREVIATIONS AND ACRONYMS	xi
ABSTRACT	xii
CHAPTER ONE	1
INTRODUCTON	1
1.1 Background of the Study	1
1.1.1 Performance of Projects	2
1.1.2 Contractor’s Capacity	3
1.1.3 Road Construction Projects in Nairobi City County	4
1.2 Statement of the Problem.....	5
1.3 Research Objectives.....	7
1.4 Research Questions	8
1.5 Significance of the Study	8
1.6 Scope of the Study	9
1.7 Limitation of the Study	9
1.8 Organization of the Study	10
CHAPTER TWO	11
LITERATURE REVIEW	11
2.1 Introduction.....	11
2.2 Theoretical Review of Literature	11

2.2.1 Cost-Benefit Analysis Model.....	11
2.2.2 Stakeholder Theory	12
2.2.3 Theory of Constraints	13
2.2.4 Resource-Based View (RBV) theory.....	14
2.3 Empirical Review of Literature	15
2.3.1 Contractor Technical Capacity and Performance of Projects	15
2.3.2 Contractor Financial Capacity and Performance of Projects	17
2.3.3 Contractor Organizational Capacity and Performance of projects	18
2.3.4 Contractor Regulatory Compliance Capacity and Performance of Projects	19
2.4 Summary of Literature Review and Research Gaps	21
2.5 Conceptual Framework.....	27
CHAPTER THREE.....	28
RESEARCH METHODOLOGY	28
3.1 Introduction.....	28
3.2 Research Design.....	28
3.3 Target Population.....	28
3.4 Sampling Procedures and Sample Size.....	29
3.5 Data Collection Instruments	31
3.6 Pilot study	31
3.7 Validity and Reliability of the Research Instrument.....	32
3.7.1 Validity of the Research Instruments.....	32
3.7.2 Reliability of Research Instruments.....	32
3.8 Data Collection Procedure	33
3.9 Data Analysis and Presentation	33
3.10 Ethical Considerations	35
CHAPTER FOUR.....	37

RESULTS AND FINDINGS	37
4.1 Introduction.....	37
4.2 Response Rate.....	37
4.3 Background information of the Respondents	38
4.3.1 Respondents’ Distribution	38
4.3.2 Level of Education.....	39
4.3.3 Industry Experience	40
4.3.4 Size of the Contracting Firms	41
4.4 Descriptive statistics	42
4.4.1 Financial Capacity	42
4.4.2 Technical Capacity of Constructing Firms	44
4.4.3 Organizational Capacity of the Contracting Firms	46
4.4.4 Regulatory Compliance Capacity of Contracting Firms.....	48
4.4.5 Performance in New Road Projects	49
4.5 Multiple Linear Regression model diagnostic tests.....	50
4.5.1 Multicollinearity Test.....	50
4.5.2 Normality test.....	51
4.6 Multiple Linear Regression Analysis Results.....	52
4.7 Correlation Analysis	53
4.8. Multiple Linear Regression Analysis.....	55
CHAPTER FIVE	59
SUMMARY, CONCLUSION AND RECOMMENDATIONS	59
5.1 Introduction.....	59
5.2 Summary of The Study	59
5.2.1 Contractors' Technical Capacity and The Performance of Road Construction Projects	59
5.2.2 Contractors' Financial Capacity and the Performance of Road Construction Projects.....	59

5.2.3 Organizational Capacity and the Performance of Road Construction Projects.....	60
5.2.4 Regulatory Compliance Capacity and the Performance of Road Construction Projects	60
5.3 Conclusion of the Study	60
5.4 Recommendations of the study	62
5.5 Recommendations for Future Studies	63
REFERENCES.....	65
APPENDICES	72
APPENDIX A: Introduction Letter.	72
APPENDIX B: Questionnaire.....	73
APPENDIX C: Road Projects.....	81
APPENDIX D: Research Authorization Letter	82
APPENDIX E: Research Approval Letter	83
APPENDIX F: Research Permit NACOSTI.....	84

LIST OF TABLES

Table 2. 1: Summary of Literature and Research Gaps	24
Table 3.1 Target Population.....	29
Table 3.2 Sample size	30
Table 4.1 Response Rate.....	37
Table 4.2 Respondents' Distribution	38
Table 4.3 Working experience	41
Table 4.4 Financial Capacity	43
Table 4.5 Technical Capacity	45
Table 4.6 Organizational Capacity of the Contracting Firms	47
Table 4.7 Regulatory Compliance Capacity of Contracting Firms.....	48
Table 4.8 Performance in New Road Projects	49
Table 4.9: Multicollinearity Test Using Tolerance and VIF.....	51
Table 4.10 Tests of Normality	52
Table 4.11 Model Summary	53
Table 4.12: Correlation Analysis Results	54
Table 4.13: Regression Coefficients	56

LIST OF FIGURES

Figure 2.1 Conceptual Framework	27
Figure 4.1: Education Level.....	39
Figure 4.2: Working Experience.....	40

ABBREVIATIONS AND ACRONYMS

GDP	Gross Domestic Product
KENHA	Kenya National Highways Authority
KeRRA	Kenya Rural Roads Authority
KRA	Kenya Roads Authority
KURA	Kenya Urban Roads Authority
NACOSTI	National Commission for Science, Technology and Innovation
NCA	National Construction Authority
NEMA	National Environmental Management Authority
SPSS	Statistical Package for Social Sciences

ABSTRACT

Research on project performance emphasizes adherence to cost and schedule, which is crucial for achieving objectives and maintaining quality. In Kenya, 56% of road construction projects experience cost overruns, delays, and poor outcomes. This study addresses gaps in understanding contractor capacity specifically financial, technical, managerial, and regulatory compliance to improve road construction performance in Nairobi. It assesses contractors' capacity and its effect on the outcomes of road construction initiatives. The main aim was to investigate how the competence of contractors affects the execution of specific road projects within the county. The specific objectives included evaluating the effects of contractors' financial capacity, regulatory compliance, technical expertise, and organizational capabilities on project performance. The study aimed to benefit government stakeholders, as well as private and public contractors specializing in road development. It drew insights from the Cost-Benefit Analysis Model, Stakeholder Theory, Theory of Constraints, and the RBV. A descriptive research design was employed, targeting five road projects within Nairobi City County. Respondents included engineers from the Ministry of Roads, technical auditors, contractor consultants, and engineers from the KURA, totaling 75 individuals responsible for overseeing road construction in the county. Data collection was conducted using questionnaires, while analysis involved quantitative methods, including descriptive and inferential analyses. Descriptive analysis provided key statistical insights such as mean, standard deviation, and percentages for data summarization, while inferential analysis employed correlation and multiple linear regression to explore relationships between the study variables. The findings revealed an R-square value of 0.727, indicating that 72.7% of variations in road construction project performance in Nairobi City County were explained by contractors' capacities technical, financial, organizational, and regulatory compliance while 27.3% were attributed to other factors. To enhance road construction project performance, contractors should improve technical capacity through training, modern technology adoption, and skilled personnel. Strengthening financial capacity, enhancing organizational structures, and ensuring regulatory compliance are also crucial. Future research should explore technological advancements, financial models, leadership roles, regulatory impacts, and broader geographic comparisons.

CHAPTER ONE

INTRODUCTON

1.1 Background of the Study

The importance of infrastructure, especially the road sector, cannot be overemphasized for national economies and societies. A well-reasoned refi-ne road network is indispensable for a country to satisfactorily address all of its production needs while stimulating economic growth and sustainability; it also plays an important role in enhancing competitiveness for the nation in world markets (Boadu et al.,2020).The Contractor forms the core of the road construction projects, performing critical functions such as obtaining finances, sourcing construction materials and advanced technology, providing technical expertise and managing project resources efficiently (Rahman et al.,2019). Authors such as Shehu & Wang (2020), Taofeeq et al. (2019), Akali (2018), and Deep et al. (2018) mention that the achievement of road developmental construction to a great extent depends upon the ability and efficiency of the contractors involved.

The construction industry has a long history marked by monumental achievements: from the Roman Empire's equivalent in road, railway, and building construction to such wonders of earth-moving power as the Great Wall of China, the Egyptian pyramids, and beyond (Bahamid et al., 2020). It was during the 18th and 19th centuries when some major advancements were made in the fields of road, railway, and building construction, partly due to several industrial revolutions (Muriuki & Moronge, 2019). Since then, several improvements have continued to be introduced into these fields, fueled by huge investments by various governments all over the world. According to the McKinsey Global Institute (2020), construction activities account for 13% of the

global Gross Domestic Product as of today, forecasted to exceed 13.5% by 2030, with annual expenditures of about \$10 trillion in the sector.

In Africa, Boadu et al. (2020) reveal that road expenditures are quite significant, averaging around 1.8% of the GDP of countries in the region. In Nigeria, Shehu & Wang (2020) establish that the building sector represents for 16% of the nation's GDP and employs approximately 25% of its workforce. A similar trend is observed in Kenya, where the government allocates substantial resources to both policy development and actual construction. Contributing about 7% to the GDP, Kenya is actively pursuing Vision 2030, a plan aimed at improving its road networks, road safety, and overall efficiency (Macharia, 2016). However, the anticipated benefits from these road investments often fall short, as a majority of projects experience cost overruns, exceed expected completion timelines, and exhibit lower-than-anticipated quality standards (Akali & Sakaja, 2018). To ensure that these investments yield their intended value, it is crucial for stakeholders to thoroughly evaluate the key factors contributing to the success of road building ventures.

1.1.1 Performance of Projects

A project can be broadly defined as a temporary effort that brings together individuals and assets to accomplish a unique outcome within a specific timeframe and budget (Project Management Institute, 2019). Assessing project performance involves factors like input and output quality, goal attainment, adherence to standards, and meeting technical specifications. In the context of road construction projects, quality and client satisfaction often take precedence over time and cost considerations, which are typically well-regulated by authorities. Effective operational control is termed as a vital performance indicator by scholars like Shehu, Holt, Endut and Akintoye (2018), while improvements in cost efficiency, time and overall quality are strong proponents for

Kerzner and Kerzner (2019). The project success that contains quality-time-budget variables as part of project performance is reinforced by Befrouei and Taghipour (2018). Their research focused on all construction companies in Tehran, Iran. The main findings of this study include that effective risk management is required as a safeguard to project performance amidst challenges. Evaluation in this study considers dimensions such as time, quality, cost, and environmental sustainability (Befrouei & Taghipour, 2018), highlighting risks associated with each factor that significantly affect project performance.

Most of the organizational risks such as conflicts and breakdowns in communication considerably affect project performance and can be a barrier to efficiency in teamwork. Wu et al. (2017) maintain that every project participant accountable for different aspects of the project must work in harmony to facilitate the achievement of project goals. Measures of success or project performance set out by their study should include adherence to budget and schedule, attainment of client objectives, satisfactory performance according to criteria set by clients, special requirements met, and stakeholder collaboration.

1.1.2 Contractor's Capacity

According to the definition given by Transparency Market Research (2020), what a contractor possesses capacity is the ability to evaluate project area risks and understand those risks so that strategies can be devised that will control these respective risks. Contractor capacity is crucial for project development because it significantly determines how well the respective person manages the project, according to Mok, Shen, and Yang (2018). More specifically, financial capabilities are those that define the contractor's skills for accurately forecasting financing needs for a project from their initiation until its closure and sourcing the funds required to execute activities under

the project, which also includes resource procurement, both human and mechanical, meant to execute all project tasks.

Technical capacity refers to creative and forward-looking imagination and specialized skill required by workers to design roads, build, and undertake reworks on completed projects in contrast (Crawford, 2019). Management capacity, which complements technical capacity refers to an efficient team of managers that are able to oversee the operation of a road construction project from start to the end. Another aspect required of contractors is organizational capacity which refers to seamless departmental coordination and communication (Shehu & Wang, 2020). Finally, compliance capacity is the capability of the team of contractors to work in line with regulations and rules in the jurisdiction of the works and to be considerate of the set terms of agreement with clients (Nmadu, 2022). As provided by UNDP (2019), a mix of the enlisted capacities is not only important in ensuring timely completion of projects but also allows delivery of quality with set standards. This study will undertake a comprehensive analysis of financial, technical, management, organizational and compliance capacities of contractors.

1.1.3 Road Construction Projects in Nairobi City County

Nairobi City County, home to Kenya's capital, has seen numerous road projects, both completed and currently in progress. The County contributes 13% of the Country's GDP and is the most populous with 4.3 million people, a home to many industries both foreign and local and a global tourist destination in the continent (KNBS). As such the County's infrastructure has not only been an important consideration of the Nairobi County government but also the National government of Kenya. Road construction, maintenance and management in the County is carried out by state agencies such as KeNHA, KURA, Kerra and state department of roads (Hasan & Guyo, 2017). The

Nairobi expressway and Eastern Bypass are arguably one of the greatest completed road projects in the County while other ongoing large road projects include Construction and Rehabilitation of Kasarani-Mwiki road and Ngong road set to be done by 2024 (KeNHA Report, 2020). Other small road construction projects also happen in constituencies and on existing roads.

According to Akali (2017) road construction projects in Kenya are very important in terms of creation of jobs and spurring the growth of our economy. Unfortunately, a significant number of road construction projects have struggled to meet their expected completion timelines and even consumed more resources than had been budgeted (Hasan & Guyo, 2017). The Nairobi Expressway a 27.4 Kilometer toll road for instance consumed Kes 88 billion rather than the budgeted Kes 81 billion and was completed in April 2022 rather than the earlier planned time of December 2021. Given that contractors are at the center of construction road projects in the County, it is important to assess how their capacity is of importance towards the success of these projects. This will not only help in defining ongoing projects like the Rehabilitation of Kasarani-Mwiki road and Ngong road but also strategize for future roads in the Country at large.

1.2 Statement of the Problem

Performance of road construction projects is often assessed in terms of cost, time, and quality outcomes relative to the initial project plan or baseline. In Kenya, however, these key indicators budget adherence, timely completion, and compliance with specifications remain problematic. Projects frequently experience cost overruns, schedule delays, and substandard quality, symptoms that point to deeper inefficiencies within the construction sector. These persistent issues have made it difficult to achieve project objectives and deliver sustainable infrastructure outcomes.

Evidence shows that over 56% of road construction projects in Kenya have encountered major performance setbacks, including budget escalation, incomplete works, and failure to meet required standards (Macharia, 2016). Despite the government's commitment under Kenya Vision 2030 to improve road networks, safety, and efficiency between 2008 and 2016, many of these targets were missed due to stalled or delayed projects (Choge & Muturi, 2014). Reports attribute these failures largely to contractor-related weaknesses ranging from inadequate technical expertise, poor financial capacity, weak organizational systems, and low regulatory compliance (Njenga, 2014; Macharia, 2016; Simiyu, 2018; Construction Review, 2019; Business Daily, 2020). The Business Daily (2020) further reported that the government had invested approximately Kshs 9.6 billion in stalled projects, underscoring the extent of inefficiencies linked to limited contractor capacity.

These challenges are symptomatic of a broader capacity deficit among contractors, which undermines not only project execution but also the realization of national development goals such as Vision 2030. The ability of contractors to mobilize sufficient technical skills, financial resources, and managerial systems, while complying with regulatory standards, is central to delivering projects on time, within budget, and at the expected quality.

Globally and regionally, empirical studies reinforce the critical role of contractor capacity in project success. In the UK, Alzahrani and Emsley (2022) emphasized that contractor attributes such as past performance, reputation, and financial stability determine project outcomes. Similarly, Deep et al. (2018) in India identified design changes, limited human resources, material shortages, and contractor inefficiencies as dominant factors affecting project delivery. In Kenya, Mwangi (2016) found that availability of operating funds, skilled personnel, and effective managerial frameworks

significantly influence construction performance. Akali and Sakaja (2018) further underscored financial capability as a decisive factor in project success in Kakamega County, while Simiyu (2018) identified financial, organizational, technical, and regulatory capacities as key determinants of performance in road construction.

However, despite these insights, there remains a notable gap in comprehensive empirical evidence focusing on how different dimensions of contractor capacity namely technical, financial, organizational, and regulatory compliance capacities jointly influence the performance of road construction projects within Nairobi City County, Kenya's largest urban infrastructure hub. Addressing this gap forms the core motivation for this study, which seeks to provide evidence-based insights for improving contractor capacity and enhancing the performance of road construction projects in the county.

1.3 Research Objectives

The primary goal of the research was to determine how the capacity of contractors influenced the performance of road construction projects in Nairobi City County, Kenya.

Specific objectives of the study were to:

- i. To examine the effect of contractor's technical capacity on the performance of selected road construction projects in Nairobi City County, Kenya.
- ii. To establish the effect of contractor's financial capacity on the performance of selected road construction projects in Nairobi City County, Kenya.
- iii. To establish the relationship between organizational capacity and performance of selected road construction projects in Nairobi City County, Kenya.
- iv. To determine how regulatory compliance capacity relates to the performance of road construction projects in Nairobi City County, Kenya.

1.4 Research Questions

- i. What is the influence of contractor's technical capacity on the performance of selected road construction projects in Nairobi County, Kenya?
- ii. To what extent does contractor's financial capacity affect the performance of selected road construction projects in Nairobi City County, Kenya.?
- iii. What is the relationship between contractors' organization capacity and the performance of selected road construction projects in Nairobi County, Kenya?
- iv. How does contractor's regulatory compliance capacity relate to the performance of selected road construction projects in Nairobi City County, Kenya.?

1.5 Significance of the Study

The insights from this study are valuable to researchers and professionals in project finance, project management, administration, and road engineering. By exploring how contractor capacity influences the success of highway development initiatives in Nairobi County, the study offers a strong basis for ongoing research in this area. Additionally, the findings enrich existing literature, particularly in the context of developing nations and beyond, helping to shape future discussions and improvements in the field.

The study findings were beneficial to practicing project managers and contractors in Kenya's road construction sector. They enabled these professionals to assess their financial, technical, management, and compliance capacities, helping them identify strengths and weaknesses. This allowed them to improve their approaches and develop successful road projects.

Additionally, the study findings were valuable to regulatory authorities responsible for contracting road construction works and other projects in Kenya. Entities such as

KURA, KeNHA, and KeRRA gained enhanced knowledge about how a contractor's skills, experience, and resources influence the success and efficiency of road construction projects. This knowledge helped these organizations re-evaluate their assessment criteria and improve the quality of their selection and monitoring processes.

1.6 Scope of the Study

The research had a clear scope, being confined exclusively to State Law Offices located within the country, excluding any others. The research examined builders' capabilities and the efficiency of roadway development ventures in Nairobi County. It comprehensively covered various aspects of contractors' capacity, including financial, technical, management, organizational, and compliance capabilities. The favorable outcome of highway development initiatives was evaluated based on cost, quality, and timely completion. The research focused on specific contractors engaged in ongoing projects within Nairobi County. To gain a comprehensive understanding, the study relied on both firsthand and documented information. Firsthand data was gathered through surveys shared with the chosen contractors in Nairobi County.

1.7 Limitation of the Study

Plenty of limitations were anticipated for the conduction of this research project itself. First, the contractors falling under the study are widely dispersed in remote areas across an expansive and diverse geographical area, thus posing logistics challenges for data collection. In this regard, highly trained research assistants were engaged to effectively facilitate data collection, thereby including respondents from the very distant locations in the exercise. Secondly, there were chances that some respondents might have withheld sensitive or critical information due to fear of punitive consequences. This challenge was combated through verbal persuasion coupled with showing the respondents the introduction letter from the university as a way of generating trust for

them to provide valuable information. Finally, the busy schedules of some respondents indeed posed a challenge when it came to filling out the questionnaires, which were meant to be completed in a single sitting. To allow for flexibility in data collection, the drop-and-pick method was, therefore, used, whereby respondents could fill out the questionnaire at their own convenience and return it after completion. The above strategies are the measures that were addressed to overcome all anticipated limitations, ensuring that the research collected comprehensive and accurate data.

1.8 Organization of the Study

The overall process of the study was delineated in five chapters. Chapter One discusses the research in detail covering the contextual framework, an evaluation of the theoretical literature related to major principles of Quality Management and effectiveness, the specification of the research objectives, development of inquiry points, examination of the study's importance, defining the scope and constraints of the investigation, and a brief account of the organization of subsequent chapters. Chapter Two provided a critical analysis of published works with regard to the issue investigated, with emphasis on theoretical postulates, findings from empirical studies, brief description of empirical investigations, and an illustration of the conceptual linkages thereof. An account of the methodology used in the study was given in Chapter Three concerning the instrumentation and design adopted, the specific targeted group for the study, the sampling procedure, methods of collecting data, and ethical considerations. An analysis and understanding of the gathered data were then dealt with in Chapter Four. Ultimately, Chapter Five presented the conclusion of the study by showing the key findings, drawing conclusions, giving recommendations, and identifying possible venues for future research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Through theoretical underpinnings, this section considers literature existing around the key variables of the study. In addition, a conceptual diagram is provided for a conceptual framework depicting the relationships of these variables between the study variables and some of their measurable indicators, while also delving into the gaps in knowledge that this particular study seeks to fill.

2.2 Theoretical Review of Literature

2.2.1 Cost-Benefit Analysis Model

The CBA was the invention of the ules Dupuit, a Gallic civil servant and financial analyst, primarily for the calculation of social profitability in a road bridge construction project. Alfred Marshall later formalized this model (Livermore, 2019). Otto Eckstein carried it into prominence in the 1950s by creating A welfare economics approach as the basis for applying CBA in the development of water resources. This framework integrates various theories, models, and actual data to weigh the advantages and disadvantages of alternative solutions, helping to make the wise and balanced cmuch between different options, thereby enabling the selection of the best suited. Such an analysis applies well to looking at the benefits versus costs of investment in construction projects, and it enables project managers or risk managers to bring all of them together into a single equation.

CBA is the most useful model when making decisions about capital projects. Financial design is one independent variable in this study, concentrating on how it casts its web on performance. Financial capacity is central to analyzing performance and should be

kept at optimal levels (Shehu & Wang, 2020). Risk managers need to defend their strategic decisions, and the CBA approach offers a way to do this by calculating the costs and benefits of each alternative and choosing the most appropriate strategy (Hong et al., 2018). The benefits of the selected strategy must exceed its costs, and other balancing aspects, such as time and scope, have to remain balanced, even when costs are low.

The CBA is suitable for this purpose as construction companies can use it to evaluate the benefits versus the costs of a particular structure and compare it to other alternatives. For organizational structure, different project organizational structures have varying employee remuneration and productivity rates. Additional benefits include improved team coordination and collaboration, communication, and ease of control (Muchai et al., 2018). Therefore, the benefits of implementation should exceed the costs, ensuring that project performance is not compromised.

2.2.2 Stakeholder Theory

This theory, advanced by Donaldson and Preston (2020), Evans and Freeman (2017), and Freeman (2018), focuses on the importance of stakeholders within a firm and how their interests should be managed. It posits that stakeholders are primarily concerned with the benefits they receive from the company, and thus, managers must understand and address these stakeholders' interests. Ignoring stakeholders can lead to the company's failure, making it imperative to prioritize their interests. Despite its practical implications, the theory has been critiqued for offering an unrealistic perspective on organizational operations. It is important to organize and do planning and scheduling, as well as to consolidate all ideas and expectations for the work of all stakeholders. This is one key responsibility project managers must render for the success of the project (Nguyen, et al, 2018). To put it another way, if any of these parties are left unattended,

he or she can cut off the supply of resources and thereby make the project unfeasible. In fact, identifying and managing the stakeholders is one of the most important requirements.

That theoretical framework will form the basis for organizing, managing, and addressing requirements of all stakeholders in road infrastructure projects. The government is involved in that process because it allocates finances and grants licenses while maintaining the rules. It is important to note that the larger community also plays a role, providing a skilled workforce to support contractors in improving their technical capacities. This theory thereby guides the study's variable on the capacity for compliance with regulations. It is then used to examine contractors' ability to fulfill expectations of regulatory bodies like KRA, NEMA, and NCA. There is, however, criticism of the theory which states that it is by all means biased toward stakeholders who are external, those who can block a project success, leaving out the internal key players, such as project managers and senior-level employees, who are critical for a contractor's technical capacity.

2.2.3 Theory of Constraints

TOC is a managerial method and procedure introduced in 1984 by Eliyahu M. Goldratt in the book *The Goal*. TOC is a holistic approach to raising organizational efficiency by identifying and overcoming constraints or bottlenecks that impede a system's overall performance productivity and efficiency. Eliyahu (2019) outlined this theory to assist organizations in identifying what must be changed, methods for carrying out change, and what conditions are needed for success. The theory assumes that, given the knowledge to do so, people are fundamentally good, rational, and capable of critical thought when given the freedom to exploit those possibilities. This approach is also suited to projects that involve activities constrained by the sequence of their execution.

On the contrary, Goldratt (2019) opines that with regard to capacity constraints, either with respect to the project management system or how systems perform.

Thus, in project management, constraints could include capacity and efficiency in project cost control, conflict resolution, managerial tactics, and lack of solutions. A much-quoted barrier by Eliyahu (2019) comes from the budget restrictions that hold the managers to succeed within set spending thresholds, which makes him advise instead to fully focus on the main issues constraining productivity. Rothwell, Hohne, and King (2018) stated that not considering the entire organization when estimating costs offers another potential constraint. Thus, these theories provided a basis for this study by defining the cause-effect links from the impacts on project finances to constraints and outcomes. They informed the evaluation of contractors' technical skills within the road construction industry in Nairobi County as to whether they possess such ability to manage job timetables and financial aspects of contracting firms. In regard to this, however, the theory has received criticism for not strongly recognizing potential and effectiveness as crucial constraints in projects like the one being studied, which is very much concerned with management conflicts around budgeting, costing, and other issues, whereas efficiency and capacity should also be taken as strong constraints.

2.2.4 Resource-Based View (RBV) theory

There is much theoretical framework that will explain this correlation between contractor ability and effectiveness on any highway development initiative. One of the theories at play is the RBV theory. According to this RBV theory, internal resources and capabilities are much essential for the firm's performance. Such resources and capabilities also include the contractor's capacity in terms of equipment, skilled workforce, and financial resources (Barney, 2019).

A contractor's present capacity in mobilizing and managing resources will greatly define a project's outcome. Availment of equipment and skilled personnel will run the project within due time hence, eliminating delays associated with cost overruns (Olawale & Sun, 2018). Financial capability also allows timely purchase of materials and payment of labor, ensuring progress is not hampered (Ibbs et al., 2021).

Further to that, the RBV theory explains that competitive advantage would be sustainable where a company has either unique resources or distinct capabilities that would not be easily imitated by equals(1991). In Nairobi City County, wherein infrastructure development is crucial in economic growth and urbanization, a contractor with a superior capacity will easily secure and execute road construction projects. Ultimately these create a reputation, which aids in the repeat business and successful project outcomes (Olawale & Sun, 2018). Thus, it will be concluded that the RBV theory provides an excellent theoretical ground for understanding how 1contractor capacity. When a contractor optimally utilizes internal resources, he defines his performance in efficiency, quality, and success in the projects besides contributing to urban infrastructure and economic development.

2.3 Empirical Review of Literature

2.3.1 Contractor Technical Capacity and Performance of Projects

Several recent studies have investigated some vicissitudes of contractor technical capabilities affecting. This narrative aims at reviewing chronologically five studies initiated in the last five years - about the who, where, when, what, why, how, and results of each study. Fukuda's (2018) work in Nigeria posited that a lack of exposure to the management of personnel with technical know-how created a culture where work was done below an acceptable quality, unfit contractors, road accidents, and unwholesome

organizational practices. Said study, conducted back in 2018, was to find out how that lack of capacity affected a spectrum of areas in the construction industry. The study carried by Fukuda had construction companies in Nigeria as its part, finding out that the failure to manage personnel resulted in horrendous effects on the industry.

Worsley (2019) did study in Kenya, dealing with project execution troubles, specifically the ones requiring management on the part of ill-qualified and inexperienced managers. Such a study in 2019 was aimed at pinpointing the incidents that cause project difficulties in the country. Worsley considered construction contractors in Kenya, finding that project execution difficulties were sometimes tied up with managers lacking requisite expertise and experience.

Al-Momani (2020) does conduct study research on Jordan that studies the impact of managerial decision-making abilities on project deliverables. This research, conducted in 2020, sought to understand how decision-making affected project outcomes. Al-Momani discovered that the decision-making competencies of management groups had substantial effects on project outcomes in the construction industry in Jordan.

In 2020, Jackson stated that in his research in China, the thought process of PMs considerably affects the success of a project. The study aimed at establishing the impact of mindset on project success. Jackson's research on PMs in China emphasized the need for certain personal characteristics, including an open and positive attitude, flexibility, and carefulness to risk and approaches toward work.

Medugu et al. (2021) carried out research in Nigeria on the influence of a very competent workforce in the construction industry on projects. This study, conducted in 2021, was aimed at understanding how skilled labor had positive effects on construction projects. The research conducted by Medugu and his colleagues in the Nigerian

construction sector reported that a highly skilled labor force allows faster completion of projects and better results. Taken together, these studies reinforce the significance of technical and managerial competencies towards the performance of contracting firms. The finding stresses the importance of skilled managers, a sound decision-making process, and skilled workforces for the success of road construction projects.

2.3.2 Contractor Financial Capacity and Performance of Projects

Contractors are important to hire for these construction projects, and the financial capacity on their part is critical in determining whether a construction project succeeds or fails. The current essay presents a detailed analysis of recent studies concerning the study of several aspects of contractor financial capacity and its effects on project accomplishment. Undercapitalization, as articulated by Olusanya (2018), emerged as a core obstacle facing domestic building companies within Nigeria's construction industry. This study primarily indicates that contractors ought to possess adequate capital for purposes of effecting their functionalities.

A study by Erdogan, Saparauskas, Turskis (2019) conducted in London showed that lack of operational funds was the primary constraint to the contractors' day-to-day operations. Apparently, it could have been sufficient working capital that could have enhanced effective execution of projects by contractors. Ondara (2019) suggested careful planning and budgeting by contractors in China so as to avoid the government's delays in the execution of projects due to insufficient finances. This contributes to the need for financial strategic development and oversight to guarantee effective project execution.

Aside from that, Scarpetta, Fally, and Aghion (2018) further argue that financing must be an essential factor for all small businesses to be in a more equitable business position

with larger business enterprises. This brings to the fore the role of financial institutions in enabling contractors to grow through access to affordable and attractive finance products. Nwude (2020) stated that mismanagement within the Nigerian construction industry may lead to lower output and profit levels. This necessitates effective control of working capital to realize budget and schedule completion of projects.

2.3.3 Contractor Organizational Capacity and Performance of projects

The capacity of an organization is very crucial in determining the efficacy of contractors engaged in construction projects. This essay reviews contemporary studies that accentuate the need for organizational structure, coordination, monitoring, and evaluation for the possible performance enhancement of projects. According to Armstrong & Taylor (2019), organizational capacity is defined as a situation in which individuals are able to work effectively together to fulfill a goal. This shows that effective cooperation is important, as it allows for the optimization of other various factors within the organization.

Wolf (2018) established that organizational structure affects positively on a firm's implementation culture, which further guides its productivity and performance processes. This highlights the effect of corporate framework on overall effectiveness. Clemmer (2017) states in Kenya that there should be a structured organizational framework set up whereby project operations are regulated and contain the elements of planning, directing, organizing, and controlling of activities on an overall basis. This emphasizes the role of structure in project management assignments. Javed et al. (2018) stated that interdepartmental coordination was key to project success. This shows how vital coordination is in tying all the strings of a project together.

According to Larsen et al. (2019), in India, supervision and management were important facets of structured contractor activities. This also emphasizes the significance of coordination and control mechanisms in ensuring smooth project execution. Steyn (2017) emphasized organized work plans and schedules as crucial in managing workload to prevent under- or overloading of personnel, which downgrades performance. This emphasizes the significance of good workload management toward increased performance.

Many performance-determining factors are human-related: team composition, experience, devotion, and so on (Bredin & Söderlund, 2021). This underscores the importance of appropriate team management to enhance performance. Mbiti (2019) insisted on introducing inclusive ways in monitoring and evaluating projects in Kenya. This explains the importance of participatory approaches in finding objectives. Maaty, Akal, and El-Hamrawy (2018) examined the elements affecting the effectiveness of highway road projects in Egypt; organization was seen as a well-recognized dominant factor. This underscores the significance of organizational aspects in influencing project outcomes. In conclusion, these studies collectively emphasize the importance of organizational capacity in enhancing contractor effectiveness in building endeavors. Thus, good organizational structures, coordination mechanisms, and monitoring and evaluation processes are crucial for a project to be realized successfully.

2.3.4 Contractor Regulatory Compliance Capacity and Performance of Projects

Simply put, any successful oversight of construction projects aimed at promoting public interest must put the legal and regulatory framework first. In some ways, Stern and Cubin (2018) note that regulation has a major role to play in the success of organizations and projects. Accordingly, they purport that compliance with regulations leads to more capacity development and developed utilization rates across different sectors positively.

Thus, Gelderman et al. (2017) seek to stress that provisions, especially those concerning the establishment of compliance, should be exhaustive-particularly in weak regulatory frameworks like Kenya. According to Mukulu (2020) and Puddephatt & March (2019), in Malindi, Kenya, the procurement sector was noted to begin to increasingly face implementation trouble at the expense of contractors.

A well-designed regulatory framework, Mitchell and Ambrose (2017) mention, enhances quality, adds efficiency, safeguards individuals, manages costs, and guarantees accessibility. A set of regulations lays out minimal levels of practice-defining the expectations against which quality will be measured. Famakin and Fawehinmi (2020) highlight the importance of Safety regulations in Nigeria's construction activity, thereby necessitating deep regulation in this area.

Nmadu (2018) highlights adherence to procurement laws and expertise in sustainable development as critical in the Nigerian construction scenario. According to Umeokafor, Umeadi, and Jones (2019), major factors affecting regulations compliance in Nigeria include client pressure, regulatory inadequacy, and erosion of enforcement capacity. Minjire and Waiganjo (2019) underlined the importance of governance in ensuring compliance with legal frameworks in wide-scale projects, stating that weak regulations, bureaucratic barriers, rigid rules, and ambiguities are factors that impede compliance in the Kenyan context.

Jeptepkeny (2018) emphasized the importance of having predetermined and conveyed requirements for bidders and contractors to guarantee adherence to regulations. Gacheru and Diang'a (2019) highlighted difficulties in implementing regulations among contractors in Kenya, emphasizing challenges such as corruption, insufficient awareness, and lack of training, and limited reach by the NCA.

Ndumia (2019), focusing on construction in Nairobi, emphasized That a well-functioning regulatory framework should incorporate stakeholder engagement, be dynamic, and suggest efficient mitigation strategies, and ensure that various regulatory bodies have the necessary legal capacity to prosecute those who do not comply with the regulations. These factors are crucial for enhancing compliance within the construction industry.

2.4 Summary of Literature Review and Research Gaps

There appears to be a notable gap in research when it comes to assessing the practical capacity of roadway builders, despite an expanding collection of studies examining the roles of contractors. From the existing empirical studies, the majority have focused primarily on the financial capacity of contractors. For instance, Olusanya's research in 2018 within the Nigerian construction sector highlighted that domestic construction companies frequently encounter difficulties due to insufficient capital. Chen (2017) suggested that contractors should meticulously strategize and distribute financial resources throughout their projects to prevent interruptions due to insufficient finances. Scarpetta et al. (2017) suggested the need to provide more affordable credit options to contractors who have gained a strong foothold in the industry. Nwude (2020) added that the proper proactive efforts of the contractor mismanagement are detrimental to the productivity and level of profit. Contractor-cum-capacity studies, however, have been done elsewhere in the world and have heavily pinned progress on technical capacity. Fukuda, for example, captured research in Nigeria in 2018 stressing that the lack of human competence around technical management leads to bad workmanship, thereby complicating bad roads in Nigeria, inefficiency of the contractors, road accidents, and organizational instability. In another study, Kaklauskas, Amaratunga attached Lill in 2010 to show that managers 'failure in ensuring strong relationship formation with their

staff had adverse effects. According to Al-Momani in 2020, value determination of decision-making capabilities of the management body is a key factor affecting project results. Kaya and Patton proved positive impacts of knowledge and innovations on contractors in Turkey in their study in 2021. To close the list, however, a 2018 report by Rafee stated that a lack of skilled manpower negatively affected contractors.

In addition, almost all studies focused on contractor capacity from the organizational point of view. An example is the research of Wolf in 2018, which showed that an efficient organizational structure favors the implementation culture in a firm. As a consequence, it guides productivity and performance processes. Clemmer studied the importance of the organizational structure in regulating task execution within arrangements for job scheduling, leadership, coordination, structuring, and oversight in 2018. Javed, Zhan, and Pan emphasized the importance of the coordination of all departments across an organization in their principled findings of research conducted in 2018. Following the work of Bredin and Soderlund in 2019, one observes that several of the important determinants of contractor capacity are people-oriented: team choice, team expertise, and team dedication. In the opinion of Winfred, however, an appropriate managerial structure can support effective team management, thus improving productivity would lead to better performance in projects.

Within this empirical review, studies on contractor capacity also invade into contractor compliance. For example, Gelderman, et al. (2017) take the argument further by underlining the importance of regulation provisions for compliance purposes in weakly regulated environments like Kenya. It was observed that the only sector experiencing increasing implementation was procurement, with other aspects affecting contractors often left unaddressed, as noted by Mukulu in 2018 and Puddephatt and March in 2019. Umeokafor, Umeadi, and Jones, in their study from 2019, identified key factors

influencing adherence to rules, including Customer impact, the presence of sufficient regulations, and effective enforcement mechanisms.

Table 2. 1: Summary of Literature and Research Gaps

Author and Year	Title	Findings	Research Gaps
Hassan and Guyo (2018)	Factors that impact the Finalization of government-sponsored projects.	The research showed that project and procurement processes, design specifications, and contractor experience play significant roles in influencing the completion of road projects	In the previous study, aside from experience, other aspects of contractor capacity were not assessed. This research intends to fill these voids by evaluating technical, financial, and organizational capacities in addition to experience.
Seboru (2019)	An examination of the factors leading to delays in road construction projects in Kenya.	The study's findings revealed that factors such as bureaucratic processes, funding availability, project planning, and technological advancements play a crucial role in shaping.	The previous study overlooked the assessment of contractors' organizational capacity and their compliance with legal requirements, focusing primarily on environmental factors. This research aims to address this gap by shifting the focus from procedural
Kagiriand Wainaina (2018)	Road construction projects in Kenya.	Identified that planning, quality management, risk management, communication, and stakeholder involvement had a significant impact on the construction of roads in Kenya.	The previous study exclusively focused on management capacity, neglecting other essential capacities. In contrast, this study assesses a broader range of capacities beyond just management.
Osedo (2017)	Elements that affect the effective execution of.	The study observed that staff competency, management support, and the use of project planning tools and techniques significantly influence the	The previous study examined the planning and staffing capacity of contractors to a limited extent. In contrast, this research expands the scope to include a more comprehensive assessment of planning, staffing, organizational, and compliance capacities of the contractors.

		implementation of projects.	
LiNianjum, (2020)	Socioeconomic factors influencing the execution of road construction projects.	The results of the study show that factors such as training, financial condition, and governmental assistance play a crucial role in influencing contractors.	The previous study focused on the environment rather than the contractors themselves. In contrast, this study examines the capacity of contractors and makes a comparison.
Wairimu (2019)	Key factors affecting the successful completion of road.	The study found that having sufficient resources, skilled personnel, and experienced contractors with the right expertise played an essential function in guaranteeing the successful finalization of road projects."	The study examined the contractors' capacity in a concise manner, utilizing a limited number of competence indicators across various capacities, aiming to provide a comprehensive view of contractor capacities
Njenga (2018)	Key elements that influence the smooth and timely completion of road construction projects.	The ability of contractors to perform efficiently and effectively in road construction projects was shaped by their engagement in benchmarking practices, project management practices, procurement, and communication.	The study focused on factors that were outside the contractor's control, giving more emphasis to the effectiveness of systems. However, the study did not effectively investigate contractor capacity. the role of contractor capacity in a more comprehensive manner.
Mwangi (2019)	Factors influencing the effectiveness of contractors in executing road construction projects across Kenya.	The research revealed working capital, workforce, organizational structure, and client support play significant roles in	This study endeavored to evaluate the capacity of contractors, focusing solely on their financial and staffing capabilities. Building upon these earlier findings, the current research expands its scope to encompass a broader spectrum,

		influencing contractors in road construction.	including organizational, technical, and compliance capacities.
--	--	---	---

Source: Researcher (2022)

2.5 Conceptual Framework

A conceptual framework visually maps out the relationships between the variables in a research investigation. The diagram below highlights how these research elements interact, along with the specific indicators used to measure them. The arrows in the illustration represent the flow of influence or the causal links between these factors.

INDEPENDENT VARIABLES

DEPENDENT VARIABLE

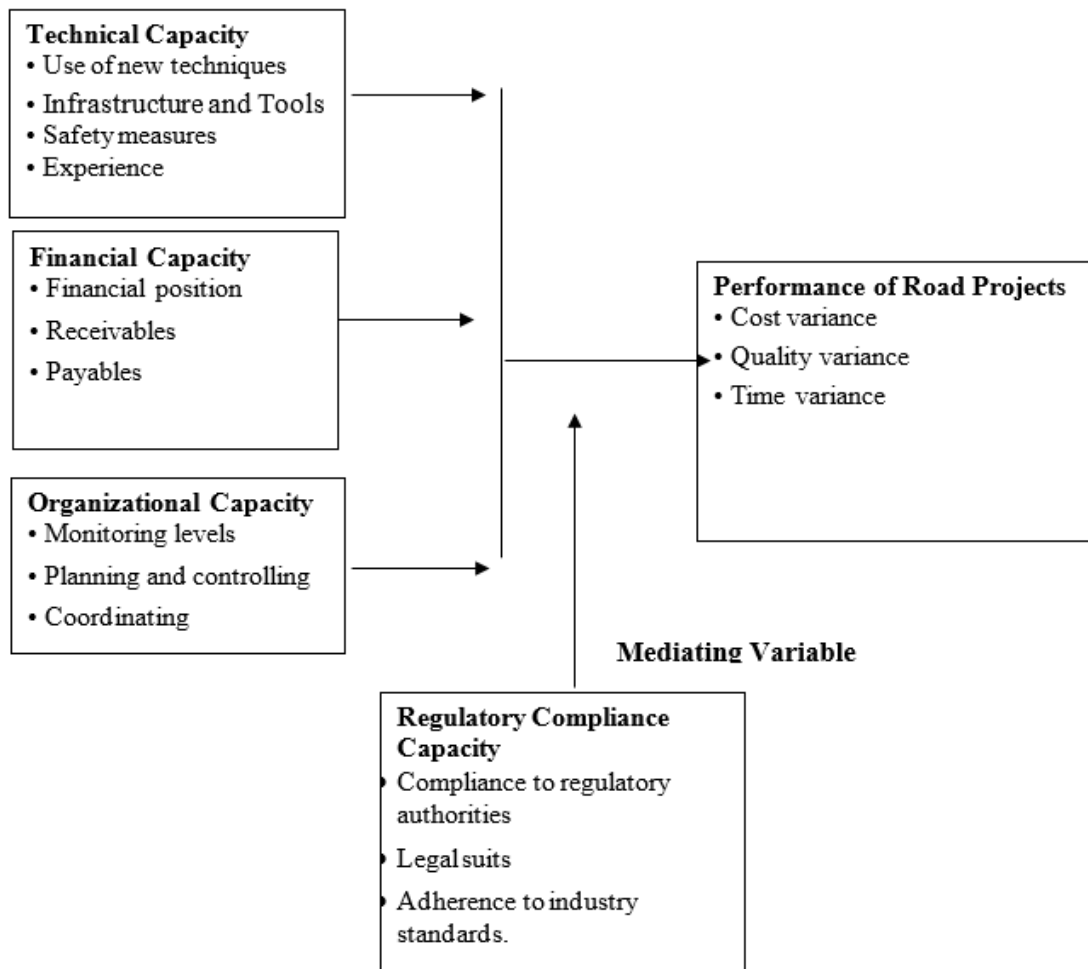


Figure 2.1 Conceptual Framework

Source (Researcher, 2023)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter delineates the methodology employed in this study. It encompasses the study's design, the demographic group it aims to investigate, the techniques used for gathering and analyzing data, the sampling methodology, and the steps to guarantee the accuracy and trustworthiness of the research. These components collectively will contribute to achieving the study's objectives

3.2 Research Design

Descriptive research is usually used to describe real-world events or phenomena as they occur naturally (Mugenda & Mugenda, 1999). The descriptive research would ask and answer questions regarding who, what, when, and where. This design allowed for an accurate and unbiased description of the phenomenon of interest with regard to participant selection, data collection, and data interpretation. To further explain, Kothari (2017) states that descriptive research is appropriate in aligning research objectives and is cost-effective in terms of resources for data gathering, measurement, and analysis.

3.3 Target Population

Populations referred to the totality of all subjects, entities, or elements that were considered in drawing statistical inferences or data, according to Cooper and Schindler (2018). In this study, the focus group was defined as the nominated group under consideration in the study that helped the researcher in selecting the respondents for research; its primary function was to assist in identifying the people who would be

Invited to partake in the study. The target population served as the point for sampling the research population.

The target population for the study comprised five ongoing road projects in Nairobi County: The Waiyaki Way-Redhill Link Road, Upgrading of Mombasa Road, Upper Hill Road Phase II, Ngong Road-Kibera-Kung'u Karumba-Lang'ata Road, and Ngong Road (Dagoretti Corner-Karen Roundabout). The respondents within these project sites were senior staff members from the road construction teams comprising 20 Ministry of Roads Engineers, 15 Technical Auditors, 30 Contractor Consultants, and 10 Engineers from the KURA, making a total of 75 individuals in charge of supervising road construction in Nairobi City County.

Table 3.1 Target Population

Region	Category of Respondents	Number	Percentage (%)
Nairobi	Ministry of Roads Engineers	20	26.67 %
	Technical Auditors	15	20 %
	Contractors' consultants	30	40 %
	Engineers from KURA	10	13.33 %
	Total	75	100 %

Source: KURA, 2020; Ministry of Roads, 2020)

3.4 Sampling Procedures and Sample Size

A sample had been a subset of the entire target population, which contributed to its being a representative of the accessible population. Findings from that representative sample could be taken as a true reflection of the characteristics of the entire population under study, according to Pavan and Kulkarni, 2019. Pavan and Kulkarni also observed in 2021 that as the sample size increased, the margin of error shrank, and thus, was

more important to have a proper sample size to align well toward the research objects. Using sample size determinants, this research applied the formula in proposing Slovin 2012 but as illustrated be below.

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

Where: n is the sample size, N is the population and α is the margin of error (0.05)

$$n = \frac{75}{1 + 75(0.05)^2}$$

$$n = 63$$

The research utilized a stratified random sampling method, which involved selecting study participants from four strata: Ministry of Roads Engineers, Technical Auditors, Contractors' consultants, and Engineers from KURA. The determined sample size for the study consisted of 63 respondents, as detailed in Table 3.2 below.

Table 3.2 Sample size

Region	Cadres	Target Respondents	Sample size
Nairobi	Ministry of Roads Engineers	20	17
	Technical Auditors	15	14
	Contractors' consultants	30	23
	Engineers from KURA	10	9
TOTAL		75	63

Source: Researcher (2014)

3.5 Data Collection Instruments

The research tool for collecting primary data was semi-structured questionnaire. A questionnaire is a predetermined set of documented queries presented to respondents to collect data. The questions were framed in simple but understandable languages to ensure that accurate and precise responses are provided, adapted to the ability or education level of the respondents interviewed. Many types of questions closed-, open-ended and Likert scale were also included in the research survey for getting many insights-the first part (part A) collects background information about the participant; part B investigates the impact of monetary resources on road project efficiency was examined; section C investigated the influence of specialized expertise on project effectiveness; and finally, part D investigates the impact of compliance with relevant regulations on the performance of road projects massively.

Finally, Part E investigated how contractor compliance with regulations impacted the performance of road projects. This structured approach streamlined the analysis process, as the information collected was readily available and usable. The questionnaire also included questions on project performance to gather data about the study variables.

3.6 Pilot study

To evaluate the questionnaire's accuracy and consistency, a preliminary investigation was carried out within the Nairobi area. In this initial phase, a limited number of questionnaires were administered to 10 respondents, equally comprising Ministry of Roads Engineers, Technical Auditors, Contractors' consultants, and Engineers from KURA, all from the Kasarani-Mwiki Road project. Any questions that were found to be irrelevant or unclear were revised and rephrased to ensure that the target respondents found them more comprehensible and comfortable to answer. It was important to note

that the individuals those participants from the preliminary investigation were excluded from the primary research participants.

3.7 Validity and Reliability of the Research Instrument

3.7.1 Validity of the Research Instruments

Validity in research referred to the extent to which the data collection instruments, such as surveys or questionnaires, accurately measured the specific data that the researcher intended to assess. It served as an indicator of the accuracy of the measurement process, essentially showing how well the collected data represented the variables under investigation, as emphasized by Kothari (2019). It was imperative for analytical purposes to obtain a fine measurement of the study variable so that useful conclusions could be derived according to Ndambiri, Kiragu, and Riro (2018). The questionnaire's content validity was therefore considered in a very comprehensive manner. The supervisor, working alongside other experts, performed a thorough review of the questionnaires. Their task was to determine the degree of ambiguities, inconsistencies, or inconsistencies found in the content of this questionnaire. The same application of review ensured that the questionnaire matched the variables in the study. In this way, the study sought to deal with the possible challenges of different understanding thereof and responses by the respondents so as to enhance its content validity.

3.7.2 Reliability of Research Instruments

According to Rogers et al. (2016), reliability value in research entails the extent to which a measuring instrument would yield almost the same outcomes consistently. Reliability assessment usually involved asking the same set of questions from the same set of respondents at different times, and examining the extent of consistency. Essentially what it is, is the consistency of the instruments in the study, meaning that

when such instruments are used, they should consistently be yielding consistent findings while tested on the same individual several times or on different ones, as Mugenda and Mugenda (2003) explain. The Cronbach Alpha Coefficient was used for measuring the reliability of the questionnaires. The study set the level of acceptance of reliability for questionnaires at 0.70 as cited from McNeish (2017). The responses collected during the pilot analysis were analyzed for internal consistency to determine whether research instrument was reliable. Variables below the acceptability threshold for reliability were re-evaluated for accuracy, and ambiguity was resolved to increase its reliability.

3.8 Data Collection Procedure

Data collection procedures entailed a sequence of actions undertaken by the researcher to obtain the specific data type required for the study. In this study, data collection commenced after securing a series of necessary approvals. The first approval, which offered a research authorization letter. In addition, the study did request approval for research from NACOSTI, and the subsequent necessary permissions from the management of the selected road construction firms were acquired. Upon acquiring the various approvals, data collection was conducted on scheduled dates. The selected participants and requested that they be filled in and returned. By using the drop-and-pick method for data collection. The procedure covered the dropping of questionnaires to the participants, allowing them time to complete those questionnaires, followed by collecting the completed questionnaires from them.

3.9 Data Analysis and Presentation

As per Bailey (1984), the analytical procedures involved an arrangement of the packaged information, ordering and presenting the key elements such that communicated. The collected data was therefore revised, encoded, tabulated, and

mostly analyzed qualitatively. It was then entered for analysis using MS Excel spreadsheets before being imported into SPSS version 21 for more analyses. The results are presented in tables and charts as appropriate. The quantitative methods employed included both descriptive and inferential analyses. Descriptive analysis provided statistics such as the mean, standard deviation, and percentages, which were crucial for summarizing the data. Inferential analysis encompassed correlation and multiple regression analyses to facilitate a more in-depth and concise exploration of the in the study. (denoted as 'r'), and a p-value below 0.05 indicated that a relationship was statistically significant. The following multiple linear regression model was utilized in the analysis.

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

Where Y= performance of road projects

β_0 = Intercept

X1= Contractor Technical Capacity

X2= Contractor Financial Capacity

X3= Contractor Organizational Capacity

X4= Contractor Regulatory Capacity

$\beta_1, \beta_2, \beta_3, \beta_4$ = Coefficients

e= Error variable

To ensure the validity of the multiple linear regression model, the study adhered to the fundamental assumptions of regression analysis; by adhering to these assumptions, the study ensured the robustness and reliability of the regression model in evaluating the impact of contractor capability on the success.

Linearity: A linear connection was postulated between the predictors and the outcome. This was verified using scatter plots and residual plots to confirm that the effect of each independent variable followed a straight-line relationship.

Normality: In this study, it was assumed that the residuals (errors) of the regression model followed a normal distribution. To verify this, both visual and statistical methods were used. Graphical techniques, including histograms and normal probability plots, provided a visual check, while the Shapiro-Wilk test was conducted to confirm whether the residuals adhered to a normal distribution pattern.

Homoscedasticity: This research posited that the error term's variability remained uniform throughout the independent variables' range. This assumption was checked using residual scatter plots, ensuring that no systematic pattern was observed, which would indicate unequal variances (heteroscedasticity).

Multicollinearity: To avoid issues of multicollinearity (high correlation between independent variables), the study examined VIF and Tolerance values. A VIF below 10 and a tolerance level above 0.1 confirmed that no significant multicollinearity existed among the independent variables, ensuring the stability of the regression estimates.

3.10 Ethical Considerations

The researcher¹ made an effort to comply with all the laid-down guidelines as prescribed by Kenyatta University and the Kenya National Highways Authority. The research was conducted only after approval from the Director of KeNHA. An introductory letter was used with every questionnaire administered, and respondents were expected to read it before filling out the questionnaire. Confidentiality of the respondents was maintained, and the results were constrained to academic use. Ethics

were adhered to throughout the course of the study. The objective of the research and guaranteed that their feedback would be utilized solely for educational aims.

CHAPTER FOUR

RESULTS AND FINDINGS

4.1 Introduction

The chapter presents the study's findings on the contractor's capacity and the performance of road construction projects. It includes an analysis and interpretation using both descriptive and inferential statistics.

4.2 Response Rate

The study sample comprised 63 Participants, such as engineers from KURA, contractor's consultants, technical auditors, and Ministry of road Engineers. Local contractors were chosen from those actively involved in road projects within Nairobi City County. Out of the 63 intended participants, 54 successfully filled out and submitted the surveys, resulting in an impressive response rate of 88 percent. This strong participation Was deemed adequate for creating meaningful conclusions, as it accurately represented the study population. As highlighted by Mugenda and Mugenda (2003), A reply rate of 50% is adequate for evaluation and documentation, while 60% is commendable, and anything above 70 percent is considered outstanding. Therefore, the rate of response in this research was exceptional.

Table 4.1 Response Rate

	Frequency	Percent (%)
Completed Questionnaires	54	88%
Non-Response	9	12%
Total Sample	63	100

Source: Survey Data (2024)

4.3 Background information of the Respondents

The analysis of respondents¹ focused on their characteristics, including age bracket, educational level, organizational position, and the duration of their employment in the road construction sector.

4.3.1 Respondents' Distribution

The research sought to examine the occupational distribution of participants to evaluate the extent of specialized skills present in the field of roadway development, which is primarily specialized. The results showed that 13 respondents (19.7 percent) were contractors' consultants, 21 (34.85 percent) were Engineer from KURA, 16 (24.24 percent) were technical auditors and 14 (21.21 percent) were Ministry of Road engineers. This diverse sample was intended to remove any prejudice or imbalance of information that could be present affect a single professional category and to ensure a comprehensive and balanced perspective on the topic.

Table 4.2 Respondents' Distribution

Respondents	Frequency	Percentage
contractors' consultants	13	19.7%
Engineer from KURA	21	34.85%
Technical auditors	10	24.24%
Ministry of Road engineers	14	21.21%
TOTAL	54	100%

Source: Survey Data (2024)

4.3.2 Level of Education

Figure 4.1 depicts the academic and occupational credentials of the study's participants.

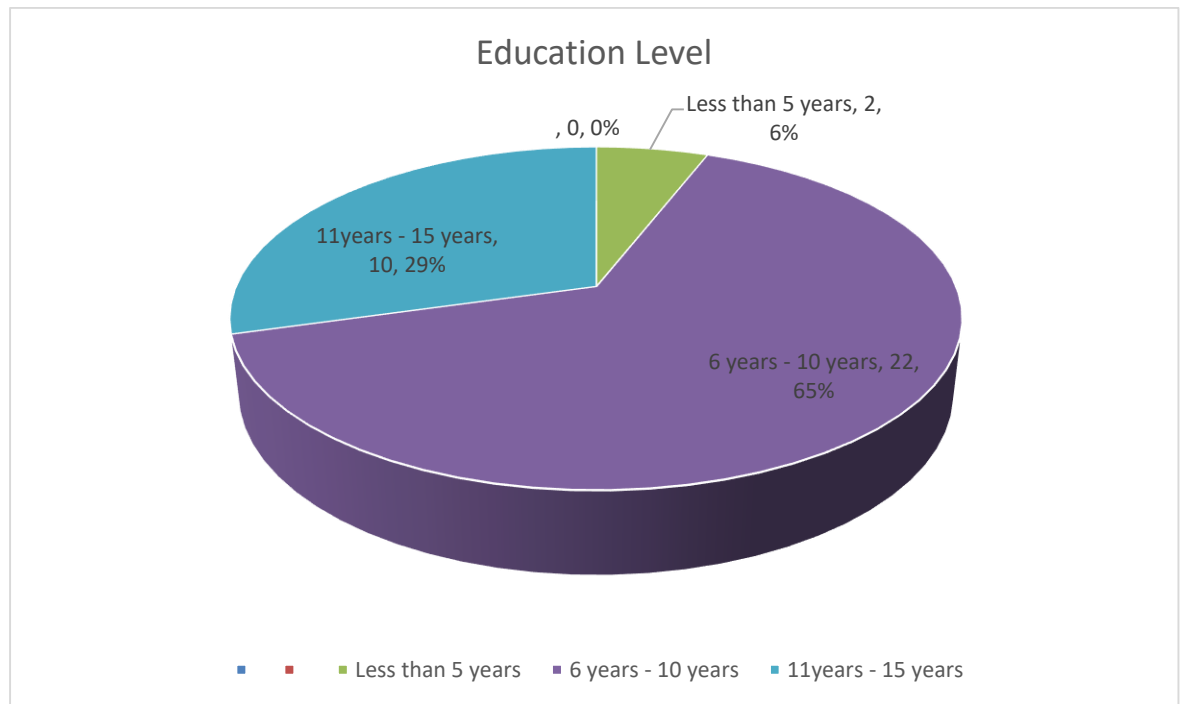


Figure 4.1: Education Level

Source: Survey Data (2024)

The study results indicated that 53% of the participants possessed bachelor's degrees, 27 % had master's degrees, 12 percent possessed diploma certificates, and only 8 percent held PhDs. The majority of professionals, particularly engineers and building contractors, had bachelor's degrees. Overall, all respondents were deemed qualified. Given that road construction activities are highly technical, it is essential for contractors to adhere to standards that require the use of qualified professionals to ensure quality work.

4.3.3 Industry Experience

The research sought to evaluate the respondents' level of expertise in the road construction sector. The findings indicated that most participants were highly experienced professionals with over a decade of industry involvement, while a considerable proportion had worked in the field for more than twenty years. However, the implementation of devolution has led to a significant rise in the number of contractors and consultants. Many emerging contractors encounter fierce competition and face difficulties in obtaining road construction contracts due to strict eligibility criteria.

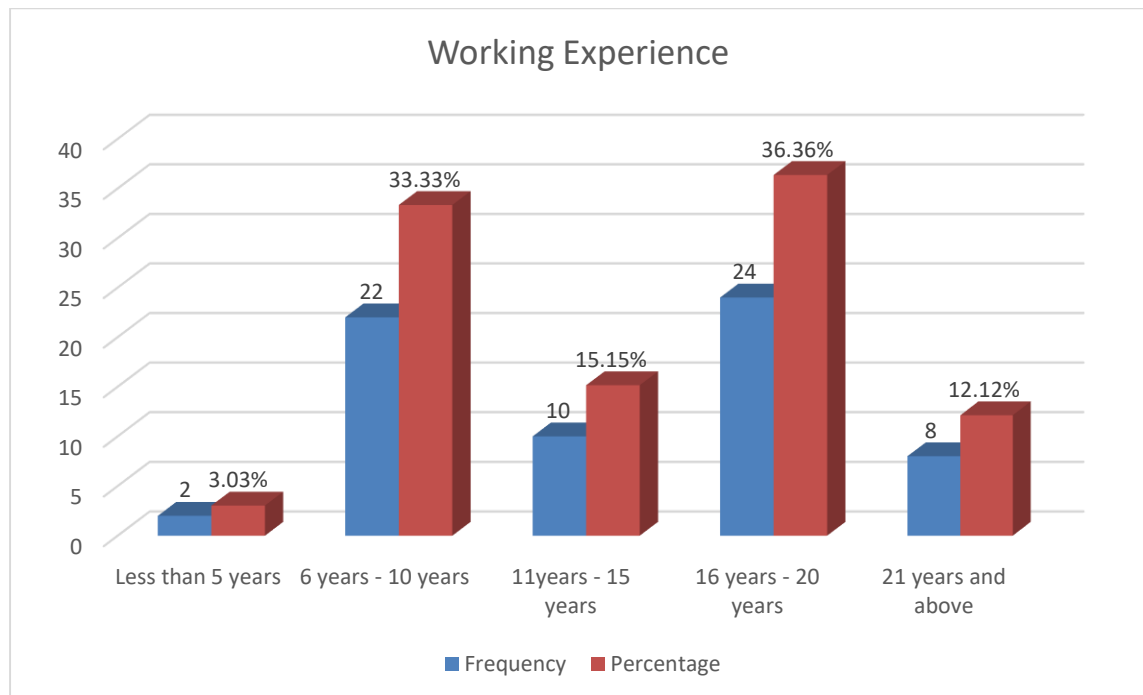


Figure 4.2: Working Experience

Source: Survey Data (2024)

The research discovered that 12.12% of participants had been engaged in road construction projects for over 21 years, while 33.33 percent had between 6 to 10 years of experience. Another 36.36 percent had been engaged in road projects for 16 to 20

years, and 15.15 percent for 11 to 15 years. Only 3.03 % of respondents had less than 5 years of experience in road projects.

Table 4.3 Working experience

Working experience	Frequency	Percentage
Less than 5 years	2	3.03%
6 – 10 years	20	33.33%
11 – 15 years	10	15.15%
16 – 20 years	14	36.36%
Above 21years	8	12.12%
TOTAL	54	100%

Source: Survey Data (2024)

4.3.4 Size of the Contracting Firms

The research sought to evaluate the dimensions of construction companies, using the number of permanent skilled workers as the metric. Nevertheless, it was noted that at Building sites, the labor force of informal and short-term workers frequently exceeded that of permanent staff. This was attributed to cost-cutting practices, leading certain permanent staff members to operate across multiple construction sites. It was common to see a large pool of unskilled workers queuing daily for job opportunities at almost all contracting firms. As a result, only a limited number of participants employed by different companies held permanent positions, with each construction firm generally retaining a minimum of two full-time staff members. Despite this, these permanent employees provided a reliable basis for gathering information due to their familiarity

with the firm's operations. the number of permanent skilled workers and their years of experience in the industry.

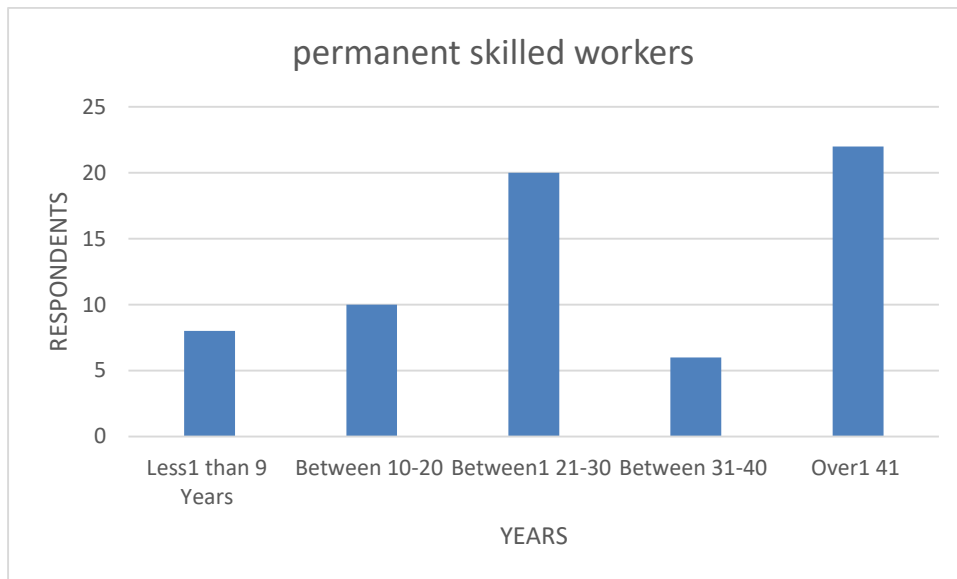


Figure 4.3: Permanent Skilled Workers

Source: Survey Data (2024)

4.4 Descriptive statistics

4.4.1 Financial Capacity

The study aimed to investigate influenced contracting firms' ability to secure loans, maintain sufficient Operational cash flow, and settle obligations to stakeholders such as workers, vendors, and subcontractors. Additionally, it explored the effects of postponed government payments on their activities. Table 4.4 presents the findings related to these aspects.

Table 4.4 Financial Capacity

Activity	Mean	SD
a) How does the lack of collateral impact one's ability to secure loans?	3.871	0.573
b) How does a shortage of operational cash impact a business's capacity to maintain its activities.?	3.469	0.808
c) How does late payment by the government affect the financial stability of businesses relying on timely payments?	2.414	0.642
d) How does late payment of salaries impact employee morale and financial stability?	2.213	0.681
e) How does late payment to suppliers impact a company's relationships and operational efficiency?	3.012	0.783
f) How does non-payment of subcontractors affect project timelines and overall project costs?	4.042	0.542
g) How does the denial of bank overdrafts impact a business's ability to manage its short-term cash flow needs?	3.571	0.643
Aggregate score	3.227	0.099

Source: Researcher 2024

Referring to Table 4.4, a considerable proportion of participants indicated frequent difficulties in obtaining loans due to insufficient collateral (mean = 2.213, std dev = 0.681). This result corroborates the conclusions reached by Badu et al. (2012) in Ghana, which highlighted that contractors, regardless of size, faced challenges in securing financial resources for similar reasons. Additionally, a majority of respondents

frequently experienced cash flow shortages for operations (mean = 3.871, standard deviation = 0.573).

Furthermore, respondents commonly faced delayed payments from the government (mean = 2.414, standard deviation = 0.642) and regularly encountered delays in salary payments (mean = 3.469, standard deviation = 0.808). Many also reported regular denial of bank overdrafts (mean = 4.042, standard deviation = 0.542), echoing findings from Badu et al. (2012) regarding difficulties in fund access due to asset structure that fails to impress lenders.

Moreover, a majority of respondents indicated frequent delays in paying suppliers (mean = 3.012, standard deviation = 0.783) and subcontractors (mean = 3.571, Std dev = 0.643). The overall average for monetary capability among regional contractors in relation to road project performance was 3.227, suggesting that most respondents felt their financial capacity was insufficient to fulfill both immediate and future commitments.

Based on the standard deviation aggregate scores of 0.099 in the elements used to measure financial capacity, it can be inferred that there was relatively little variability in the respondents' views. This indicates a strong agreement among participants concerning the difficulties they face in financial capacity, suggesting homogeneity in their perceptions across the measured elements.

4.4.2 Technical Capacity of Constructing Firms

The research examined the technical capability of road construction companies by evaluating their adoption of technology, managerial proficiency, the standard, the effectiveness of safety measures to prevent accidents, the implementation of

innovative construction techniques, and the handling of change in ongoing projects.

Table 4.5 presents the respondents' feedback on these aspects of technical capacity.

Table 4.5 Technical Capacity

Activity	Mean	Std. Dev
a) How does the adoption of modern innovations influence output and effectiveness in the workplace?	1.431	1.124
b) How does managerial competence influence a company's overall performance and success?	2.602	0.614
c) How does making quality work plans contribute to project success and team efficiency?	3.728	0.903
d) What strategies can be implemented to effectively avoid accidents in the workplace?	4.221	0.991
e) Implementation of innovative techniques for highway development.	1.790	0.824
f) How can organizations effectively manage change during ongoing work processes to minimize disruptions and ensure smooth transitions?	2.052	0.812
Aggregate score	2.637	0.174

Source: Researcher 2024

Referring indicated that most participants rated the adoption of new technology as highly inadequate (mean=1.431, standard deviation=1.124). Likewise, managerial proficiency was predominantly viewed as substandard or questionable (mean=2.602, standard deviation=0.614), aligning with Worsely's (2009) findings in Kenya, which highlighted challenges faced by contractors hiring managers lacking sufficient skills and experience for effective project implementation.

However, respondents generally rated the quality of work plans as good (mean=3.728, standard deviation=0.903), indicating a relatively positive perception in this area. The management of safety standards to prevent accidents at work was perceived very positively, with a majority ranking it as very good (mean=4.221, std dev=0.991).

On the other hand, the application of new construction methods was viewed as poorly executed by most respondents (mean=1.790, standard deviation=0.824), echoing findings by Bratton & Gold (2012), who noted challenges in adapting to new methods due to skills gaps among contractors. Similarly, managing change in ongoing work was also perceived as inadequate (mean=2.052, standard deviation=0.812).

The standard overall average for technological proficiency among regional contractors, based on road project performance, was 2.637. This suggests that a majority of respondents felt their technical capacity was insufficient to meet both short-term and long-term obligations (mean \approx 3.00). The relatively consistent standard deviation average scores was 0.1737 indicate a degree of homogeneity in respondents' views on technical capacity.

4.4.3 Organizational Capacity of the Contracting Firms

The research aimed to assess the operational capability of companies in areas such as monitoring, task distribution, cost management, coordination, oversight, and work planning. The evaluated responses revealed that the organizational capacity of highway development companies in Nairobi. varied from strong to weak, depending on specific factors. Table 4.6 presents the survey results on various elements of organizational capacity.

Table 4.6 Organizational Capacity of the Contracting Firms

Activity	Mean	SD
There is effective monitoring of the work done in road construction projects.	3.342	0.791
Tasks are allocated efficiently among team members.	2.280	0.896
The organization effectively controls the costs of operations.	3.446	1.106
The work of various departments is well-coordinated.	2.682	1.127
Supervision of work is conducted effectively.	3.014	0.962
Planning for work is done in a structured and timely manner.	4.048	0.884
Aggregate score	3.135	0.132

Source: Researcher 2024

Referring to the results outlined in Table 4.6, the survey findings reveal that the oversight of ongoing road projects was assessed as moderate, with an average score of 3.342 and of 0.791. Additionally, participants highlighted inadequate task distribution, reflected by a mean of 2.280 and a std dev of 0.896. A study conducted by Steyn (2007) in Malawi affirmed that ineffective work plans and scheduling contributed to employee overburdening due to inefficient task allocation. Cost control was perceived as average, with a mean of 3.346 and a std dev of 1.106, according to a majority of respondents. Ahiaga-Dagbui et al. (2017) suggest that effective cost control is crucial for well-organized contractors. Coordination across departments was rated average (mean=2.682, standard deviation=1.127), as was supervision of work (mean=3.014, standard deviation=0.962). Participants reported effective work planning, with a mean

score of 4.048 and a std dev of 0.884. In general, the mean organizational capability of local contractors involved in road projects was 3.135, suggesting inadequate capacity according to respondents (mean≈3.00). The consistent standard deviation average scores of **0.132** indicate uniformity in respondents' views on organizational capacity.

4.4.4 Regulatory Compliance Capacity of Contracting Firms

The investigation assessed the capacity of roadway development companies in Nairobi to comply to regulatory requirements by assessing the occurrence rate of sanctions from the NCA., complaints from NEMA, occurrences of court cases related to road construction performance, and adherence to industry standards. Table 4.7 clearly illustrates that non-compliance is widespread within the industry.

Table 4.7 Regulatory Compliance Capacity of Contracting Firms

Activity	Mean	SD
a) Extent of Penalties by the National Construction Authority (NCA):	2.943	0.601
b) Frequency of Complaints Received from NEMA:	3.579	0.941
c) Incidence of Court Cases Faced Due to Regulatory Non-Compliance:	3.322	0.723
d) Adherence to Industry Standards in Construction Projects:	3.155	0.764
Aggregate score	3.250	0.141

Source: Researcher 2024

As shown in Table 4.7, a considerable proportion of participants reported frequent fines imposed by the NCA (mean = 2.943, std dev = 0.601). Gacheru and Diang’a (2015) link these high penalty rates to inadequate training and awareness initiatives by the NCA. Additionally, a large number of respondents acknowledged recurring grievances from NEMA (mean = 3.579, standard deviation = 0.941). Moreover, many participants indicated regular involvement in legal disputes (mean = 3.322, standard deviation = 0.723). Lastly, a significant proportion confirmed consistent compliance with industry regulations in construction (mean = 3.155, std dev = 0.764). The relatively small range in std dev values (from 0.601 to 0.941) suggests a uniform perception among respondents regarding challenges in regulatory adherence.

4.4.5 Performance in New Road Projects

An assessment was conducted on the key performance indicators, namely time, cost, and quality, to identify which factor had the greatest impact on overall performance.

Table 4.8 Performance in New Road Projects

Activity	Mean	SD
a) The highway development projects are finalized within the allocated budget.	2.724	0.556
b) There is minimal rework required on completed road construction projects.	3.031	0.662
c) The highway development initiatives are finalized within the designated time.	3.048	0.678
Aggregate score	2.934	0.660

Source: Researcher 2024

Based on the data presented in table 4.8, a significant majority of respondents reported difficulties in staying within project budgets (mean=2.724, standard deviation=0.556). Moreover, a majority confirmed repeated modifications on finalized projects. (mean=3.031, std dev=0.662), and regular failure to meet project deadlines (mean=3.048, std dev =0.678). The overall average performance of road projects, with a mean of 2.934, generally agree that projects are not meeting expectations in terms of duration, expense, and standard. (mean≈3.00). The consistent standard deviation aggregate scores was 0.660 suggesting a uniform perception among respondents regarding the challenges in road project performance.

4.5 Multiple Linear Regression model diagnostic tests

The diagnostic assessments carried out encompassed tests for distributional normalcy and collinearity, as described below.

4.5.1 Multicollinearity Test

The research carried out a multicollinearity analysis to evaluate the correlation between independent variables. Multicollinearity, characterized by high correlations among variables in a dataset, can distort the parameters in regression models, potentially leading to misleading conclusions. Table 4.9 presents the results of this test, ensuring that correlations between the study variables were sufficiently low to avoid multicollinearity issues in the regression analysis.

Table 4.9: Multicollinearity Test Using Tolerance and VIF

	Multicollinearity Statistics	
	Tolerance	VIF
Financial Capacity	.254	3.934
Technical Capacity	.220	4.535
Organizational Capacity	.308	3.247
Regulatory Compliance	.229	4.375

Source: Researcher 2024

From the study outcomes in Table 4.9, Financial Capacity (VIF=3.934), Technical Capacity (VIF=4.535), Organizational Capacity (VIF=3.247) and Regulatory Compliance (VIF=4.375) had VIF values less than 5. Since VIF values for every predictor variable was less than 5, the multicollinearity will not be a problem in the regression model.

4.5.2 Normality test

A normality assessment was performed on all study variables utilizing various indicators, the results are presented in Table 4.10.

Table 4.10 Tests of Normality

Variables	Kolmogrov-Smirnov		
	statistic	Df.	Sig.
Financial Capacity	0.094	72	0.300
Technical Capacity	0.093	72	0.291
Organizational Capacity	0.097	72	0.299
Regulatory Compliance	0.094	72	0.301
Performance	0.090	72	0.300

Source: Researcher 2024

Drawing from the results in Table 4.10, The data set yielded values of 0.300, 0.291, 0.299, and 0.301. Similarly, all performance measures showed a statistical significance of 0.300. These results suggested that both the variables and the performance metrics originated from a normally distributed population, given that their significance values surpassed 0.05, consistent with Norusis's recommendations (2007).

4.6 Multiple Linear Regression Analysis Results

In this research, inferential analysis was utilized to examine the connection The study sought to explore the link between a treatment and its result, and to assess the importance of this connection. Particularly, the investigation focused on the relationship between the criterion variable output of highway building companies and several predictor variables. This entailed performing a measurement to comprehend how changes in the predictor variables affect the criterion variable, thus scrutinizing the elements that affect the productivity of highway building companies.

Table 4.11 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error
1	.853a	.727	.713	.116

Source: Researcher 2024

As per the study outcomes in Table 4.11, the R-square was 0.727 which shows that 72.7% of the changes in performance of road construction projects in Nairobi city county, Kenya could be explained by various contractors' capacity such as Technical Capacity, Financial Capacity, Organizational Capacity and Regulatory Compliance Capacity. Other contractors' capacity account for 27.3% of the variations in performance.

4.7 Correlation Analysis

A correlation assessment was performed to determine the link between contractors' capability and the success of highway development projects. The findings are represented in Table 4.12.

Table 4.12: Correlation Analysis Results

		Technical Capacity	Financial Capacity	Organizational Capacity	Regulatory Compliance	Performances of road construction
Technical Capacity	Correlation(r)	1				
	p-value					
Financial Capacity	Correlation(r)	.795*	1			
	p-value	.000				
Organizational Capacity	Correlation(r)	.744*	.815*	1		
	p-value	.000	.000			
Regulatory Compliance Capacity	Correlation(r)	.838*	.823*	.744*	1	
	p-value	.000	.000	.000		
Performances of road construction	Correlation(r)	.672*	.735*	.838*	.607*	1
	p-value	.000	.000	.000	.000	

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

Source: Researcher 2024

According to the results presented in Table 4.12, the study established a strong and statistically significant positive correlation between contractors' technical capacity and the performance of road construction projects in Nairobi City County ($r = 0.672$; $p < 0.001$). This implies that improvements in contractors' technical expertise, equipment adequacy, and skills are associated with better project outcomes in terms of quality, timeliness, and cost efficiency. Similarly, the results indicated a strong and positive relationship between contractors' financial capacity and project performance ($r = 0.735$; $p < 0.001$), suggesting that firms with adequate financial resources are more likely to deliver projects successfully and meet contractual obligations.

Furthermore, the findings revealed that organizational capacity exhibited the highest positive correlation with project performance ($r = 0.838$; $p < 0.001$). This indicates that effective management structures, internal coordination, and decision-making processes within construction firms play a crucial role in determining project success. In addition, regulatory compliance capacity was also found to be significantly and positively related to project performance ($r = 0.607$; $p < 0.001$), highlighting the importance of adherence to legal, environmental, and safety standards in enhancing overall project outcomes. Overall, the results imply that all dimensions of contractors' capacity technical, financial, organizational, and regulatory are key determinants of road construction project performance in Nairobi City County. These findings align with those of Kolapo, Mokuolu, Dada, and Adejayan (2021), who reported that contractors' capacity significantly influences project performance by improving service delivery, product quality, and customer satisfaction through better operational efficiency and innovation.

4.8. Multiple Linear Regression Analysis

The study utilized multiple regression analysis to assess the impact of local contractors' capabilities. This statistical method allows for testing the relationships among predictor variables and their impact.

Table 4.13 displays the outcomes of the A multivariate regression model, providing statistics like coefficients, standard deviations, t-statistics, and p-values, was employed. This evaluation helps measure the degree to which variations in monetary aptitude, technical capability, organizational competence, and regulatory adherence jointly influence performance outcomes of road projects. By using statistical software like SPSS Version 21.0, the study coded, entered, and computed these regression measures to assess the strength and significance of these relationships.

Table 4.13: Regression Coefficients

Model	Un-standardized		Standardized		t	Sig.
	Co-efficients		Co-efficients			
	B	Std. Error	Beta			
1 (Constants)	.485	.151			9.510	.001
Financial capacity	.797	.073	.672		10.918	.002
Technical capacity	.772	.069	.735		11.188	.003
Organizational capacity	.807	.119	.719		6.789	.001
Regulatory capacity	.638	.092	.607		6.922	.000

Source: Researcher 2024

Using the regression coefficients, the regression model equation was:

$$Y = 0.485 + 0.797 X1 + 0.772 X2 + 0.807 X3 + 0.638X4$$

Where Y= Performance of road projects in Nairobi County

X1= Financial capacity

X2= Technical capacity

X3= Organizational capacity

X4= Regulatory capacity

The regression analysis reveals several statistically significant relationships between different capacities and performance. Firstly, a rise in monetary capability by one unit is associated showing a performance gain of 0.797 units, suggesting a beneficial effect on performance ($\beta = 0.797$, $p = 0.002$). Similarly, technical capacity, with a one-unit increase leading to a performance increase of 0.772 units ($\beta = 0.772$, $p = 0.003$). Organizational capacity also demonstrates a positive influence, where a one-unit

increase results in a performance increase of 0.807 units ($\beta = 0.807$, $p = 0.001$). Lastly, regulatory compliance capacity positively affects performance, with a one-unit increase correlating to a performance increase of 0.638 units ($\beta = 0.638$, $p = 0.000$). These findings collectively highlight the significant role that each capacity plays in enhancing overall performance, underscoring their importance in the context of road projects in Nairobi city.

The research results demonstrate that fiscal capability substantially affects performance, evidenced by a coefficient of 0.797 ($p = 0.002$). This suggests that a single unit augmentation in monetary capacity yields a 0.797 enhancement in performance. Financial capacity, including funding availability, budgeting effectiveness, and timely disbursement of funds, is crucial for project success. These findings align with Ofori (2021), who highlighted that adequate financial resources enhance project completion rates and quality. Respondents emphasized that financial capacity determines the ability to procure materials, hire skilled labor, and ensure timely execution, while inadequate funding results in delays and substandard work.

Technical capacity also significantly impacts performance ($\beta = 0.772$, $p = 0.003$), emphasizing the importance of skilled labor, modern construction techniques, and technological innovation in enhancing project outcomes. This finding is consistent with Mutiso and Wanyama (2020), who noted that technical expertise reduces cost overruns and improves quality. Respondents highlighted that technical expertise ensures adherence to engineering standards, while lack of technical capacity, particularly among small contractors, often leads to project failures.

Organizational capacity had the highest impact on performance, with a coefficient of 0.807 ($p = 0.001$). This suggests that well-structured management systems, efficient

resource allocation, and effective leadership contribute significantly to project success. Kimani (2019) similarly found that project governance and organizational culture enhance efficiency and quality. Respondents emphasized that strong leadership and structured management improve project timelines and resource management, while poor organizational structures lead to mismanagement, conflicts, and inefficiencies.

Regulatory capacity also significantly affects performance ($\beta = 0.638$, $p = 0.000$), indicating that adherence to legal frameworks, environmental regulations, and safety standards enhances project success. These findings support Ochieng and Owuor (2022), who observed that compliance reduces project risks and legal disputes. Respondents noted that obtaining approvals and following environmental guidelines improve project credibility, while corruption and bureaucratic delays hinder progress.

Recommendations for improving project performance include increased funding, enhanced training programs, better project management practices, strengthened regulatory oversight, and the adoption of technology such as Building Information Modeling (BIM) and GIS. Strengthening financial, technical, organizational, and regulatory capacities may result in enhanced project results, timely completion, and higher-quality infrastructure. Subsequent investigations might analyze the influence of nascent technologies and sustainability practices on road project performance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter consolidates key findings from the study, offering a conclusion and practical recommendations based on identified gaps. It suggests focusing on enhancing financial resources, technical expertise, organizational effectiveness, and adherence to regulatory requirements to enhance performance in Nairobi city's road projects. Additionally, the chapter proposes areas for further research to deepen understanding and refine strategies in these domains.

5.2 Summary of The Study

5.2.1 Contractors' Technical Capacity and The Performance of Road Construction Projects

The research investigates the effect of builders' technical proficiency on the outcomes of selected road infrastructure projects. Technical capacity encompasses the availability of skilled personnel, the use of advanced construction technologies, and adherence to best engineering practices. The study assesses how these factors influence project timelines, quality of infrastructure, and overall project efficiency. It explores whether contractors with superior technical expertise can complete projects within stipulated timeframes while maintaining high construction standards.

5.2.2 Contractors' Financial Capacity and the Performance of Road Construction Projects

Financial capacity includes access to funding, financial management skills, and the ability to mobilize resources for project execution. The study analyzes whether financially stable contractors can mitigate project delays and cost overruns, ensuring

the smooth implementation of road construction works. It further examines the role of financial planning and liquidity in sustaining project momentum and delivering projects as per contractual obligations.

5.2.3 Organizational Capacity and the Performance of Road Construction Projects

Additionally, the study seeks to establish the relationship between organizational capacity. Organizational capacity includes aspects such as managerial competence, project coordination, and human resource capabilities. The research explores how well-structured organizations enhance project planning, communication, and problem-solving, leading to improved project outcomes. It examines whether firms with strong internal management systems are better equipped to handle complex construction challenges and deliver quality road infrastructure.

5.2.4 Regulatory Compliance Capacity and the Performance of Road Construction Projects

Regulatory compliance involves adherence to government policies, environmental regulations, and safety standards. The study assesses how contractors' compliance with legal and industry requirements influences project success. It investigates whether firms that strictly follow regulatory guidelines experience fewer legal disputes, project suspensions, or financial penalties, ultimately contributing to the timely and efficient completion of road projects.

5.3 Conclusion of the Study

The study concluded that contractors possessing strong technical capacity characterized by highly skilled personnel, modern equipment, and extensive experience demonstrate superior performance in road construction projects. Such contractors are more likely to

deliver projects within the stipulated time, cost, and quality parameters. Conversely, limited technical capacity often results in delays, cost overruns, and substandard work, underscoring the need for continuous technical training, adherence to qualification standards, and capacity development programs within the construction sector.

Concerning financial capacity, the study established that contractors with stable financial resources and sound financial management practices achieve better project outcomes. Adequate financial capacity enables timely procurement of quality materials, recruitment of skilled labor, and effective mitigation of unforeseen risks. However, contractors with weak financial standing often face cash flow constraints leading to project delays and, in some cases, abandonment. To address this, the study recommends improved financial planning and diversification of funding sources, including partnerships and credit facilities, to enhance liquidity and financial resilience.

The study further found that organizational capacity significantly influences project performance. Contractors with clear leadership structures, effective communication systems, and strong project management frameworks demonstrate enhanced coordination, decision-making, and resource utilization. These attributes contribute to timely completion and high-quality project delivery. The study recommends that contractors strengthen their organizational systems through strategic planning, leadership development, and employee capacity building to sustain competitive advantage and operational efficiency.

Finally, regarding regulatory compliance capacity, the study revealed that adherence to engineering, environmental, safety, and contractual regulations plays a pivotal role in ensuring successful project outcomes. Contractors who uphold compliance standards tend to experience fewer disputes, penalties, and project disruptions, thus enhancing

credibility and performance. The study recommends that regulatory bodies enforce strict compliance while providing supportive frameworks and training to help contractors understand and implement industry regulations effectively.

5.4 Recommendations of the study

First, construction firms should also channel much investment in a technical capacity improvement program through continual training, acquisition of advanced construction technologies, and recruitment of highly skilled professionals. This gives competency in technical specialization, paving the way for improved project execution, timely completion, and quality assurance.

The second capacity development measure relates to optimizing financial capacity through effective planning, good cash flow management, and diversification of funding sources with avoidance of reliance on single funding sources. Access to credit facilities, combined with strategic financial management, will enable firms to run smooth operations, procure quality materials, and finally avert possible project delays caused by lack of funds.

Organizational capacity, and thus, construction firms should modify their internal management systems, streamline decision-making processes, and improve teamwork among the relevant stakeholders. Efficient project management, coupled with good communication, stands to improve the overall project coordination and execution.

Last would require capacity building in regulatory compliance, which could probably be achieved by ensuring strict adherence to the legal and policy requirements governing road construction projects. Contractors should appreciate regulatory frameworks, attain the necessary certifications, and put in place mechanisms for monitoring compliance to

avoid penalties and disruption of the project. Implementing the recommendations will ensure cost-effectiveness and ultimate performance.

5.5 Recommendations for Future Studies

Competitively comparing results between public and private sector contractors would generate more knowledge about variation in technical capacities and project outcomes.

Future research in this regard should seek to include the effect of various financing modes, PPPs and alternative sources of financing, on sustainability and prompt finalization of roadway constructions due to the importance of finance as an enabling capacity. Broad analysis of the influence of financial mismanagement or delay in funding on project execution would be beneficial as well.

On the managerial side, future works could be arrangements of studies in the areas of leadership styles, project management practices, and human resource competency and how they contribute to realization of efficiency in construction project performance. Such interests might focus on learning and retaining workforce, knowledge transfer within contracting firms; such concerns could be meaningful regarding long-term project success.

Additionally, since regulatory compliance plays a highly important role in ensuring that projects are completed in the required way with respect to standards, future studies could delve into the effects that any structural changes in policy, mechanisms for enforcement, as well as legal frameworks of policy place on contractor compliance and overall project performance. A comparative study on regulatory compliance in various counties or countries for similar infrastructural challenges can also lead to tangible lessons on how compliance and governance can be improved in the road construction industry. Future studies could, above and beyond, have a broader geographic scope

beyond Nairobi City County to examine how differences exist in contractor abilities and effectiveness of roadway developments in metropolitan and rural areas. Extended studies also aid in comprehending long-term impact of contractor capacity on project sustainability and maintenance of infrastructure.

REFERENCES

- Akali T & Sakaja Y (2018), Influence of Contractors' Financial Capacity on Performance of Road Construction in Kakamega County, *American Scientific Research Journal for Engineering, Technology, and Sciences*, 00 (1); 2313 – 4410
- Akali, T. (2018). Influence of Contractor's Capacity on Performance of Road Construction Projects in Kakamega County, Kenya (Unpublished master's thesis). University of Nairobi.
- Al-Momani H., (2020), Examining service quality within construction processes, *Technovation*, 20, 643.651
- Alzahrani J I & Emsley, M W (2018), The impact of contractors' attributes on construction Project success: *A post Construction evaluation*, *International Journal of Project Management* 31; 313 – 322
- Andriof, J., Waddock, S., Husted, B., & Rahman, S. S. (2017). *Unfolding stakeholder engagement. In Unfolding stakeholder thinking* (pp. 19-42). Routledge.?
- Ayangade, J.A, Wahab, A.B & Alake, O. (2019). An Investigation of the Performance of Due Process Mechanism in the Execution of Construction Projects in Nigeria. *Engineering Dimension*. 11(1):1-7.
- Barney, J. B. (2019). Firm resources and sustained competitive advantage. *Journal of Management*, 17*(1), 99-120.
- Boadu, E. F., Wang, C. C., & Sunindijo, R. Y. (2020). Characteristics of the construction industry in developing countries and its implications for health and safety: an exploratory study in Ghana. *International journal of environmental research and public health*, 17(11), 4110.

- Bredin & Söderlund (2021). Human resource management in project-based organizations: *the HR quadriad framework*, *Human Resource Management*. Vol. 45, No. 2, 249-265.
- Chandra (2020) The Degree Of Master Of Arts In Project Planning And Management At The University Of Nairobi. *Planning Analysis, Selection and Implementation and Review* (4th Ed). New Delhi: Tata McGraw Hill Publishing Company Ltd.
- Choge, J. K. & Muturi, W. M. (2017). Factors affecting adherence to cost estimates: A survey of construction projects of Kenya National Highways Authority. *International Journal of Social Sciences and Entrepreneurship*, 1 (11), 689-705.
- Clemmer, J. (2018). *The Leader's Digest: Timeless Principles for Team and Organization Success*, Published by TCG Press.
- Crawford, J. K. (2019). Project management maturity model. *Auerbach Publications*.
- Deep S, Simon L, Asim M, Rahimzadeh A & Al-Hamdani S (2018), *An Analytical Study of Critical Factors Affecting Contractor Efficiency in Construction Projects in Indian Scenario*, *Journal of Organization, Technology and Management in Construction* 10: 1794–1802
- Desai, M., (2018), *Critical Causes of Delay in Residential Construction Projects; a case study of Central Gujarat Region of India*
- Freeman, R. E., Phillips, R., & Sisodia, R. (2018). Tensions in Stakeholder Theory. *Business & Society*, 0007650318773750.
- Fukuda, R. (2018). *CEDAC: A tool for continuous systematic improvement*. Routledge.
- Gelderman, C. J., Semeijn, J., & Vluggen, R. (2017). Development of sustainability in public sector procurement. *Public Money & Management*, 37(6), 435-442.

- Godfrey, P. C., & Lewis, B. W. (2018). *Pragmatism and pluralism: A moral foundation for stakeholder theory in the 21st century.*
- Hassan, H. I., & Guyo, W. (2017). *Determinants of Completion of Government Funded Urban Construction Projects In Nairobi City County, Kenya.*
- Ibbs, C. W., Wong, C. M., & Kwak, Y. H. (2021). Project management and productivity improvement. **Engineering, Construction and Architectural Management, 8*(3), 203-211.*
- Kaklauskas, Amaratunga & Lill (2010), The life cycle process model for efficient constructions Managers: conceptual modeling at the level of personality and Micro, Meso and Macro-levels: *In proceeding of the construction, Building and Real Estate Research Conference of the Royal Institution of Chartered Surveyors.* Dauphine Universities; Paris 1-25
- Kenya National Bureau of Statistics (KNBS) (2019), *Census Survey 2019, KNBS Publication*
- Kerzner, H., & Kerzner, H. R. (2017). *Project management: a systems approach to planning, scheduling, and controlling.* John Wiley & Sons.
- Kothari, C. R. (2017). *Research Methodology: Methods and Techniques.* New Delhi.
- Leach, L. P., & Tucker, R. L. (2018). "Scheduling and Project Control: *Supporting the Critical Chain.*" *Project Management Journal, 49(2), 2-18.*
- Macharia, V.W. (2016), Factors influencing completion of road construction projects in Embakasi, Nairobi County Kenya. *Unpublished MBA Thesis, University of Nairobi*
- McKinsey Global Institute (2020), *Reinventing Construction, Publication of McKinsey Global Institute*

- Mok, K. Y., Shen, G. Q., & Yang, J. (2015), Stakeholder management studies in mega construction projects: *A review and future directions. International Journal of Project Management*, 33(2), 446-457.
- Mouratidis A & Kehagia F (2014), On the Track of Road Evolution, *Journal of Infrastructure Development* 6(1); 1 – 15
- Mugenda & Mugenda (2003) Research Methods, Quantitative & Qualitative Approaches. *Acts Press: Nairobi*.
- Mukulu (2013) Effects of Human Resource Development on the performance of Tourist class Hotels in Malindi District, Kenya. *Journal of Human Resource & Entrepreneurship Development*, Vol. 4 (2), PP 1-4.
- Muriuki R M & Moronge, M (2019), Determinants of Road Construction Project Completion in Nairobi County: *A case of Kenya Urban Roads Authority listed contractors, Strategic Journal of Business & Change Management*, 6 (4)
- Mwangi, J.M (2016), Factors Influencing Performance of Contractors in the Road Construction Sector: *Case of Selected Contractors in Kenya, Unpublished Master of Arts Project, University of Nairobi*.
- Ndambiri, M. O. S. E. S., Kiragu, D., & Riro, K. (2018). *Management Capability and Financial Performance of Small-Scale Road Work Construction Companies in Bomet County, Kenya*.
- Nguyen, T. S., Mohamed, S., & Panuwatwanich, K. (2018). Stakeholder Management in Complex Project: *Review of Contemporary Literature. Journal of Engineering, Project & Production Management*, 8(2).
- Njenga, B.K., (2014). Factors influencing effective and efficient delivery of road construction projects in Kenya: *A case of Nairobi County. Thesis, University of Nairobi*.

- Nmadu (2012) The Performance of Textile Companies in the North West Zone of Nigeria: the Role of Infrastructure as a Resource. *International Journal of Human Resource Studies*, 2(1), 89–100.
- Olawale, Y. A., & Sun, M. (2018). Construction delays: Understanding them thoroughly. *Journal of Construction Engineering and Management*, 141*(7), 04015012.
- Opuch, C (2016), Local Contractors Performance Management And Project Completion In Construction Industry. *A Case Study of Road Maintenance Contractors Under UNRA Lira Station, Unpublished MBA, Uganda Technology and Management University*
- Project Management Institute (2010) Project management body of knowledge (PMBOK), Pennsylvania: *The Project Management Institute Inc.*
- Puddephatt & March (2012). Factors Affecting The Performance Of Public-Private Partnerships In Healthcare Projects In Kenya: *A Case Study Of The Ministry Of Health, Nairobi. The Strategic journal of business and change management* 2(36).
- Rahman, S H A., Endut, I R., Faisol, N & Paydar S (2014), The Importance of Collaboration in Construction Industry from Contractors' Perspectives, *Procedia-Social and Behavioural Sciences*, 129; 414 – 421
- Sarker, B. R., Egbelu, P. J., Liao, T. W & Yu, J. (2012), Planning and design models for construction industry: *A critical survey. Automation in Construction*, 22,123-134
- Shehu, G. A., & Wang, W. (2020). Risk Management Practices In Construction Industry In Nigeria. *Vidyabharati International Interdisciplinary Research Journal*, 11(2), 47-57.

- Shehu, Z., Holt, G. D., Endut, I. R., & Akintoye, A. (2015). Analysis of characteristics affecting completion time for Malaysian construction projects. *Built Environment Project and Asset Management*, 5(1), 52-68.
- Simiyu B W (2018), Capacity of Local Contractors and Performance of Road Projects In Nairobi City County, Kenya, Unpublished MBA, Kenyatta University.
- Taofeeq, D. M., Adeleke, A. Q., & Hassan, A. K. (2019). Factors Affecting Contractors risk attitude from Malaysia construction industry perspective. *Social Science and Humanities Journal*, 3(6), 1281-1298.
- Thomas, H. & Ellis, R.JR. (2017). What is a Contract? Interpreting Construction Contracts. *Projects Completion Reports* 4(1)
- Umeokafor, N., Umeadi, B. & Jones, K. (2019). Compliance with occupational safety and health regulations: *A review of Nigeria's construction industry*.
- Winfred, A. (2021). Introducing a Subject Matter Expert–Based Utility Analysis Approach to Assessing the Utility of Organizational Interventions Such as Crew Resource Management Training, *The International Journal of Aviation Psychology*, Volume 21, Issue 2, 201.
- Wolf, S. (2018). Causes of Delay in Project Construction in Developing Countries. *International journal of commerce and management studies*, 2 (1), 24-29
- World Bank. (2021). *World Bank group Infrastructure strategy update- issues and concept note* (CODE 2011-0030/1, June 15, 2011).
- Yaweli, L., Shouyu, C & Xiangtian, N (2021), *Fuzzy pattern recognition approach to construction contractor selection*, *Fuzzy Optimization and Decision Making* 4, 103 –118.
- Youngman (2019). Delays in construction projects: case of Jordan. *International Journal of Project Management* 26(6): pp. 665-674.

Kolapo, F. T., Mokuolu, J. O., Dada, S. O., & Adejayan, A. O. (2021). Strategic marketing innovation and bank performance in Nigeria. *Innovative Marketing, 17*(1), 120.

APPENDICES

APPENDIX A: Introduction Letter.

Stella Wamaitha Wahuga

D53/CTY/PT/38074/2017

Kenyatta University,

P.O. Box 43844 –100100,

NAIROBI.

Dear Respondent,

RE : INTRODUCTION 1LETTER

I am postgraduate student at Kenyatta University undertaking a study on “**Contractor’s Capacity and Performance of Road Construction Projects in Kenya: A Case of Selected Contractors in Nairobi County**”. This is in partial fulfillment for the award of MBA at the University.

I sincerely invite you to take part in this study by supplying the required details as specified in the questionnaire. Rest assured that all the information you provide will be kept strictly confidential.

Thank you,

Stella Wamaitha Wahuga

APPENDIX B: Questionnaire

Dear Respondent,

The following questionnaire seeks to collect information on effects of Contractor's capacity and performance of road construction projects.

INSTRUCTIONS

1. Please avoid affixing your identity to the survey.

BACKGROUND1 INFORMATION

Please mark the appropriate options in the provided section of this questionnaire to accurately reflect your roles and capacities as contractors involved in road construction

1. Kindly tick where suitably to signify your occupation

- | | |
|------------------------|--------------------------|
| i. Building contractor | <input type="checkbox"/> |
| iii. Road Authority | <input type="checkbox"/> |
| iv. Engineer | <input type="checkbox"/> |
| v. Technical Auditor | <input type="checkbox"/> |

2. Which is the highest education level that you have attained?

- | | |
|--------------|--------------------------|
| i. PHD | <input type="checkbox"/> |
| ii. Masters | <input type="checkbox"/> |
| iii. Degree | <input type="checkbox"/> |
| iv. Diploma | <input type="checkbox"/> |
| v. Any other | <input type="checkbox"/> |

3. How many years have you worked in the construction industry?

- 1-6 years
- 7-11 years
- 12-16 years
- 17-21 years
- Over 22 years

4. Kindly choose the relevant category that most accurately reflects the size of your contracting firm, based on the total number of permanent employees hired by the contractor. And those who are not contractors kindly omit this question

- Less than nine
- Between 10-20
- Between 21-30
- Between 31-40
- Over 41

PART ONE: TECHNICAL CAPACITY

Kindly evaluate how this company executes and represents the following activities and aspects using the provided rating scale:

Activity /Frequency	1	2	3	4	5
a) What is the effect of modern technological applications on output and effectiveness within professional environments?					
b) How does managerial competence influence a company's overall performance and success?					
c) How does making quality work plans contribute to project success and team efficiency?					
d) What strategies can be implemented to effectively avoid accidents in the workplace?					
e) Application of new methods of road construction					

f) How can organizations effectively manage change during ongoing work processes to minimize disruptions and ensure smooth transitions?					
---	--	--	--	--	--

1. In your view, how does Technical Capacity influence the performance of road construction

.....

PART TWO: FINANCIAL CAPACITY

Kindly evaluate how this company executes and represents the following activities and aspects using the provided rating scale.

Activity /Rating improve	1	2	3	4	5
a) How does the lack of collateral impact one's ability to secure loans?					
b) How does a shortage of operational cash affect a company's ability to sustain its operations?					

c) How does late payment by the government affect the financial stability of businesses relying on timely payments?					
d) How does late payment of salaries impact employee morale and financial stability?					
e) How does late payment to suppliers impact a company's relationships and operational efficiency?					
f) How does non-payment of subcontractors affect project timelines and overall project costs?					
g) How does the denial of bank overdrafts impact a business's ability to manage its short-term cash flow needs?					

From your perspective, what is the impact of Fiscal Competence on the execution of roadway development initiatives?

.....
.....
.....

PART THREE: ORGANIZATIONAL CAPACITY

Kindly evaluate how this company executes and represents the following activities and aspects using the provided rating scale.

Activity /Frequency	1	2	3	4	5
There is effective monitoring of the work done in road construction projects.					
Tasks are allocated efficiently among team members.					
The organization effectively controls the costs of operations.					
The work of various departments is well-coordinated.					
Supervision of work is conducted effectively.					
Planning for work is done in a structured and timely manner.					

In your view, how does organizational capacity influence the performance of road construction

.....

PART FOUR: CAPACITY TO COMPLY TO REGULATIONS

Kindly evaluate how this company executes and represents the following activities and aspects using the provided rating scale.

1=Never 2= Rarely 3= Neutral 4= Often 5= Always.

Activity /Frequency	1	2	3	4	5
a) Extent of Penalties by the NCA:					
b) Frequency of Complaints Received from NEMA (National Environment Management Authority):					
c) Incidence of Court Cases Faced Due to Regulatory Non-Compliance:					
d) Adherence to Industry Standards in Construction Projects:					

In your view, what is the impact of regulatory adherence capabilities on the effectiveness of road building initiatives?

.....

.....

.....

PART FIVE: PERFORMANCE OF ROAD CONSTRUCTION PROJECT

Kindly evaluate how this company executes and represents the following activities and aspects using the provided rating scale.

1=Never 2= Rarely 3= Neutral 4= Often 5= Always.

Activity / Frequency	1	2	3	4	5
a) The road construction projects are completed within the set budget.					
b) There is minimal rework required on completed road construction projects.					
c) The road construction projects are completed within the designated time.					

Explain how the overall performance of road construction projects can be consistently improved, taking into consideration various factors

.....

APPENDIX C: Road Projects

1. Waiyaki Way-Redhill Link Road (5.8km)
2. Upgrade of Mombasa Road.
3. Upper Hill Roads Phase II (6.5km)
4. Ngong Road-Kibera-Kung'u Karumba-Langata Road (4.2km)
5. Ngong Road (Dagoretti Corner-Karen Roundabout – 9.8km)

APPENDIX D: Research Authorization Letter



**KENYATTA UNIVERSITY
GRADUATE SCHOOL**

E-mail: dean-graduate@ku.ac.ke

Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: D53/PT/CTY/38074/2017

DATE: 8th October, 2024

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

**RE: RESEARCH AUTHORIZATION FOR STELLA WAMAITHA WAHUGA –
REG. NO. D53/PT/CTY/38074/2017**

I write to introduce **Stella Wamaitha Wahuga** who is a Postgraduate Student of this University. The student is registered for M.B.A degree programme in the **Department of Business Administration**.

Stella intends to conduct research for a M.B.A Project Proposal entitled, **“Contractors Capacity and Performance of Road Construction projections in Nairobi City County, Kenya”**

Any assistance given will be highly appreciated.

Yours faithfully,


PROF. ELIUD NJAGI
EXECUTIVE DEAN, GRADUATE SCHOOL

AM/k

Transforming Higher Education... Enhancing Lives
Kenyatta University is ISO 9001:2015 Certified



Page 1 of 1

APPENDIX E: Research Approval Letter



**KENYATTA UNIVERSITY
GRADUATE SCHOOL**

E-mail: dean-graduate@ku.ac.ke

Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 4150

Internal Memo

FROM: Executive Dean, Graduate School

DATE: 8th October, 2024

TO: Stella Wamaitha wahuga
C/o Business Administration Dept.

REF: D53/PT/CTY/38074/2017

SUBJECT: APPROVAL OF RESEARCH PROJECT PROPOSAL

This is to inform you that Graduate School Board at its meeting of 19th September, 2024 approved your Research Project Proposal for the M.B.A Degree Entitled, “Contractors Capacity and Performance of Road Construction projections in Nairobi City County, Kenya”

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking and progress report Forms per semester. The Forms are available at the University's Website under Graduate School webpage downloads.

Also, please ensure that you publish article(s) from your project before submitting it to Graduate School for examination as per the Commission for University Education and Kenyatta University guidelines.

Thank you.

ANNBELL MWANIKI
FOR: EXECUTIVE DEAN, GRADUATE SCHOOL

c.c. Chairman, Business Administration.

Supervisors:

1. Dr. Lucy Ngugi
C/o Department of Management Science
Kenyatta University

AM/k

Transforming Higher Education... Enhancing Lives
Kenyatta University is ISO 9001:2015 Certified



Page 1 of 1

APPENDIX F: Research Permit NACOSTI



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Date of Issue: 13/November/2024

RESEARCH LICENSE



This is to Certify that Miss. STELLA WAHUGA WAMAITHA of Kenyatta University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: CONTRACTORS CAPACITY AND PERFORMANCE OF ROAD CONSTRUCTION PROJECTS IN NAIROBI CITY COUNTY, KENYA for the period ending : 13/November/2025.

License No: NACOSTI/P/24/42078

Applicant Identification Number: 636398

Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Verification QR Code



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

See overleaf for conditions

The National Commission for Science, Technology and Innovation, hereafter referred to as the Commission, was established under the Science, Technology and Innovation Act 2013 (Revised 2014) herein after referred to as the Act. The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

CONDITIONS OF THE RESEARCH LICENSE

1. The License is granted subject to provisions of the Constitution of Kenya, the Science, Technology and Innovation Act, and other relevant laws, policies and regulations. Accordingly, the licensee shall adhere to such procedures, standards, code of ethics and guidelines as may be prescribed by regulations made under the Act, or prescribed by provisions of International treaties of which Kenya is a signatory to
2. The research and its related activities as well as outcomes shall be beneficial to the country and shall not in any way;
 - i. Endanger national security
 - ii. Adversely affect the lives of Kenyans
 - iii. Be in contravention of Kenya's international obligations including Biological Weapons Convention (BWC), Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), Chemical, Biological, Radiological and Nuclear (CBRN).
 - iv. Result in exploitation of intellectual property rights of communities in Kenya
 - v. Adversely affect the environment
 - vi. Adversely affect the rights of communities
 - vii. Endanger public safety and national cohesion
 - viii. Plagiarize someone else's work
3. The License is valid for the proposed research, location and specified period.
4. The license any rights thereunder are non-transferable
5. The Commission reserves the right to cancel the research at any time during the research period if in the opinion of the Commission the research is not implemented in conformity with the provisions of the Act or any other written law.
6. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research.
7. Excavation, filming, movement, and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
8. The License does not give authority to transfer research materials.
9. The Commission may monitor and evaluate the licensed research project for the purpose of assessing and evaluating compliance with the conditions of the License.
10. The Licensee shall submit one hard copy, and upload a soft copy of their final report (thesis) onto a platform designated by the Commission within one year of completion of the research.
11. The Commission reserves the right to modify the conditions of the License including cancellation without prior notice.
12. Research, findings and information regarding research systems shall be stored or disseminated, utilized or applied in such a manner as may be prescribed by the Commission from time to time.
13. The Licensee shall disclose to the Commission, the relevant Institutional Scientific and Ethical Review Committee, and the relevant national agencies any inventions and discoveries that are of National strategic importance.
14. The Commission shall have powers to acquire from any person the right in, or to, any scientific innovation, invention or patent of strategic importance to the country.
15. Relevant Institutional Scientific and Ethical Review Committee shall monitor and evaluate the research periodically, and make a report of its findings to the Commission for necessary action.

National Commission for Science, Technology and
Innovation(NACOSTI),
Off Waiyaki Way, Upper Kabete,
P. O. Box 30623 - 00100 Nairobi, KENYA
Telephone: 020 4007000, 0713788787, 0735404245
E-mail: dg@nacosti.go.ke
Website: www.nacosti.go.ke