MANAGEMENT STRATEGIES AND PERFORMANCE OF ROAD CONSTRUCTION PROJECTS IN KIAMBU COUNTY KENYA

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A Research Project Submitted in Partial Fulfillment of the Requirements for the Award of the Master's Degree in Monitoring and Evaluation, School of Business at Africa Nazarene University.

June, 2024

DECLARATION

I, the undersigned, declare that this research proposal is my original work and that it has not been presented in any other university or institution for academic credit.

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DEDICATION

This research project was dedicated to my spouse, John Njuguna.

ACKNOWLEDGEMENT

I would want to thank all of the people who helped me complete this research proposal. Without their professional, financial, and spiritual assistance, it would not have been possible. I am grateful to Africa Nazarene University for granting me the opportunity to pursue my studies, through the Chairperson of the school of Business, for the opportunity to pursue Master's Degree in Monitoring and Evaluation. I express my gratitude to Dr. Stella Karimi and Dr. Wanjiru Nderitu, my supervisors, for their understanding, timely feedback, steadfast support, encouragement, and unflinching dedication in providing guidance and support during the preparation of this project. I shall always think of you two as my academic mentors and as a gemstone in my life. I am grateful that you have motivated me to improve as a scholar. I also thank the Africa Nazarene University personnel for their guidance and insightful comments on the entire learning process. I am particularly grateful to my fellow Master's students for their collaborative advice, inspiration, and moral support during my studies. Throughout this journey, my beloved family, you have been an amazing source of inspiration for me. Lastly, I want to express my gratitude to the Lord God for watching over and guarding me during this study

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TABLE OF CONTENTS

DECLARATION ..... **ii**

DEDICATION ..... **iii**

ACKNOWLEDGEMENT ..... **iv**

LIST OF TABLES ..... **x**

LIST OF FIGURES ..... **xi**

ABSTRACT ..... **xii**

LIST OF ABBREVIATIONS ..... **xiii**

DEFINITION OF TERMS ..... **xiv**

CHAPTER ONE **1**

INTRODUCTION AND BACKGROUND OF THE STUDY **1**

1.1 Introduction` 1

1.2 Background to the Study 1

1.2.1 Performance of road construction projects 3

1.2.2 Management Strategies 4

1.3 Statement of the Problem 10

1.4 Purpose of the study 11

1.5. Objectives of the Study 12

1.5.1 General Objective 12

1.5.2 Specific Objectives 12

1.6. Research Hypothesis 12

1.7 Significance of the Research 13

1.8 Scope of the study 13

1.9 Delimitation to the study 13

1.10 Limitations to the Study 14

1.11 Theoretical Framework 14

1.11.1 Project Management Competency Theory 14

1.12.2 Systems Theory 17

1.13 Conceptual Framework 19

1.13 Conceptual Framework 20

CHAPTER TWO 21

LITERATURE REVIEW 21

2.1 Introduction 21

2.2 Empirical Review 21

2.2.1 Performance Road Construction Projects in Kiambu County Kenya 21

2.2.2 Technological exposure and Performance Road Construction Projects in Kiambu County Kenya 23

2.2.3 Team competency and Performance Road Construction Projects in Kiambu County Kenya 24

2.2.4 Leadership skills and Performance Road Construction Projects in Kiambu County Kenya 26

2.3 Literature Review Summary and Research Gaps 27

Table 2.1: Summary of Past Studies 28

CHAPTER THREE 30

RESEARCH DESIGN AND METHODOLOGY 30

3.1 Introduction 30

3.2 Design of the Research 30

3.3 Target Population 30

3.5 Study Sample 31

3.5.1 Sampling Procedure 32

3.6 Data Collection 32

3.6.1 Data Collection Instruments 32

3.6.2 Piloting of Research Instruments 33

3.6.3 Instruments of Reliability 33

Table 3.3 Results of reliability test 34

3.6.4 Instruments of Validity 34

Table 3.4 Results for Construct Validity Test 35

3.6.5 Data Collection Procedures 35

3.7 Data Processing and Analysis 36

3.8 Legal and Ethical Considerations 36

CHAPTER FOUR..... 38

DATA PRESENTATION, INTERPRETATION AND DISCUSSION 38

4.1 Introduction 38

4.2 Questionnaires Return-Rate 38

4.3 Demographic Characteristics of the Respondents 39

4.2.1 Gender of the Respondents 40

4.2.2 Age category respondents 40

4.2.3 Marital status of the respondents 41

4.2.4 Education of the Respondents 41

4.2.5 Duration of working in the company. 42

4.2.6 Responses on their designation 42

4.4 Findings on Leadership styles and Performance of road construction projects. 43

4.4.1 Descriptive Data Leadership styles and Performance of road construction projects in Kiambu County, Kenya 43

4.4.2 Inferential Statistics for Leadership styles and Performance of road construction projects in Kiambu County, Kenya 46

4.4.3 Model summary of Leadership styles and Performance of road construction projects in Kiambu County, Kenya 47

4.4.3 Discussion on Leadership styles and Performance of road construction projects ... 49

4.5 Findings on Team competency and Performance of road construction projects. 49

4.5.1 Descriptive Data Team competency and Performance of road construction projects in Kiambu County, Kenya 49

4.5.2 Inferential Statistics for Team competency and Performance of road construction projects in Kiambu County, Kenya 53

4.5.3 Model summary of Team competency and Performance of road construction projects in Kiambu County, Kenya 53

4.5.4 Qualitative Data on Team competency and performance of road construction projects 55

4.5.5 Discussion on Team competency and Performance of road construction projects . 55

4.6.1 Findings on Technological exposure and Performance of road construction projects. 56

4.6.2 Descriptive Data Technological exposure and Performance of road construction projects in Kiambu County, Kenya 56
4.6.3 Inferential Statistics for Technological exposure and Performance of road construction projects in Kiambu County, Kenya. 59
4.6.4 Model summary of Technological exposure and Performance of road construction projects in Kiambu County, Kenya 60
4.6.5 Qualitative Data on Technological exposure and performance of Community health workers programme 62
4.6.6 Discussion on Technological exposure and Performance of road construction projects 62
4.7.1 Findings on Performance of road construction projects. 63
4.7.2 Descriptive Data Performance of road construction projects in Kiambu County, Kenya 63
4.8 Testing for the Study Hypotheses 67
CHAPTER FIVE 69
SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS 69
5.1. Introduction 69
5.2 Summary of Findings 69
5.2.1 leadership styles on performance of road construction projects in Kiambu County, Kenya 69
5.2.2 Team competency influence performance of road construction projects in Kiambu County, Kenya 69
5.2.3 Technological exposure influence performance of road construction projects in Kiambu County, Kenya 70
5.4 Recommendations from the Findings 71
5.4.1 Recommendation for Practice 71
5.4.2 Recommendation for Policy 71
5.5 Suggestions for Further Study 71
REFERENCE 72
APPENDIX I: QUESTIONNAIRE 81
APPENDIX II: INTERVIEW GUIDE 86

APPENDIX III: NACOSTI Permit 87

APPENDIX 1V: AUTHORIZATION LETTER 88

APPENDIX V: MAP OF THE STUDY AREA 89

LIST OF TABLES

Table 3.1: Target Population 31

Table 3.2: The Distribution of the Sample Size 32

Table-4.1: Return Rate for the Questionnaire 38

Table 4.2 Personal and Demographic Data of the Respondents 39

Table 4.3 Leadership styles and Performance of road construction projects in Kiambu County, Kenya 43

Table 4.4 Correlation between Leadership styles and Performance of road construction projects in Kiambu County, Kenya. 46

Table 4.5: Regression Model Summary Table on Performance of road construction projects in Kiambu County, Kenya 47

Table 4.6 ANOVA Findings 47

Table 4.7: Coefficient Findings 48

Table 4.8 Team competency and Performance of road construction projects in Kiambu County, Kenya 50

Table 4.9 Correlation between Team competency and Performance of road construction projects in Kiambu County, Kenya. 53

Table 4.10 Regression Model Summary Table on Team competency and Performance of road construction projects in Kiambu County, Kenya 54

Table 4.11 Coefficients Findings 54

Table 4.12 Technological exposure and Performance of road construction projects in Kiambu County, Kenya 56

Table 4.13 Correlation between Technological exposure and Performance of road construction projects in Kiambu County, Kenya. 60

Table 4.14 Regression Model Summary Table on Technological exposure and Performance of road construction projects in Kiambu County, Kenya 60

Table 4.15 ANOVA Findings 61

Table 4.16 Coefficients Findings 62

Table 4.17 Performance of road construction projects in Kiambu County, Kenya 63

LIST OF FIGURES

Table 3.1: Target Population 31
Table 3.2: The Distribution of the Sample Size 32

ABSTRACT

Road building projects are known to be challenging and costly on a global scale. A nation's ability to prioritize road development is a key factor in determining its potential for economic growth and sustainability of the projects undertaken even after the funding entity has left. The following objectives will guide the study to establish the influence of leadership styles on performance of road construction projects in Kiambu County, Kenya; to examine how team competency influences performance of road construction projects in Kiambu County, Kenya and to assess how technological exposure influence performance of road construction projects in Kiambu County, Kenya. The following hypotheses will be tested: **H_O:** There is no relationship between leadership styles on performance of road construction projects in Kiambu County, Kenya; **H_O:** There is no relationship between team competency influence performance of road construction projects in Kiambu County, Kenya; **H_O:** There is no relationship between technological exposure influence performance of road construction projects in Kiambu County, Kenya. The research methodology is research descriptive survey design. The study will adapt project management competency theory and systems theory. This study will use descriptive survey research and correlation design. The target population of 700 people from road construction projects. The sample size is determined by krchejie and Morgan table 1970 which is 248 and simple random sampling technique will be used in the study. Data collection tool will be a questionnaire and an interview guide for information triangulation. Pilot testing, validity, and reliability will be conducted to test the instruments by use of 10% of the sample size. Validity will be ensured by use of face, content, and construct validity, while reliability used Cronbach Alpha coefficient subject to threshold of 0.7 alpha coefficient. Pearson correlation will be applied in running the linear regression and comparing of variables. Results will be presented in tables, means, and standard deviations. The recommendations will be made according to the findings of the study.

LIST OF ABBREVIATIONS

APAC: Asia Pacific Area

KeNHA: Kenya National Highway Authority

M&E: Monitoring and Evaluation

MRP: Material Requirement Planning

NACOSTI: National Commission for Science, Technology and Innovation

PMBOK: Project Management Body of Knowledge

PMI: Project Management Institute

SPSS: Statistical Packages for Social Sciences

DEFINITION OF TERMS

Management strategies refer to the comprehensive set of plans, methodologies, and practices employed by an organization to achieve its goals and objectives efficiently and effectively. These strategies encompass a wide range of activities and decisions, including resource allocation, decision-making processes, leadership styles, and operational tactics.

Leadership Skills is a person's ability or strengths demonstrated in management jobs that support and motivate a team and a group of individuals toward the accomplishment of a shared objective or set of goals are referred to as leadership skills. Among these skill sets are decision-making, negotiation, communication, and conflict resolution.

Team Competency is the capacity to work well in groups, both inside and outside of departments and outside of organizations, in order to produce the best possible results as a group. This is a list of particular behavior descriptors for this competency that are meant to help with performance evaluation and growth.

Technological exposure according to a literature study, is commonly defined as the amount of time a person spends using technology.

Performance of road construction projects is the comprehensive assessment of whether a project has fulfilled its goals, scope, cost, and schedule constraints.

CHAPTER ONE
INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 Introduction`

This section entails introduction, background to the study, problem statement, research objectives, research questions, and significance of the study, limitation and delimitation of the research in addition to conceptual framework. The research gap is also inclusive in this section.

1.2 Background to the Study

Worldwide, it is acknowledged that road construction projects are difficult and expensive. As Issa, Bdair, & Abu-Eisheh, (2022) points out, a country's capacity to grow economically really rests on its capacity to give road construction a high priority. In the modern world, road safety is one of the biggest concerns for public health (Llopis-Castelló, Findley, & García, 2020). Programs aimed at reducing and eventually eliminating traffic-related injuries and fatalities must include reliable safety research and effective road design. Designers employ diverse instruments and methodologies to accomplish the above specified objective (Sil, Maji, Nama, & Maurya, 2019). Examining the uniformity of the design and incorporating each team leader in the design process are two ways to maintain or enhance road safety. Any economy can benefit from a robust road network, but it cannot grow to its full potential if appropriate oversight is not provided. Road construction projects require project management to function optimally within a well-programmed and strategic policy framework.

In a global perspective, a study conducted in the United States of America revealed that project owners are currently reducing or abandoning capital construction projects because of a lack of funding, uncertainty surrounding costs, inadequate management, and worries about possible delays that could affect the project's viability bases. Innovative construction projects are a broad and imprecise notion (Hore et al. 2017). The majority of construction companies in Europe establish project objectives and make decisions regarding the project's procedures, strategies, goals, objectives, and timelines, keeping all relevant stakeholders informed.

Thorough resource allocation processes are crucial to the success of the project as a whole and to the subsequent performance, or lack thereof, of the project or related businesses. According to Picciotto (2020) reports that data from energy and road projects in the United Arab Emirates indicates that a change in focus from skills to delivery optimization and a more value-based strategy is necessary for effective deployment.

In accordance with Damoah and Kumi (2019), public building projects in Africa face obstacles and delays because of a variety of circumstances, and implementing road projects is particularly tough in developing nations, particularly in sub-Saharan regions. This is the majority of what is experienced in most countries, and especially Ghana. While the external environment is connected to the elements of leadership and external resources, project management is linked to administrative and management techniques as well as resource factors (Asiedu and Adaku, 2019). According to Akali and Sakaja (2018), most construction projects in Nigeria have delays, which can lead to disputes, arbitration, legal action, or even the project's total abandonment. Due to factors including inefficient time management, inadequate money, and a lack of advance implementation equipment, many construction projects fall short of their projected timelines, budgets, and quality as depicted by Nalianya (2018).

A study by Lavasseur (2016) claims that scope creep, poor budget control, and a lack of skilled workers plagued Tanzanian construction companies, driving up costs and delaying infrastructure investments. The objectives of the stakeholders, operating assurance, education and exploitation, and client satisfaction were identified as the five essential components by Kenyan project performance and success metrics (Takim, Roshana & Hamimah, Adnan, 2019). Prior studies have shown that one of the main issues facing the construction sector in developing nations is the low managerial competence of contractors. Therefore, one of the top priorities for enhancing the capacity of contractors in developing nations must be to enhance their managerial skills.

According to KeNHA (2019), in Kenya, a reserve price is assigned to activities that entail the fewest project chores or comprehensive information that could present considerable financial risks owing to multiple unforeseen events. This suggests that in order for road development to be successful, project planning may be crucial. However, taking into account the fundamentals of MRP, road managers ought to be able to restrict their schedule to only taking into account the materials, labor, money, and resources that are needed, as well as when they are needed (Njenga, 2019). Improved project implementation, according to Wamuyu (2020), depends on effective project management strategies that monitor advancements and possible hazards in addition to ensuring that the appropriate projects are carried out in accordance with corporate priorities. Strengthening a contractor's project management skills can significantly improve their overall ability to execute successful projects, as most of a contractor's work is handled as a project.

1.2.1 Performance of road construction projects

The completion of construction projects is influenced by numerous factors. A project's scope, quality, timeliness, and cost are all things that every investor needs to know. The reason for this is that obstacles that impede a project's effective completion might have extensive consequences, ultimately affecting the interests of the owner. Insufficient stakeholder management was linked to the poor performance of Tanzania's road development projects. According to Shimon (2017), risk management and stakeholder management in terms of analysis were the main variables influencing road construction projects in Dar es Salaam. According to Kinyondo and Villanger (2017), a project's level of performance is determined by how well it meets stakeholder needs and the standards set at the outset. This has to do with how well the contractors can finish building projects in terms of performance, safety, and the environment, all while staying within budget and on time. A study by Matembo (2016) on

construction asserts that projects are deemed successful if they are completed on time, within budget, and to the required standard of quality.

A major problem that affects the entire world is the delay in finishing construction facilities. This problem frequently results in higher expenses because of time extensions or accelerations, as well as decreased productivity, work interruptions, lost money from lawsuits between contractual parties, and project abandonment. Risk management strategies have not been used to evaluate the performance of road projects as stated by (Mwakajo & Kidombo, 2017). One of the contributing variables that has been identified as influencing the assessment of road project success in Kenya is the absence of risk management. In another study conducted by Kithinji (2017), states that road building projects are deemed successful if they are completed within the allotted budget, time, and quality standards. Similar to other companies in highly competitive markets, contractors are expected to possess the organizational capability required to stay in the business. According to Thomas & Abraham, (2020) management proficiency and high-quality job output are indicators of a contractor's technical ability.

In Kenya, Mwangi (2016) studied the elements that affect contractors' performance in road building projects and found that the most significant determinants are working capital and organizational structure, followed by skilled labor and client support. The research underscored the significance of working capital in guaranteeing seamless construction operations. Su (2016) verified this by observing that small contractors faced a constraining problem in managing limited resources. Road managers should be able to limit their timetable to only considering the resources materials, labor, money, and people that are required, as well as when they are required, while keeping in mind the core principles of construction sector (Zikmund, 2018)

1.2.2 Management Strategies

Effective organization strategies encompass a spectrum of factors crucial for the success of construction projects. This study investigates three key components under this variable:

technological exposure, team competency, and leadership skills. Technological advancements have revolutionized the construction industry, yet leaders worldwide exhibit reluctance in adopting proven technologies for improving productivity (Durdyev et al., 2021; Momade et al., 2020). Addressing this reluctance requires a shift towards technology-driven business models and operations, emphasizing the need for standardized procedures facilitated by construction technology systems (Zhao et al., 2022). Moreover, team competency plays a pivotal role in project success, with deficiencies in staff competency and management systems often leading to subpar performance (Hassan and Guyo, 2017; Osedo, 2017). Finally, effective leadership is indispensable for navigating the complex landscape of construction projects, with project leaders serving as catalysts for organizational development (Jiang, 2019; Berg and Karlsen, 2017). By exploring these components within the context of road construction projects, this study aims to provide insights into the organizational strategies essential for enhancing project performance and success.

1.2.2.1 Technological exposure

Leaders of construction companies throughout the world have been reluctant to implement technologies that have been shown to be useful tools for increasing productivity in the architectural, engineering and construction sector in other industries (Durdyev et al., 2021; Momade et al., 2020). In order to achieve customer value pr opositions and project objectives, construction managers must be able to clearly articulate business models and value creation logic as stated by Ahmad et al. (2020). As observed by (Manoharan et al. 2020), decision-makers in the construction industry often focus on what is profitable and urgent. One example of this is the resources needed for operations. In order to draw in younger workers to the construction sector, business models and operations need to be redesigned to be technology driven. This includes cutting back on onsite material waste, idle times, labor and supply costs, and construction schedules (Durdyev et al., 2019).

Conventional construction management procedures vary from company to company and are not consistent with industry best practices. Productivity can be increased by employing construction technology to standardize these procedures (Zhao et al., 2022). One advantage is enhanced communication between consultants and team members. Construction technology systems have played a significant role in enabling the team to price, create, review, and oversee the project from beginning to end by using the same files across all departments (Momade et al., 2021). The Vietnam building industry still makes very little use of construction technology, despite the fact that it has many benefits. Research has examined why construction technology is used at a higher rate in other countries' building industries than in their own (Liu and Zheng, 2019). However, there hasn't been much research done on the subject to date.

When extrapolating the results of related sectoral research phenomena across countries or jurisdictions, Olanrewaju et al. (2019) argue that the differences in the industrial, regulatory, socio-cultural, economic, and geopolitical dynamics at work in the business operating environment may have confounding effects. As posited by Qin, Shi, Lyu, & Mo (2020) on characteristics of computer software apps, as a technical solution to enhance construction project management approaches in residential and commercial projects and hit project targets in a more productive, safe, efficient, and sustainable way. This type of application is necessary on all construction sites in order to make work productive and efficient and to finish on schedule in accordance with the implementers' plans.

1.2.2.2 Team competency

The Infrastructure Investment Strategy (2019) states that in order to achieve the government's objectives, infrastructure and construction projects in Great Britain need to take project performance into account in different ways than the traditional cost-quality time triangle. The intention is not to imply that these out-of-date performance indicators are any less important; rather, it is intended to emphasize the need for initiatives to provide better, faster,

and healthier results. Building infrastructures that support justice, sustainability, and economic growth requires an understanding of the reasons why certain programs fail while others succeed (Crouzet & Eberly, 2019). In their research on legislative challenges to road infrastructure projects performance trends, complications, and uncertainties in Uganda, Muzaale and Auriacombe (2018) found that internally handling stakeholders, particularly with regard to communication about the project and extra-project interactions, has the combined positive anticipatory potential of project dedication from stakeholders. They go on to say that a lack of commitment from stakeholders in numerous road projects in Uganda has been caused by incomplete information resulting from breakdowns in stakeholder communication mechanisms amongst the teams.

According to Hassan and Guyo (2017), the main elements affecting the successful completion of subsidized road projects in Nairobi were project cost, procurement processes, adherence to design specifications, and contractors' experience. They maintained that as a result of these interrelated circumstances, contractors were unable to meet the standards for labor, material, equipment, and cost control that are expected of qualified contractors. The weak points of contractors working on road projects in Nairobi have been identified as staff competency and the management systems implemented by the contractors. According to Osedo (2017), worker competency affects how well County construction projects in Nairobi are carried out. According to Wairimu (2016), the availability of resources affects how quickly road projects are completed, and financial resources are one type of resource that is typically insufficient.

The staff's competency has an impact on how quickly road projects are completed. In this regard, it is noted that employees will be more capable of finishing the tasks that are delegated to them if they have received the appropriate training, experience, and knowledge of the industry. An additional factor in evaluating the technical proficiency of construction companies is the experience and expertise of the manager. Poor technical staff management led to poor

craftsmanship, which in turn produced poor roads, ineffective contractors, traffic accidents, and an unstable organizational structure. This could also be the case in Kiambu county thus the need for this study to establish the extent to which team competency influence the performance of road construction projects.

1.2.2.3 Leadership skills

The human qualities and leadership abilities of potential leaders have a greater influence on a project's efficacy than a fundamental comprehension of its constraints (Jiang, 2019). Project managers have long regarded technical know-how and competence as essential elements of project management, according to (Berg and Karlsen, 2017). The need to manage projects has made it necessary to develop better proposal administration techniques that take leadership and human capital into account as essential instruments (Sumner, 2016). The efficiency and effectiveness of work are greatly influenced by project leaders, which is why many management experts view project leaders as the primary catalyst and source of organizational development.

Other interrelated factors, such as the social and psychological development of employees at work, are also influenced by the leadership philosophies of administrators (Onyango, 2019). Due to internal conflicts and the objectives of political leaders, political factors have created delays in road development projects. In some cases, these factors have even gone to court; on December 11, 2015, governors of 29 Counties sued Kenya Rural Roads Authority (Kerra) in an attempt to wrest control of construction projects from the national government (Wairimu, 2016). This led to the suspension of construction projects, delaying their completion until January 12, 2016 (www.standardmedia.co.ke). While numerous studies have been conducted on the subject of road building project success, there has been little focus on project leadership (Mwangi, 2016). However, these examinations focused mostly on financial competence,

communication, information technology, procurement procedures, and skilled labor. (Ogutu & Muturi, 2017).

Human elements play a major part in the success of road construction projects in Kenya, as confirmed by (Kibuchi and Muchungu's 2019). According to Ngangu (2018), having well-defined and directed human resources is essential for a project team to effectively execute the project. The study focused mostly on human resource management, assignment team selection, team development, and team motivation as a result of human resources operations and obligations. Team training, giving feedback on project activities, inspiring others, and welfare management are all related to team building. According to Nyangilo (2016) on evaluating the impact of leadership and organizational structure on the success of road construction projects in Kenya found that a team that is well-managed and driven can do better work, which raises the project's success rate. The research recommends HR managers to ensure that the skills and abilities of the project team match the tasks and responsibilities assigned to them, particularly when continuous performance and training might help them develop. According to Kwatsima (2017), a number of projects in Kenya have been delayed owing to inefficient organizational structures and unsuitable leadership.

1.2.2.4 Profile of Road Construction Projects in Kiambu County

Kiambu County, located in Central Kenya, has seen significant developments in its infrastructure particularly in road construction. These projects aim to enhance connectivity, boost economic growth, and improve the quality of life for residents. The key projects include; Northern Corridors Integration Projects, which consist of Thika superhighway and Nairobi Northern Bypass. Meanwhile, the County Government Projects which consist of the Ruiru Eastern Bypass, Kiambu Road Expansion and Githunguri-Ruiru Road. Lastly, the National Government Projects which consist of the Eastern Bypass Expansion and Greater Eastern Bypass (Balate, 2022)

1.3 Statement of the Problem

The performance of road construction projects in Kiambu County, Kenya, has been a subject of increasing concern due to persistent issues such as delays, budgets overrus, and substandard work quality (Odhiambo & Paul, 2022). Despite significant investments and the strategic importance of road infrastracture in promoting economic growth and connectivity, many projects fail to meet their intended objectives (Njeri & Ngufi, 2021). The situation necessitates a thorough examination of the underlying management strategies employed in these projects. Moreover, the construction industry in Kiambu County is characterized by a fynamic environment involveing multiple stakeholders, including government agencies, contractors, consultants, and local community. According to Nicholas (2020), the Kenyan government and its development partners keep devoting significant sums of money to funding initiatives run by these governments' agencies. However, because of several failed project implementations, the desired benefits are only partially or never realized. Embracing of technology in the construction industry is a big dream since most contractors don't like the new technology as they would prefer the tradition methods.

On their study Hamledari et al. (2018) claim that design approaches that can provide facts and evident-driven treatments regardless of implicit intelligence can be maximized by using artificial intelligence (AI) technologies that examine and learn from huge volumes of statistical data. Managers should be knowledgeable about these tools to ensure successful technology integration because construction projects may benefit from the synergistic impacts of information, communication, and automation technologies when used together (Schönbeck et al., 2020). These impacts necessitate the creation of correct and precise building information that demonstrates how to integrate approaches from the beginning to the end of a project, save costs, and lessen hazards faced during project execution in order to use robot operations. Most of the country's road construction projects have encountered a shortage of skilled labour, which has left the client dissatisfied with the final result. The low outcomes can be linked to incompetent staff without the skills and knowledge to organize project activities, which can be caused by bad leadership or an inadequate team, (Lianying Zhang and Weijie, 2019). Kiambu County could be missing this vital components thus need for the current study.

Given the existing complexities, there is a pressing need to investigate how current management strategies impact the performance of road construction projects in Kiambu County. The need for understanding the efficacy of these strategies can provide insights into areas requiring improvements and inform the development of best practices tailored to the local context. By addressing these issues, the ultimate goal of the study is to propose actionable recommendations that can lead to more efficiently, timely, and cost-effective road construction projects, thereby fostering economic growth and improving the quality of life for residents.

1.4 Purpose of the study

The purpose of the study was to evaluate the existing management strategies employed in road construction projects, identify the critical factors that influence the performance of road construction projects such as resource allocation, project planning, and stakeholders

engagement. By focusing on these, the study can provide insights and practical recommendation that can help improve the performance of road construction projects in Kiambu County and potentially in other similar contexts.

1.5. Objectives of the Study

1.5.1 General Objective

The general objective of this study is to establish the influence of management strategies on performance of road construction projects in Kiambu County, Kenya

1.5.2 Specific Objectives

i. To establish the influence of leadership styles on performance of road construction projects in Kiambu County, Kenya

ii. To examine the influence of team competency and performance of road construction projects in Kiambu County, Kenya

iii. To assess the influence of technological exposure and performance of road construction projects in Kiambu County, Kenya

1.6. Research Hypothesis

The following hypotheses were tested;

H_{O1}: There is no significant relationship between technological exposure and performance of road construction projects in Kiambu County, Kenya

H_{O2}: There is no significant relationship between team competency and performance of road construction projects in Kiambu County, Kenya

H_{O3}: There is no significant relationship between leadership skills and performance of road construction projects in Kiambu County, Kenya

1.7 Significance of the Research

Results of this research informed the construction firms to appreciate the benefits of organizational strategies on performance of road construction projects. The study helped the policy makers understand the organizational tactics used in the road building sector, as the national government is a stakeholder in the industry. Building professionals was basically be able to better synchronize corporate initiatives and determine what improvements need to be performed. Thus, the research helped in formulating tactics that stop other companies from copying their procedures, providing the business with a competitive advantage.

In addition to filling a gap in the literature, this study examined M&E from the viewpoint of a third-world nation, as the majority of earlier research on the subject in the construction sector concentrated on developed countries. Given that other academics can turn to this work for reference, it expands the corpus of knowledge. By outlining further M&E-related domains in the public and commercial sectors that require further research, this study can also act as a basis for future studies.

1.8 Scope of the study

The study was be carried out in Kiambu Town, Kiambu County, Kenya and the main objective was to analyze the impact of management strategies on the performance of road construction projects in Kiambu County. Moreover, the study emphasized on the common management strategies used in road construction projects in Kiambu County. The target population involved in the road construction. Data was both primary and secondary that guided the researcher. Analysis of data was through quantitative and qualitative analysis.

1.9 Delimitation to the study

The scope of this study is constrained to Kiambu County. As stated in the above objectives, the research looked at three organizational strategy elements (technology exposure, team competency, and leadership abilities) that influence how well road building projects in Kiambu

County, Kenya perform. The target population of this study comprised of project managers, Engineers, project supervisors, Architects and Quantity surveyors in Kiambu County. The research was carried out in Kiambu County where many roads are impassable during the rainy seasons thus affecting economic activities.

1.10 Limitations to the Study

Due to the nature of the study area, the research was restricted to transportation services; however, this was minimized by utilizing the various modes of transportation available. Although the respondents were reluctant to provide the information, they were reassured that it was kept private and that study ethics was followed. Time constraints could also be a hindrance to the study because construction workers have hectic schedules. Making appointments with them to complete questionnaires and set up interviews wase difficult, but the researcher and had two assistants who made every effort to extend their schedules and rearrange when necessary.

Many staff juniors were involved in the exercise but had fear of being sacked by their bosses but this was solved by assuring them that the information was confidential and nobody should write their names in the questionnaire. It is only meant for academic purposes and no information was shared in any other place expect for school purposes.

1.11 Theoretical Framework

The pertinent theories for this research are covered in this section. In this chapter, the theories of project management competency and systems theory were examined.

1.11.1 Project Management Competency Theory

This concept, proposed by Mclelland and McBer in (1980), states that competence is the set of personal attributes that enable an individual to perform wonderfully in a certain activity or situation. A skill is a collection of abilities, knowledge, attitudes, and other relevant qualities that influence an individual's performance of a particular task, according to the Project

Management Skills Development Platform. Project performance and competency are related, and staff training and development can raise competency (PMI, 2011). The concept explains the value of program management expertise, the monitoring and assessment processes for development projects, and the ways in which team dynamics impact the effectiveness of infrastructure expenditures. In order to fulfill commitments, accomplish project objectives, and raise cost, time, and resolve all at once, Gladder (2010) asserts, based on a study, that technical project managers must be skilled in the application of knowledge, skills, tools, and procedures. The third benchmark, the PMBOK, placed more weight on demonstrated performance than the other two key criteria, the Project Management Institute (PMI) and the Australian National Competency Standards, which both place more emphasis on the knowledge side of the skill. Additionally, their analysis revealed that some project managers lacked the necessary skills to oversee road construction projects. The investigation also showed that certain project managers were not equipped with the right skills to supervise road building projects. Project managers should have access to a wide range of management tools and strategies, according to Garish and Huemann (2014), in order to increase the success of infrastructure investments. Empirical evidence suggests that proficient project managers can augment project outcomes through the astute application of diverse strategies for diverse projects (Edum-Fotwe, 2011).As a result, businesses adopt more systematic approaches to implementing infrastructure upgrades in order to guarantee that work is completed consistently and by employees who meet the necessary credentials.

Every team member's skills ought to be evaluated and recorded in an ongoing database of competency profiles as depicted by (Kometa (2013). In the context of contemporary road building, project managers' primary duties and obligations are flexible. Project managers in this field must use the abilities and information they have gained via education and experience to adjust to the shifting industry structure in order to uphold their own personal competency

requirements. The degree to which this training helps project managers to effectively adjust to evolving needs is crucial for future project managers' training (Francist & Ronald, 2010). This theory suggests that managing road infrastructure projects using conventional methods is ineffective. According to Ryssel (2013), rigid frameworks, complex task distribution techniques, and control procedures are examples of traditional management techniques that might lead to the failure of road building projects. A project manager must be able to oversee the physical and human resources needed for the project's implementation, integrate different project approaches, and limit project risk, according to Sodeland (2012). Additionally, they must be able to meet crucial project requirements in terms of scope, timing, cost, and quality. The project contract and planning committee, the procurement model employed, the selection criteria for the project leader, the tools allocated for project completion, and the strategic approach employed to finish road projects are all included in this theory.

Competence in any area of life requires a number of requirements, including literacy, the ability to use knowledge effectively to achieve goals, and readiness for action, according to Hilson and Murray (2012). The proposed model delineated the five fundamental components of competency. These include skills, information, attitudes, training, and character traits (Ruth and David, 2011). They also mentioned the fact that supervisors are more likely to be successful when their personal characteristics match the requirements of the role. They also stated that in order for a project to succeed, a project manager needs to be able to perform effectively. Simons (2014) demonstrated the critical need for qualified, talented, and competent highway project managers because of the unique nature of the business, the dynamic nature of regulations, and the demands of international competition. The following characteristics are listed by Triesch (2015) as behaviors: self-control, aggression, originality, direct consequence, practicality, dependability, and respecting the opinions of those in the team. This idea supports personnel management since it highlights the utilization of individuals' abilities and proficiencies to

accomplish a task as well as helping managers manage the projects well. In the current study this is the main theory anchoring the study.

1.12.2 Systems Theory

The systems approach is sometimes described as a systematic way of observing the surroundings, and it is employed to solve issues and take advantage of opportunities (Cristobal, 2017). The scientist Ludwig von Bertalanffy developed general system theory in the 1940s, first trying to establish a fresh method for studying life or living systems. In a broader sense, Von Bertalanffy thought that general system theory may be used to solve the world's problems, which are becoming more complicated.

According to some authors, the processes method involves first defining the problem in its broadest sense, then rephrasing it, conducting analysis and synthesis, adding input to improve the analysis, and lastly confirming the possible results of the different options. Some see everything in the world as interconnected, including its challenges and possibilities, while others view the world as a system in which everything is related to everything else**.**

When trying to make the connection between the concept of a system and project performance, it can be helpful to start by reviewing the definition of a system, which states that it is an organization or complex whole, an assembly or combination of objects or pieces that results in a complex or unitary whole (Kapsali, 2011). System theory was first introduced in connection to the expansion of an organization by Ludwing Von Bertalanffy, (1973). The author argues that a firm needs to interact with the outside environment in order to accomplish its strategic goals (Brown & Harvey, 2021).

A system, in the author's opinion, is more than the sum of its parts (subsystem), made up of several pieces that work together to create a whole entity with distinct boundaries. The system is designed in such a way that altering one of its primary functions will also affect how the other

sections operate in respect to those initial modifications. The system's ability to adapt to its surroundings and its existence in order to accomplish a shared goal is what leads to growth. System science research has identified a number of dynamical forces, system limitations, environmental factors, and values (goal, metrics, techniques, and tools) that can be identified and applied to systems across all domains and levels in order to attain optimal equitable conclusions. In their research, Chikere & Nwoka (2015) see an organization as a system since it consists of several connected and related pieces that have to function as a whole.

They also emphasize that in order to accomplish the company's strategic objectives, all of its subsystems must work together as the organization expands. According to Chow & Cao (2008), no organization can function in a vacuum, therefore, they must rely on their internal or external surroundings. According to this study, a construction project's successful completion will be viewed as an open system depending on a number of different elements. The fundamental areas of knowledge that influence the effective completion of building projects were listed by Mok, Shen, and Yang (2015). The author begins by noting that a project demonstrates the interconnectedness and integration of the following fundamental knowledge domains, human resources, communication, risk, procurement, quality, scope, cost, and time. Furthermore, if one of these is altered, it may impact the overall system's efficiency, necessitating efficient system coordination to guarantee project success.

Project managers need to be experts in systems and give each aspect of project management enough thought. The relationships between employees, the impact of organizational structure and function on the surrounding environment, and the influence of stakeholders on the company are all identified by system theory. When considering the project performance from a systems perspective, it could be referring to a system known as the project performance system, which would be made up of several more specialized subsystems (Floricel et al., 2014). The synergy of its constituent elements, which is based on how well each portion contributes to the system's

overall performance, determines the system's overall performance. In the end, a company's ability to successfully complete projects depends on how well its project management system performs within the parameters of its operating environment.

1.13 Conceptual Framework

Conceptual framework illustrates the connection linking the independent and dependent variables. In this regard, this research intends to determine the effects of organizational strategies on performance of road construction projects in Kiambu Sub County, Kenya. The independent variable in the study is organizational strategies which comprises technological exposure, team competency and leadership skill as shown in Figure 1.13 below. On the same note, the dependent variable of this research is performance of road construction projects.

1.13 Conceptual Framework

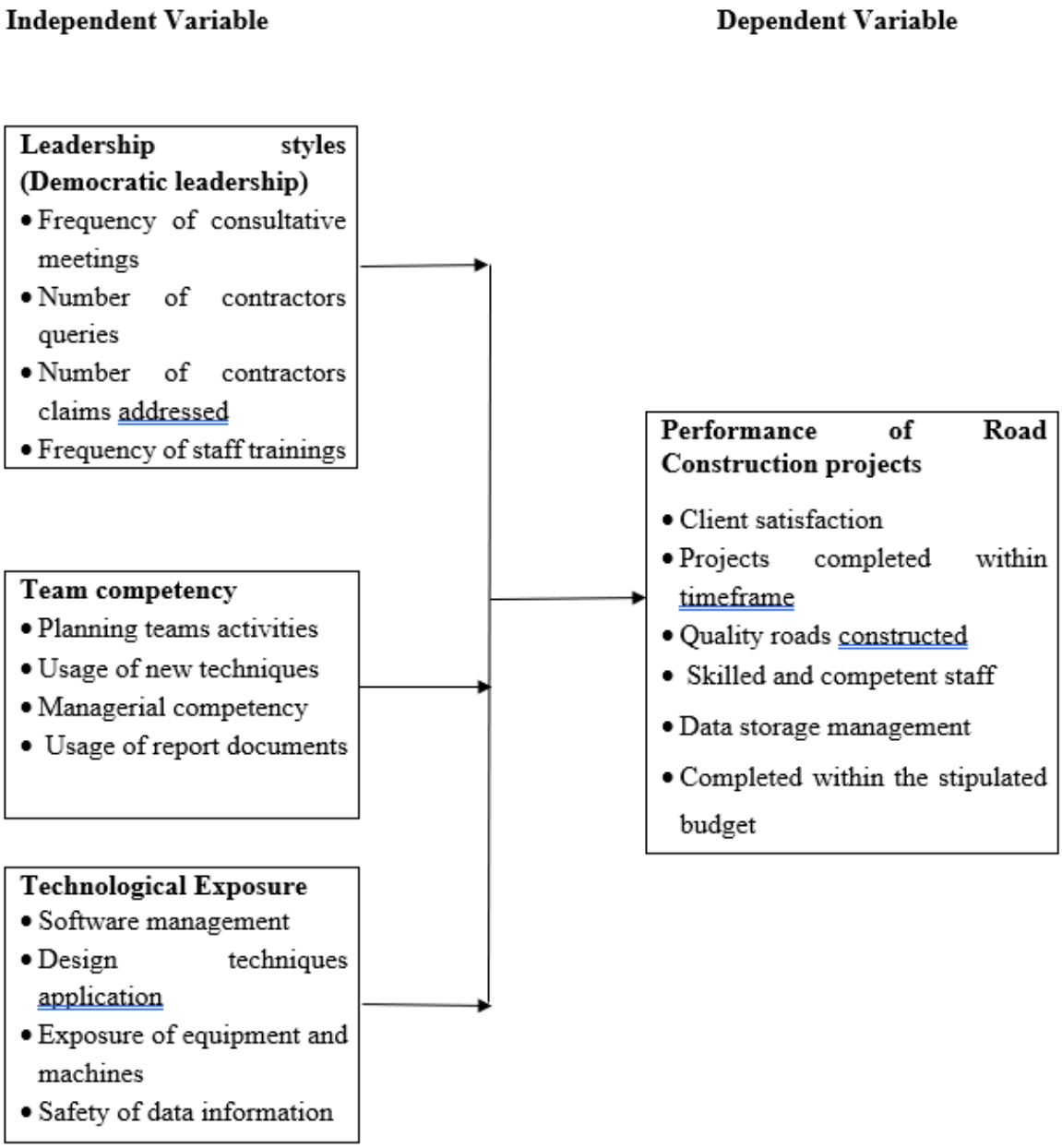


Figure 1.13 Conceptual framework

Source: Researcher (2024)

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This section entails literature review on how management tactics affect road construction project performance in Kenya's Kiambu County. Research gaps and empirical investigations are the topics covered in this chapter. The study factors guided this action.

2.2 Empirical Review

2.2.1 Performance Road Construction Projects in Kiambu County Kenya

A construction project's performance is determined by a number of elements, such as timing, budget, and expectations. It is the entirety of a project in terms of its effect, value to recipients, appropriateness of usage, efficacy, and maintainability as observed by (Akinosho, et al, & 2020). A critical component of carrying out the project is preventing the task from going over budget, not finishing it in time for approvals, construction, and occupancy, and not meeting the necessary specialized requirements for quality, usefulness, qualification for reason, security, and condition insurance. It has been difficult to handle the problems the construction industry is currently facing because it is one of the least digitalized industries in the world (Regona et al., 2022). As Vietnam's economy expands, particularly in the building sector, building departments should concentrate on deploying more efficient technologies in order to better serve their consumers (Mabad et al., 2021).

Moreover, one of the biggest issues facing road contractors in Malawi is politics, which irritates them about the country's contracting climate. Contractors frequently lament that politics and the ‘who you know’ mentality dominate the business climate in government projects (World Bank Report, 2020). When there is a change in government, ongoing projects are put on hold and new ones start without carrying over from the old ones. There should be new initiatives to match the issue in order for road contractors to withstand the current upheaval

in this economic climate. According to Fong and Choi (2020), it is commonly known that the Malawian government has been losing billions of kwacha in the construction industry as a result of subpar performance, overcharging the government, and outright theft which occurs when contractors change the initial contract price for illogical reasons or pocket the money for work not completed. Technology adoption is extremely low, even though it has the potential to increase productivity in the construction industry (Delgado et al., 2019).

For creative firms to remain competitive in engineering, procurement, and construction projects, speed management is a critical component. Werner (2021) determined the causes of schedule and cost overruns by analysing data from eight different nations. According to David (2020), there are two factors that primarily impact how well contractors work. Financial issues and a lack of managerial expertise or contractor understanding are the factors that have been highlighted. Contractors facing financial instability have difficulties or lack of credit availability, which has a long-term negative impact on their performance. Additionally, their poor managerial ability affects the performance of the contractor. According to Vullings (2019), the client's change orders, the delay in approving them, disagreements amongst the project's co-owners, the approval of sample materials after the deadline, neglecting the projects, and making late progress payments are identified as significant obstacles.

In his research, Kang (2020) identified a few client-related factors for road construction projects, including the length of time it takes to clear the project site of property rights claims, the client's or owners' financial difficulties, the lack of coordination with other infrastructure or public utility providers, and contract changes or recodifications that are deemed the client's responsibility hence affecting the performance of the project (Chan, 2021). The biggest issues affecting project length were determined to be shortage of materials, insufficient drawings, inept supervisors, lack of tools and equipment, absenteeism, poor communication, poorly

planned sites, delayed inspection, and rework. The five most important variables influencing time management in the West African construction sector were determined to be crucial.

According to Olomolaiye et al. (2018), the most important factors in Iran were also determined to be a lack of material, weather, physical site conditions, inadequate tools and equipment, design, drawing, and change orders, inspection delays, absenteeism, safety, improper work plans, repetitive work, fluctuating crew sizes, and labor turnover.

2.2.2 Technological exposure and Performance Road Construction Projects in Kiambu County Kenya

Despite prior research identifying adoption barriers and implementation advantages often quantifying the latter to guarantee that the technology is comprehensible to all significant stakeholders the adoption rate is still low (Al-Hammadi and Tian, 2020). The "say: do" ratio in the building sector is still low, insufficient investment in technology resources and shortcomings in the offered solutions. Due to external causes including new trade agreements with the European Union and the tendency of expanding supply chain relocation or diversification out of China, the construction sector has grown phenomenally (Khan et al., 2020). Vietnam's sub regional market was estimated to be worth more than USD 60 billion in 2021, and from 2022 to 2027, it is projected to grow at a rate of more than 8.71% annually, placing it third in the APAC region behind Indonesia and the Philippines (Bui et al., 2019).

Regretfully, according to Van Tam et al. (2021) there is still trouble in adopting and implementing construction technology. Vietnam’s Construction Industry has the slowest rate of adoption of new technologies in the APAC (Asia-Pacific) area, according to (Wuni and Shen, 2020). As recommended by Zaini, Zaini, Tamjehi, Razali & Gui, (2020), the goal is to broaden the body of knowledge and pinpoint the critical actions required to shift construction operations toward a model that is more machine dominated.

Adoption of construction technology tools has numerous advantages (Atkinson et al., 2021). Despite the fact that the majority of advantages are not directly tied to cost savings, an attempt was made to gauge how many hours were saved or spent utilizing construction technologies. Businesses have begun utilizing the newest technology available (van Wyk et al., 2021). Their problem is determining the value it adds to projects and the general business procedures. Productivity analysis and return on investment are therefore immeasurable prior to or during implementation (Osunsanmi et al., 2020). To assess how older, less technologically advanced processes were less economical than more recent ones, data must be collected over a long period of time and then analyzed in order to give the comprehensive report thus need for the current study to establish the influence of **t**echnological exposure on performance road construction projects in Kiambu County Kenya.

2.2.3 Team competency and Performance Road Construction Projects in Kiambu County Kenya

Over a long time, the construction industry has placed a high value on improvements in project performance brought about by increases in labor skills (Rehman & Ishak, 2022). Project performance is commonly recognized to be dependent on the laborers' capabilities during project execution, whose abilities and skills can impact the project's advancement to varying degrees. This primarily applies to construction-related projects (Farid, Kureshi, Babar & Mahmood, 2020). A multitude of studies indicate that groups and institutions possessing the necessary skills may effectively handle construction risk, potentially improving the efficiency of the project supply chain (Adeleke, Mohd Nawi, & Abd Karim, (2020). Enhancing team skills and competencies could benefit several nations if governmental regulations and guidelines promoted team building and development. In short, nation-specific elements pertaining to politics, economy, and culture impact how each country approaches construction risk management differently.

Tasks are often carried out at a construction site by using physical labor, and the project is overseen and directed by the project manager, assistant project manager, construction engineer, project architect, contractors, or subcontractors. According to Hossein et al. (2018), the construction business is labor-intensified as activities progresses. According to Karimi et al. (2017), a shortage of competent personnel with experience has a direct impact on the decrease in productivity of building projects. There was a strong correlation between the decline in project productivity and the difficulty in finding qualified workers. Projects with a shortage of competent labor typically experience increased labor and material expenses, delays in project completion, poor scheduling, and subpar work that falls short of schedule.

Innovative work behaviors make employees more capable of applying their imagination and resourcefulness to achieve project goals and team performance (Hughes et al., 2018). The ability of team members and project workers to suggest and carry out fast repairs for mechanical and functional problems is crucial to the project's performance since it helps to avoid delays and ensures the required quality results for the project's success. They can differ in complexity and management methods based on how simple or complex they are. Thus, project traits basically control the way in which the leading behaviors of the project manager interact with the employees to guarantee that they display creative behaviors (Day and Shea, 2020; Purwanto, et al., 2021). Team competency is key in every organization and if it is missing then the productivity is compromised. It is in this line that the current study seeks to investigate how team competency influences performance of road construction projects in Kiambu County, Kenya.

2.2.4 Leadership skills and Performance Road Construction Projects in Kiambu County Kenya

According to Plummer and DarConte, (2021) who state that the three factors of cost, time, and quality can be taken into consideration when evaluating the project's effectiveness and efficiency. Any project will be successful in the long run if all three of these requirements are met. Projects are usually distinct, connected by questions, complexity, and fragility. While the primary responsibility of a project manager is to give the leadership direct control over the team, their role is typically more varied and demanding than that of a functional manager as stated by (Fareed and Su, 2022). Leadership developments come in a variety of forms. The achievement of the objective that was established at the beginning of the project is the central focus of all dimensions (Dubrin, 2018; Fareed, Su, & Awan, (2021). The dynamics of leadership describe how a leader influences the team to finish a job within the allotted time since a variety of elements affect leadership.

The leadership style that will be employed should be determined by the project's actual stage, or how much progress can be made even if some parts move slowly as posited by (Sarwar group, 2020). Project managers will hereafter need to ensure that, irrespective of the type of project, their leadership encouragement stimulates employees' creativity and inventiveness (Martens et al., 2018; Karatepe et al., 2020). Moreover, previous studies have anticipated important moderating influence of projects with relation to different specifications and key traits in the connection between a team's creative actions and the accomplishment of a project (Khan et al. 2020).

Leadership developments come in a variety of forms. Reaching the initial aim established at the beginning of the project is the central focus of all dimensions (Emiliano de Souza, Favoretto & Carvalho, 2021). The dynamics of leadership reveal how a leader influences the team's ability to finish a project on schedule. Since a variety of elements affect leadership. According to Maqbool et al. (2017), the project's main contributors are the head's emotional stability, his capacity for critical analysis of situations, and his interpersonal skills. Three distinct zones should be taken into account when evaluating the project's success are project cost, targets, and meeting requirements therefore there is need to carry out this study in order to establish the extent to which leadership skills influence performance of road construction projects in Kiambu County Kenya.

2.3 Literature Review Summary and Research Gaps

Literature review has asserted that recognizable research has been done on the variables conceptualised in the study. While study has been done on the relevant topics, several significant dimensions have not yet been thoroughly covered. Therefore, the review has identified a lot of holes. The gaps include context, conceptual, empirical, and technique deficiencies, among others. Empirical gaps are established with the intention of presenting a broad range of variables under study.

The majority of previous studies focused on discrete dimensions, therefore there is a need to broaden the variables studied. Contextual gaps are also identified regarding the requirement to locally duplicate similar studies for increased relevance of the findings. Gaps in the studies' methodology highlight the need for more concrete project performance metrics, such as cost, time, and stakeholders' satisfaction, which are typically missing from earlier studies.

This study aims to take a descriptive research design in an integrated model to establish the influence of organizational strategies on performance road construction projects in Kiambu County, Kenya. In order to close these knowledge gaps. Table 2.1 helps to outline a summary

of studies relating organizational strategies on performance of road construction projects and the knowledge gaps identified.

Table 2.1: Summary of Past Studies

Variable	Author(s) Year	Title of the study	Findings	Knowledge Gap
Technological exposure	Shimon, (2023)	A review of the difficulties on road contractors encountered in the process of implementing projects subsidized by the Malawian government	The study found that contractors face several challenges including delaying payments of funds, political influence, theft, and vandalism as well as delayed removal of infrastructure by utility companies at the construction site	Gaps will be filled by conducting similar studies in Kenya and particularly Kiambu Town
	Van Tam, Nguyen Quoc Toan,et al (2021)	Machine Learning Research Trends in Construction Management: A Scientometric Examination	No comprehensive study to review the global research trends on this technological advancement in construction management domain.	The current study will focus on a comprehensive domain in reviewing other studies and bridge the gap.
Team competency	Yuli, Lalu Mulyadi. Wulandar , Sutanto, et al (2022)	"An examination of the variables influencing the quality of road improvement projects in the Bologna Regency, from contractor work performance	"Contextual, methodological and empirical gaps on the need to replicate the study on a construction environment."	Gaps will be filled by conducting the study in construction sites
	"Effects of stakeholder's engagement and communication management on construction projects success."	"The study established that Poor communication and management of stakeholder expectations resulted in negative impacts on project performance."	"Methodological gaps on the need to considerto consider other factors of M&E such as staff training, stakeholders' participation and planning**."**	The current study will focus on staff training, stakeholders participation and planning as factors in M&E
Leadership skills	Sajid, A.M & Kinslin, (2020)	Examining Managers' Competent Technical Skills in Business	The study determined the nine most important components that go into a	Gaps will be filled by conducting

		Management Decision-Making: An Analysis of Survey Data	manager's technical and competent abilities. In addition, the rate of compliance and non-compliance with the indicated criteria was investigated, yielding intriguing findings.	training the all staff on construction process in the current study.
	Abdul, G.,Aleena, S., (2022)	The success of transportation infrastructure projects is influenced by leadership competencies. This influence is moderated by the type of project and innovative work behavior.	This study takes into consideration useful conclusions that will help project manager's effectively complete transportation infrastructure projects by leveraging their leadership talents and encouraging creativity among their teams.	This study will put into considerations to all the staff involved to be trained.
Performance of road projects	Mohhamed H.,et al (2022).	Variables affecting the use of new technology in residential building projects in Vietnam	Insufficient expertise needed for technological advancement and inadequate industry competencies	This study will bridge the gap identified in other scholarly work.

CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This section covers the research approach that was used for gathering and analyzing data. The following subsections are in this section: research design, study population, sampling strategies, data collection methods, validity and reliability, data analysis and presentation, and research ethics.

3.2 Design of the Research

In order to set guidelines for the study arrangement methods and data compilations, the research design of the study is crucial. According to Bell (2022), a research design is a researcher's plan or approach for gathering information to address the study challenge. As such, descriptive survey design was used to aid in determining the kind of association, describing complex relationships of various variables that account for the end result and forecasting a finding from different predicting variables (Williams, 2017). The researcher adopted a case study which allowed for a deep dive into the specific context of Kiambu County, examining the unique factors that influence the performance of road construction projects. This can include local management practices, regulatory environment and socio-economic conditions.

3.3 Target Population

The larger group that a sample is drawn from is the study population as outlined by Thornhill (2017). The target population of this research comprised 165 project managers, 120 Engineers, 200 project supervisors, 150 Quantity surveyors and 65 Architect in Kiambu County Kenya. The unit of analysis is the ongoing road construction projects at the county level. Below is table 3.1 which illustrates the target population according to distribution.

Table 3.1: Target Population

Categories	Target population
Project managers	165
Engineers	120
Project supervisors	200
Quantity Surveyors	150
Architect	65
Total	**700**

Source: KenHA (2023)

3.5 Study Sample

A sample size is the sub set of a target population. The sample size was determined by the use of determination table of Morgan and Krechejie 1970. The number of target population is 700 which was determined and ended up to 248 as a sample size. To determine the number of firms participating in the study, basic random sampling method was employedj. The calculations were computed using Yamane's formula of 1967 as shown below:

$$S = \frac{X^2 NP (1-P)}{d^2 (N-1) + X^2 P (1-P)}$$

Project managers $\frac{248}{700} * 165 = 58$

Engineers $\frac{248}{700} * 120 = 43$

Project supervisors $\frac{248}{700} * 200 = 71$

Quantity Surveyors $\frac{248}{700} * 150 = 53$

Architect $\frac{248}{700} * 65 = 23$

The population of a research study and the anticipated size of the sample are displayed in a table that the author created based on a formula to make the process of calculating sample size easier for the researchers. This thus ensured that the researcher derived a sample of 248 representing the study as shown below in Table 3.2

Table 2.2: The Distribution of the Sample Size

Categories	Target population	Sample size
Project managers	165	58
Engineers	120	43
Project supervisors	200	71
Quantity Surveyors	150	53
Architect	65	23
Total	**700**	**248**

Source: Researcher (2024)

3.5.1 Sampling Procedure

According to Taherdoost (2018), a sample is a subset of the studied population. Obtaining a representative segment by sampling is crucial since it allows researchers to get information about a population more easily (Martínez, 2019). Sampling, according to Oppong (2017), is done to create a representative group that gives the researcher hints about the target population as a whole. The researcher adopted stratified sampling technique.

3.6 Data Collection

3.6.1 Data Collection Instruments

In this section data collection methods was outlined. In this regard, interviews and questionnaires were used to give comprehensive information in order to triangulate the information and get proper data as per the study under investigation. Questionnaire: In this

study, primary data was gathered by use of questionnaires. The questionnaire consisted of closed and open-ended questions which helped in providing accurate information. The questionnaire were answered basing the quantitative data on a 5-point Likert scale rating ranging from strongly disagree to strongly agree. Before formulating the questionnaire, preview of the relevant literature was done to establish the key factors of the research variables. Full measurement constructs for the research were adopted from the previous studies. All this was considered for two main reasons. Interview guide; for the interview guide, the purposive sampling method was applied to Quantity surveyors and Architect in construction firms. This was done by the researcher herself in order to get in-depth information about the officer concerned. This helped in triangulating the required information and be able to get a comprehensive report. The officers were requested to avail themselves on a day of their choice which was decided by both the researcher and the officers.

3.6.2 Piloting of Research Instruments

Pilot testing of the study questionnaire was undertaken before administering to respondents. Mugenda and Mugenda (2008) argued that pilot testing of a research study refers to the process of examining the extent in which the research instruments was considered to be effective in the provision of accurate and consistent results as per the study objectives. Notably, the research instruments are considered to be effective, in fact, pilot test study was performed on at least 10% to 20% be specific of the target population and should not be on the real population of the study (Mugenda & Mugenda, 2008). A pilot study was carried out in a Thika neighboring Sub-County which has similar characteristics and comprised 24 respondents in number. This helped in validating the instrument for the actual study to be carried out.

3.6.3 Instruments of Reliability

Reliability is a measure of a degree to which a research instrument yields consistent results or data after repeated trials (Garg & Kothari, 2014). Reliability estimates evaluate the stability of measures, internal consistency of measurement instruments, and interrater reliability of

instrument scores. A research is reliable to the extent that whatever it measures, it measures it consistency (Bryman & Bell, 2015). Random error influences reliability and as random error increases, reliability increases. Random error is deviation from the true measurement and may arise due to inaccurate instrument used, inaccurate scoring by the researcher and other unexplained errors. It ultimately affected the reliability of the data collected. Reliability of the questionnaire will be tested by computing Cronbach's coefficient alpha to check its internal consistency. A Cronbach's Alpha of 0.7 and above was accepted as reliable. All the three study variables generated Cronbach's alpha above 0.7. (Leadership Styles 0.875; Team Competency 0.754; Technological Exposure 0.810) and were accepted as reliable. The reliability test results are as shown below.

Table 3.3 Results of reliability test

Constructs value	No of items tested	Cronbach's Alpha
Leadership Styles	3	0.875
Team Competency	3	0.754
Technological Exposure	3	0.810

Source: Researcher (2024)

3.6.4 Instruments of Validity

Validity, according to Bryman and Bell (2015), refers to the degree to which empirical evidences and theoretical rationales support the adequacy and appropriateness of interpretations and actions based on test scores. Also, it's the extent to which the interpretations of the results of the test are warranted, which depends on the particular use the test is intended to serve (Bryman, 2016). As a process, validation involves collecting and analyzing data to access the validity of quantitative instruments, which generally involves pilot testing. Validity therefore, depends on how accurately the data collected represents the study variables. It's determined largely by systematic error also known as non- random error. Construct and content validity

were tested. For assessment of construct validity a theoretical framework concerning the concept to be measured must exist and the expectations in the theory must conform to the measurements. Content validity is a measure of the degree to which the collected data using a specific instrument symbolises a content of a specific concept. To ensure content validity, the university supervisor reviewed the instruments, whether the instrument covered what was supposed to be covered. The researcher also ensured the research questions were well understood to avoid misunderstanding. Therefore, the construct validity was checked by the using of principle axis factoring method with extraction factor with eigen values greater than 1. The factors in the study constructs returned Eigen value that were greater than 1(leadership styles=2.601; team competency= 2.502; technological exposure= 3.070) and were considered to be valid. The results are in the table below;

Table 3.4 Results for Construct Validity Test

Constructs	No. of items tested	Eigen Value
Leadership Styles	3	2.601
Team Competency	3	2.502
Technological Exposure	3	3.070

Source: Researcher (2024)

3.6.5 Data Collection Procedures

During the process of data collection, primary data was used in this research study. Survey questionnaires were used to administer all respondents selected for the study in order to obtain primary data and information on the variables on study. The questionnaires that were used during data collection contained structured questions. The secondary data sources that were employed were through the use of previous documents or materials to supplement the data received from questionnaires and information from interviews. The researcher acquired a letter of introduction from the Africa Nazarene University School of Business. The "drop and pick" approach and online surveys were employed in the data collection process. According to their

flexibility and the length of the surveys, participants were given enough amount of time to complete them.

3.7 Data Processing and Analysis

This is the process of collecting, modelling and transforming data in order to highlight useful information, suggesting conclusions and supporting decision making (Garg & Kothari, 2014). Throughout the data collection period, data was carefully analysed through various means in an effort to answer the study objectives. Quantitative data from the questionnaire was analysed using SPSS version 23 to determine the frequencies and percentages of certain responses. The influence between independent variables (management strategies) and dependent variable which is performance of road construction projects in this study were measured through multiple regression analysis, in order to find out influence on each other (Mugenda, 2008). The findings were presented in tables, graphs and charts to present the information gathered.

3.8 Legal and Ethical Considerations

Ethics, according to Frendrich & Ferrell (2018), standards and views are regarding what is deemed to be right and wrong. Furthermore, the authors demonstrated how ethics in research centers on establishing what is proper and improper for the entirety of the study period. In addition to endorsing the study findings, the goal of ethics in research is to ensure that the investigator follows the prescribed protocol for data collection and analysis. Values and judgment are essential for making ethical decisions during the study process. However, unethical behaviors were looked into, at the same time confidentiality agreements were made with those who provided information to the researchers. Participation were entirely optional, individuals were permitted to decline or end their participation at any time during the study if they felt unsecure, and however this was mitigated through proper assurance to their safety. The researcher was committed to keeping the information of the participants confidential by assuring them that the study is meant for academic purposes only. The researcher sought

permission from the concerned authority to carry out the study at specified times to limit clashing with the respondents' time frames. Moreover, the researcher sought authorization from Africa Nazarene University, and from NACOSTI.

CHAPTER FOUR

DATA PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

The current chapter presents the findings on management strategies on performance of road construction projects in Kiambu County, Kenya. Data was collected using questionnaires and interviews guides which was later analyzed and presented in tables. The findings were interpreted and discussed while summary of the findings were represented in chapter five.

4.2 Questionnaires Return-Rate

The response rate of the questionnaire in the study is 88%, with 220 returned out of the 248 distributed. This high response rate was as result of cooperation from the study's target audience who were very cooperative and responded appropriately. The 12% of questionnaires that were not returned may have been due to various factors that made them not possible to be returned and analyzed. A high return rate increases the confidence that data accurately reflects the opinions of the vast majority of the respondents. The results are presented in Table 4.1

Table-4.1: Return Rate for the Questionnaire

Questionnaire Categories	Frequency	Percentage (%)
Received questionnaires	220	88
Unreturned questionnaires	28	12
Total	**248**	**100.0**

Source: Research (2024)

The findings in Table 4.1 designates that the return rate was 88%. This supersedes 68% as the minimum response rate for conclusive survey findings. All the interviewees responded to the interview questions. When return rate is high, it increases the assurance that data reflects the views of the majority of the respondents. As a result, validity is enhanced.

4.3 Demographic Characteristics of the Respondents

The demographic features included: gender, age, marital status, and duration of stay, level of education and designation of the respondents as summarized in Table 4.2. It includes presentation of data on the management strategies on performance of road construction projects in Kiambu County, Kenya.

Table 4.2 Personal and Demographic Data of the Respondents

Categories	**Frequency**	**Percentage**
Gender		
Male	127	57.7
Female	93	42.3
Total	220	100
Age	**Frequency**	**Percentage**
Below 30	21	9.5
30-39	59	26.8
40-49	82	37.3
50-59	46	20.9
Above 60	12	5.5
Total	220	100
Marital Status	**Frequency**	**Percentage**
Single	51	23.2
Married	123	55.9
Other	46	20.9
Total	220	100
Duration	**Frequency**	**Percentage**
5Yrs and below	57	25.9
6-10	93	42.3
16-20	51	23.2
21-25	14	6.4
26-30	4	1.8

31-35	1	0.5
Total	220	100
Education	**Frequency**	**Percentage**
Bachelor's degree	129	58.6
Master's degree	12	5.5
Diploma	42	19.1
Certificate	37	16.8
Total	220	100
Designation	**Frequency**	**Percentage**
Senior management staff	33	15
Middle management staff	114	51.8
Entry level	73	33.2
Total	**220**	**100**

Source: Researcher (2024)

4.2.1 Gender of the Respondents

The findings of data in Table 4.2 indicates that 127(57.7%) were males who actually dominates the construction industry while 93 (42.3%) respondents were females. It meant that males were the majority in the construction industry followed closely by females so as to bridge the gap of two thirds and eradicate gender biasness in construction sector. There no precise data which challenges the information of construction of roads in Kiambu Sub-County, Kenya this means that follow up and several studies must be carried out to bridge the gap. The implication of the study is that more men are involved in the construction of roads unlike the female counter parts.

4.2.2 Age category respondents

This category was deemed vital because it is the critical component of the ages of the contractors. The contractor age is necessary since one will be able to tell the capability of the

contractor through the age. The respondents were of different age groups as stated in Table 4.2. This is reflected on how different categories were indicated like 40-49 years were 82(37.3%) being the highest number in this category while 30-39 years had 59(26.8%) taking the second position, followed by50-59 years 46(20.9%) on the third position and 30-35 were 47(12.4%) at the fourth position. The next category was below 30 years 21(9.5%) and finally above 60 were 12(5.5%). The age group implies that all categories of age were presented in the construction sector. Majority are at the prime age of their lives and very energetic and with proper experience required by any organization.

4.2.3 Marital status of the respondents

It was found worth responding to the status of marital status to seek how many people are married or not married and the effects they have in the construction industry. The results in Table 4.2 shows that married people were the majority holders with 123(55.9%). Meaning many contractors staff implementing the road construction are married. This category was followed by single 51(23.2%) families. Others who are not falling in any of the two category were at 46(20.9%). The implication of this is study is that majority were married meaning they had families and people to take care of and be responsible while trying to implement the projects so that they can earn a living to support them.

4.2.4 Education of the Respondents

The level of education was worth responding to since one to be sure if the people undertaking the study are learned. The results in Table 4.2 shows that majority holders were bachelor degree with 129(58.6%). This category was followed by diploma holders 42(19.1%).who were the second in the study. The certificates holders had 37(16.2%), while master's degree were 12(5.5%). The implication of this is study is that majority had knowledge on education and they were able to answer questions without much guidance. They were able to predict the questions and statements indicated very well thus giving the basic and primary

information management strategies on performance of road construction projects in Kiambu County, Kenya.

4.2.5 Duration of working in the company.

The member duration was deemed vital since it could help in identifying those who served the longest time as a contractor in construction industry. The findings showed that those who stayed longest duration were between 6-10 years 93(42.3%). This means that many people had the grip of the construction industry and had enough experience on what they were performing. This was followed by between 5 years and below 57(25.9%). This is also quite a big number of people who had worked in construction sector for long meaning hey exactly how roads constructions are performed. The other category was 16-20 years 51(42.3%) which was quiet a good number of people, while 21-25 years at 14(6.4%). This was followed by 26-30 years 14(6.4%).Finally 31-35 years had 1(0.5%) This means that 6-10 years had most members meaning that they had enough knowledge about construction of road projects.

4.2.6 Responses on their designation

The issues of their level of management was also a concern and the study sought to investigate how each level of management influenced management strategies and performance of road construction in Kiambu County, Kenya. Among the participants who were the highest had 114 (51.8%). This is the level of middle management staff who link up the senior and lower level management together and give information where necessary. It was followed by entry level at 73(33.2%) and finally senior management staff at 33(15%). The implication in this statement is that the middle staff are very informed about the sector of construction since they are in the middle of two categories which are very crucial.

4.4 Findings on Leadership styles and Performance of road construction projects.

It was very vital to investigate on leadership styles and the findings are indicated in Table 4.3.

4.4.1 Descriptive Data Leadership styles and Performance of road construction projects in Kiambu County, Kenya

There were six items responded to as indicated on Table 4.3 on Leadership styles and Performance of road construction projects in Kiambu County, Kenya. A composite mean of 3.45 greater than 3.0 suggest that majority of the respondents agreed that leadership styles has an influence on the performance of rod construction projects in Kiambu County, Kenya.

Table 4.3 Leadership styles and Performance of road construction projects in Kiambu County, Kenya

Statements(Leadership styles)	**SD** **%** **F**	**D** **%** **F**	**N** **%** **F**	**A** **%** **F**	**SA** **%** **F**	**Mean**	**Std deviation**
1. Consultative meetings are frequently addressed so as to help the staff on issues they are not able to work independently	11 (5%)	34 (15.5%)	21 (9.5%)	95 (43.2%)	59 (26.8%)	**3.71**	**1.16**
2. There so many questions about contractors which are not handled easily due to complexity of the nature of different projects	19 (8.6%)	25 (11.4%)	20 (9.1%)	97 (44.1%)	59 (26.8%)	**3.69**	**1.22**
3. Most contractors are able to handle issues that are in their dockets, however those from external environment are not easily handled	26 (11.8%)	83 (37.7%)	21 (9.5%)	65 (29.5%)	25 (11.4%)	**2.91**	**1.26**
4. Many contractors arrange trainings and workshops for their staff	20 (9.1%)	70 (31.8%)	15 (6.8%)	80 (36.4%)	35 (15.9%)	**3.18**	**1.28**

5. Project managers are taught how to manage teams and assign tasks	9 (4.1%)	83 (37.7%)	25 (11.4%)	63 (28.6%)	40 (18.2%)	**3.19**	**1.23**
6. Project supervisors have little or no say to their juniors hence low production	9 (33.1%)	28 (12.7%)	7 (3.2%)	82 (38.2%)	92 (41.8%)	**4.01**	**1.15**
Overall Composite Mean and Std deviation						**3.45**	**1.22**

Source: Researcher (2024)

The findings on Table 4.3 had the following results consultative meetings are frequently addressed so as to help the staff on issues they are not able to work independently had mean of 3.71 and standard deviation of 1.16. According to the number of questionnaires given 220 responded were, 11(5%) strongly disagreed, 34(15.5%) disagreed, 21(9.5%) neutral, 95(43.2%) agreed while 59(26.8%) strongly agreed. These result show that 3.71 is higher than the composite mean of 2.78. The implication of these results to the study is that consultative meetings are frequently addressed so as to help the staff on issues they are not able to work independently and address them well. The Standard deviation of 1.16 is lower than the composite standard deviation of 1.27 indicating that there was diverging opinion among the respondents. Another statement was there so many questions about contractors which are not handled easily due to complexity of the nature of different projects had a mean of 3.69 and standard deviation of 1.22. According to the number of questionnaires given 220 respondents, 19(8.6%) strongly disagreed, 25(11.4%) disagreed, 20(9.1%) neutral, 97(8.9%) agreed while 59(26.8%) strongly agreed. These results show that 3.69 is higher than the composite mean of 2.78. The implication of these findings for the study is that there so many questions about contractors which are not handled easily due to complexity of the nature of different projects The Standard deviation of 1.27 is lower than the composite standard deviation of 1.36 indicating that there was diverging opinion among the respondents.

On the statement of most contractors are able to handle issues that are in their dockets, however those from external environment are not easily handled had a mean of 2.91 and standard deviation of 1.26. According to the number of questionnaires given 220 respondents, 26(11.8%) strongly disagreed, 83(37.7%) disagreed, 21(9.5%) neutral, 65(29.5%) agreed while 25(11.4%) strongly agreed. These results show that 2.91 is higher than the composite mean of 2.78. The implication of these findings for the study is that most contractors are able to handle issues that are in their dockets, however those from external environment are not easily handled. The Standard deviation of 1.26 is lower than the composite standard deviation of 1.36 indicating that there was converging opinion among the respondents. Based on the statement of many contractors arrange trainings and workshops for their staff had a mean of 3.18 and standard deviation of 1.28. According to the number of questionnaires given 220 respondents, 20(9.1%) strongly disagreed, 70(31.8%) disagreed, 15(6.8%) neutral, 80(36.4%) agreed while 35(15.9%) strongly agreed. These results show that 3.18 is higher than the composite mean of 2.78. The implication of these findings for the study is that contractors arrange trainings and workshops for their staff to better their skills. The Standard deviation of 1.28 is lower than the composite standard deviation of 1.36 indicating that there was converging opinion among the respondents

The findings on this statement of project managers are taught how to manage teams and assign tasks had a mean of 3.19 and standard deviation of 1.23. According to the number of questionnaires given 220 respondents, 9(4.1%) strongly disagreed, 83(37.7%) disagreed, 25(11.4%) neutral, 63(28.6%) agreed while 40(18.2%) strongly agreed. These results show that 3.19 is higher than the composite mean of 2.78. The implication of these findings for the study is that project managers are taught how to manage teams and assign tasks thus good products and services to their clients. The Standard deviation of 1.23 is lower than the composite standard deviation of 1.36 indicating that there was converging opinion among the respondents. The findings on this statement of project supervisors have little or no say to their junior's hence low

production had a mean of 4.01 and standard deviation of 1.15. According to the number of questionnaires given 220 respondents, 9(4.1%) strongly disagreed, 28(12.7%) disagreed, 7(3.2%) neutral, 84(38.2%) agreed while 92(41.8%) strongly agreed. These results show that 4.01 is higher than the composite mean of 2.78. The implication of these findings for the study is that project supervisors have little or no say to their junior's hence low production due to no team work. The Standard deviation of 1.15 is lower than the composite standard deviation of 1.36 indicating that there was converging opinion among the respondents.

4.4.2 Inferential Statistics for Leadership styles and Performance of road construction projects in Kiambu County, Kenya.

Correlation between Leadership styles and Performance of road construction projects was computed by means of Pearson`s correlational analyses and Table 4.4 which presents the statistical outputs. The total scores of the scale were computed as a summation of the individual scores on each item by the respondents at 95% level of confidence. The correlation analysis results obtained are shown in Table 4.4

Table 4.4 Correlation between Leadership styles and Performance of road construction projects in Kiambu County, Kenya.

Variable	Statistics	Performance of road construction projects
Leadership styles	Pearson Correlation	0.090**
	Sig.(2-tailed)	0.018
	N	220

(n=220); **Correlation is significant at 0.05 level (2-tailed)

The study found a weak positive overall correlation 0.90 which was statistically significant as (P-Value=0.018 < 0.05); implying that there is a significant relationship between Leadership styles and Performance of road construction projects leading to the rejection of the null hypothesis and acceptance of the alternative hypothesis hence the research results conclude that

there is significant relationship between Leadership styles and Performance of road construction projects in Kiambu County, Kenya

4.4.3 Model summary of Leadership styles and Performance of road construction projects in Kiambu County, Kenya

The model sought to determine how Leadership styles and Performance of road construction projects. Simple linear regression was adapted to investigate how Leadership styles influences **Performance of road construction projects.** The regression model summary results are presented in Table 4.5.

Table 4.5: Regression Model Summary Table on Performance of road construction projects in Kiambu County, Kenya

Model summary					
Model	R	R Square	Adjusted R Square		Std. Error of the Estimate
1	0. 290[a]	0.084	0.072		0.47414

Source: Author (2024)

a. Predicator: (Constant), Leadership styles

Table 4.6 ANOVA Findings

ANOVA						
Model		**Sum of Squares**	**Df**	**Mean Squares**	**F**	**Sig.**
1	Regression	0.396	1	0.396	1.763	0.018[b]
	Residual	49.009	218	0.225		
	Total	49.405	219			

Source: Author (2024)

a. Leadership styles and Performance of road construction projects

b. Predictors: (Constant), Leadership styles

The Model summary Table 4.5 suggest that there is a positive correlation (R^2=0.084) between Leadership styles and Performance of road construction projects and those predicted by the regression model.

Table 4.7: Coefficient Findings

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig (p-value)
		B	Std. Error	Beta		
1	(Constant)	3.108	0.259		12.013	0.000
	Leadership styles	0.095	0.072	0.090	1.328	0.018

Source: Researcher (2024)

Independent Variable: Leadership styles

The ANOVA data shows that F=1.763, Leadership styles was significant in estimating Performance of road construction projects since p=0.018<0.05. Thus, the model was fit in predicting dependent variable. The coefficient data shows that holding other factors constant, Performance of road construction projects would stand at 3.108. A unit rise in the Leadership styles would lead to 0.095 change in Performance of road construction projects, given that other factors were held constant. The substituted model is:

Model: $Y= 3.108+0.095X_1+\varepsilon$ where,

Y = Performance of road construction projects

X_1 Leadership styles

ε = Error term.

4.4.3 Discussion on Leadership styles and Performance of road construction projects

The descriptive and correlational data make it clear that there is a relationship between Leadership styles and Performance of road construction projects. The results are consistent with those of other similar empirical studies that suggest Leadership styles affect the success of Performance of road construction projects as stated by (Plummer and DarConte, (2021; Fareed, Su, & Awan, (2021and Sarwar group, 2020). According to Fareed, Su, & Awan, (2021). The dynamics of leadership describe how a leader influences the team to finish a job within the allotted time since a variety of elements affect leadership and decision making which is very significant (Khan et al. 2020)

4.5 Findings on Team competency and Performance of road construction projects.

It was very vital to investigate on Team competency and the findings are indicated in Table 4.4**.**

4.5.1 Descriptive Data Team competency and Performance of road construction projects in Kiambu County, Kenya

There were six items responded to as indicated on Table 4.4 on Team competency and Performance of road construction projects in Kiambu County, Kenya

Table 4.8 Team competency and Performance of road construction projects in Kiambu County, Kenya

Statements(Team competency)	SD % F	D % F	N % F	A % F	SA % F	Mean	Std deviation
1. Proper planning is essential for any project to end up well. So, people are consulting one another while planning activities are going on	13 (5.9%)	32 (14.5%)	18 (8.2%)	84 (38.2%)	73 (33.2%)	**3.78**	**1.21**
2. New techniques are utilized after thorough trainings have been undertaken	10 (4.5%)	32 (14.5%)	20 (9.1%)	82 (37.3%)	76 (34.5%)	**3.82**	**1.18**
3. The project supervisor writes and records reports on schedule and in accordance with the predetermined goals.	10 (4.5%)	14 (6.8%)	15 (6.8%)	98 (44.5%)	83 (37.7%)	**4.05**	**1.05**
4. Project reports are created using fundamental data that is retrieved from the database.	63 (28.6%)	110 (50%)	21 (9.5%)	19 (8.6%)	7 (3.2%)	**2.08**	**1.05**
5. Task delegation and team management are skills taught to project managers and supervisors	10 (4.5%)	29 (13.2%)	20 (9.1%)	94 (9.1%)	67 (18.2%)	**3.81**	**1.14**
6. There is minimal production because contractors have little or no influence over their juniors	14 (6.4%)	28 (12.7%)	10 (4.5%)	72 (32.7%)	96 (43.6%)	**3.95**	**1.25**
Overall Composite Mean and Std deviation						**3.58**	**1.19**

Source: Researcher (2024)

The findings on this statement of proper planning is essential for any project to end up well. So, people are consulting one another while planning activities are going on had a mean of 3.78 and standard deviation of 1.21. According to the number of questionnaires given 220 respondents, 13(5.9%) strongly disagreed, 32(14.5%) disagreed, 18(8.2%) neutral, 84(38.2%) agreed while 73(33.2%) strongly agreed. These results show that 3.78 is higher than the

composite mean of 3.58. The implication of these findings for the study is that proper planning is essential for any project to end up well. So, people are consulting one another while planning activities are going on. The Standard deviation of 1.21 is higher than the composite standard deviation of 1.19 indicating that there was converging opinion among the respondents. Based on this statement of new techniques are utilized after thorough trainings have been undertaken on had a mean of 3.83 and standard deviation of 1.18. According to the number of questionnaires given 220 respondents, 10(4.5%) strongly disagreed, 32(14.5%) disagreed, 20(9.1%) neutral, 82(37.3%) agreed while 76(34.5%) strongly agreed. These results show that 3.83 is higher than the composite mean of 3.58. The implication of these findings for the study is that new techniques are utilized after thorough trainings have been undertaken. The Standard deviation of 1.18 is lower than the composite standard deviation of 1.19 indicating that there was converging opinion among the respondents

In line with this statement of the project supervisor writes and records reports on schedule and in accordance with the predetermined goals had a mean of 4.05 and standard deviation of 1.05. According to the number of questionnaires given 220 respondents, 10(4.5%) strongly disagreed, 14(6.4%) disagreed, 15(6.8%) neutral, 98(44.5%) agreed while 83(37.7%) strongly agreed. These results show that 4.05 is higher than the composite mean of 3.58. The implication of these findings for the study is that project supervisor writes and records reports on schedule and in accordance with the predetermined goals. The Standard deviation of 1.18 is lower than the composite standard deviation of 1.19 indicating that there was converging opinion among the respondents. There were some information on the statement of the Project reports are created using fundamental data that is retrieved from the database had a mean of 4.05 and standard deviation of 1.05. According to the number of questionnaires given 220 respondents, 10(4.5%) strongly disagreed, 14(6.4%) disagreed, 15(6.8%) neutral, 98(44.5%) agreed while 83(37.7%) strongly agreed. These results show that 4.05 is higher than the composite mean of

3.58. The implication of these findings for the study is that project reports are created using fundamental data that is retrieved from the database. The Standard deviation of 1.18 is lower than the composite standard deviation of 1.19 indicating that there was converging opinion among the respondents.

Task delegation and team management are skills taught to project managers and supervisors had a mean of 3.81 and standard deviation of 1.14. According to the number of questionnaires given 220 respondents, 63(28.6%) strongly disagreed, 110(50%) disagreed, 21(9.5%) neutral, 19(8.6%) agreed while 7(3.7%) strongly agreed. These results show that 4.05 is higher than the composite mean of 3.58. The implication of these findings for the study is that Task delegation and team management are skills taught to project managers and supervisors which enable them to work perfectly. The Standard deviation of 1.14 is lower than the composite standard deviation of 1.19 indicating that there was converging opinion among the respondents. There is minimal production because contractors have little or no influence over their juniors had a mean of 3.95 and standard deviation of 1.25. According to the number of questionnaires given 220 respondents, 14(6.4%) strongly disagreed, 28(12.7%) disagreed, 10(4.5%) neutral, 72(32.7%) agreed while 96(43.6%) strongly agreed. These results show that 3.95 is higher than the composite mean of 3.95. The implication of these findings for the study is that there is minimal production because contractors have little or no influence over their juniors. The Standard deviation of 1.14 is lower than the composite standard deviation of 1.19 indicating that there was converging opinion among the respondents.

4.5.2 Inferential Statistics for Team competency and Performance of road construction projects in Kiambu County, Kenya.

Correlation between Leadership styles and Performance of road construction projects was computed by means of Pearson`s correlational analyses and Table 4.5 which presents the statistical outputs. The total scores of the scale were computed as a summation of the individual scores on each item by the respondents at 95% level of confidence. The correlation analysis results obtained are shown in Table 4.5

Table 4.9 Correlation between Team competency and Performance of road construction projects in Kiambu County, Kenya.

Variable	Statistics	Performance of road construction projects
Team competency	Pearson Correlation	0.087**
	Sig.(2-tailed)	0.009
	N	220

(n=220); **Correlation is significant at 0.05 level (2-tailed)

The study found a weak positive overall correlation 0.087 which was statistically significant as (P-Value=0.009 < 0.05); implying that there is a significant relationship between Team competency and Performance of road construction projects leading to the rejection of the null hypothesis and acceptance of the alternative hypothesis hence the research results conclude that there is significant relationship between Team competency and Performance of road construction projects in Kiambu County, Kenya

4.5.3 Model summary of Team competency and Performance of road construction projects in Kiambu County, Kenya

The model sought to determine how Team competency and Performance of road construction projects. Simple linear regression was adapted to investigate how Team competency influences

Performance of road construction projects. The regression model summary results are presented in Table 4.6.

Table 4.10 Regression Model Summary Table on Team competency and Performance of road construction projects in Kiambu County, Kenya

Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0. 650[a]	0.422	0.052	0.47423

b. Predicator: (Constant), Team competency

ANOVA

Model		**Sum of Squares**	**Df**	**Mean Squares**	**F**	**Sig.**
1	Regression	0.378	1	0.378	1.682	0.009[b]
	Residual	49.027	218	0.225		
	Total	49.405	219			

a. Team competency and Performance of road construction projects

b. Predictors: (Constant), Team competency

The Model summary Table 4.6 suggest that there is a positive correlation (R^2=0.422) between Team competency and Performance of road construction projects and those predicted by the regression model.

Table 4.11 Coefficients Findings

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig (p-value)
		B	Std. Error	Beta		
1	(Constant)	3.677	0.179		20.593	0.000
	Team competency	0.066	0.053	0.087	1.297	0.009

Source: Researcher (2024)

a. Independent Variable: Team competency

The ANOVA data shows that F=1.682, Team competency was significant in estimating Performance of road construction projects since p=0.009<0.05. Thus, the model was fit in predicting dependent variable. The coefficient data shows that holding other factors constant, Performance of road construction projects would stand at 3.677. A unit rise in the Team competency would lead to 0.066 change in Performance of road construction projects, given that other factors were held constant. The substituted model is:

Model: $Y= 3.677+0.066X_1+\varepsilon$ where,

Y = Performance of road construction projects

X_1 Team competency

ε = Error term.

4.5.4 Qualitative Data on Team competency and performance of road construction projects

It was discovered that Team competency and Performance of road construction projects, were related to the answers given to the assertions provided at each variable in the interview guide questions. The qualitative responses are summarized,

> *"There are many people who are divided in different groups but do not work as a team. Roads in Kiambu are in bad shape hence no proper movement and especially during rainy seasons."*

4.5.5 Discussion on Team competency and Performance of road construction projects

The descriptive and correlational data make it clear that there is a relationship between Team competency and Performance of road construction projects. The results are consistent with

those of other similar empirical studies that suggest Team competency affect the success of Performance of road construction projects Over a long time, the construction industry has placed a high value on improvements in project performance brought about by increases in labor skills (Rehman & Ishak, 2022: Farid, Kureshi, Babar & Mahmood, 2020). Thus, project traits basically control the way in which the leading behaviors of the project manager interact with the employees to guarantee that they display creative behaviors (Day and Shea, 2020; Purwanto, et al., 2021)

4.6.1 Findings on Technological exposure and Performance of road construction projects.

It was very vital to investigate on Technological exposure and the findings are indicated in Table 4.7**.**

4.6.2 Descriptive Data Technological exposure and Performance of road construction projects in Kiambu County, Kenya

There were six items responded to as indicated on Table 4.7 on Technological exposure and Performance of road construction projects in Kiambu County, Kenya

Table 4.12 Technological exposure and Performance of road construction projects in Kiambu County, Kenya

Statements(Technological exposure)	**SD** **%** **F**	**D** **%** **F**	**N** **%** **F**	**A** **%** **F**	**SA** **%** **F**	**Mean**	**Std deviation**
1. Very few staff members have knowledge on software management on ICT technology	17 (7.7%)	79 (35.9%)	7 (3.2%)	48 (21.8%)	69 (31.4%)	**3.33**	**1.42**
2. When planning for project activities one needs to be conversant with new technology techniques	17 (7.7%)	71 (32.3%)	12 (5.5%)	81 (36.8%)	39 (17.7%)	**3.25**	**1.28**
3. Junior staff has the ability to follow instructions as delegated by the seniors	17 (7.7%)	80 (36.4%)	7 (3.2%)	47 (21.4%)	69 (31.4%)	**3.32**	**1.43**

4. All the implementing team have exposure with machines and equipment's handled in the construction sites	15 (6.8%)	51 (23.2%)	7 (3.2%)	74 (33.6%)	73 (33.2%)	**3.63**	**1.33**
5. Data is safely stored and used when needed and appropriately in accordance with the set objectives	17 (7.7%)	71 (32.3%)	12 (5.5%)	81 (36.8%)	39 (17.7%)	**3.25**	**1.28**
6. Technology applications have made work easier in construction industry	9 (4.1%)	30 (13.6%)	7 (3.2%)	83 (37.7%)	91 (41.4%)	**3.99**	**1.16**
Overall Composite Mean and Std deviation						**3.46**	**1.36**

Source: Researcher (2024)

Based on the findings on Table 4.7 the results on the statements with very few staff members have knowledge on software management on ICT technology had a mean of 3.33 and standard deviation of 1.42. According to the number of questionnaires given 220 respondents, 17(7.7%) strongly disagreed, 79(35.9%) disagreed, 7(3.2%) neutral, 48(21.8%) agreed while 69(31.4%) strongly agreed. These results show that 3.33 is lower than the composite mean of 3.46. The implication of these findings for the study is that not many staff members have knowledge of ICT thus low performance on the side of technology. The Standard deviation of 1.42 is higher than the composite standard deviation of 1.36 indicating that there was diverging opinion among the respondents.

The results on the statements with very few staff members have knowledge on software management on ICT technology had a mean of 3.33 and standard deviation of 1.42. According to the number of questionnaires given 220 respondents, 17(7.7%) strongly disagreed, 79(35.9%) disagreed, 7(3.2%) neutral, 48(21.8%) agreed while 69(31.4%) strongly agreed. These results show that 3.33 is lower than the composite mean of 3.46. The implication of these

findings for the study is that not many staff members have knowledge of ICT thus low performance on the side of technology. The Standard deviation of 1.42 is higher than the composite standard deviation of 1.36 indicating that there was diverging opinion among the respondents. On the statement of when planning for project activities one needs to be conversant with new technology techniques had a mean of 3.25 and standard deviation of 1.28. According to the number of questionnaires given 220 respondents, 17(7.7%) strongly disagreed, 71(32.3%) disagreed, 12(5.5%) neutral, 81(36.8%) agreed while 39(17.7%) strongly agreed. These results show that 3.25 is lower than the composite mean of 3.46. The implication of these findings for the study is that planning for project activities one needs to be conversant with new technology techniques for better results. The Standard deviation of 1.28 is lower than the composite standard deviation of 1.36 indicating that there was converging opinion among the respondents

Instructions are very key when junior staff has the ability to follow instructions as delegated by the seniors had a mean of 3.32 and standard deviation of 1.14. According to the number of questionnaires given 220 respondents, 17(7.7%) strongly disagreed, 80(36.4%) disagreed, 7(3.2%) neutral, 47(21.4%) agreed while 69(31.4%) strongly agreed. These results show that 3.32 is lower than the composite mean of 3.46. The implication of these findings for the study is that junior staff has the ability to follow instructions as delegated by the seniors thus getting good team work. The Standard deviation of 1.43 is higher than the composite standard deviation of 1.36 indicating that there was diverging opinion among the respondents. All the implementing team have exposure with machines and equipment's handled in the construction sites had a mean of 3.63 and standard deviation of 1.33. According to the number of questionnaires given 220 respondents, 15(6.8%) strongly disagreed, 51(23.2%) disagreed, 7(3.2%) neutral, 74(33.6%) agreed while 73(33.2%) strongly agreed. These results show that 3.63 is higher than the composite mean of 3.46. The implication of these findings for the study

is that when the staff implementing the projects has exposure with and equipment's excellent work is expected from the team since they have experience on their tasks being performed. The Standard deviation of 1.33 is lower than the composite standard deviation of 1.36 indicating that there was converging opinion among the respondents

In data bases information is stored for future use. In this connection data is safely stored and used when needed and appropriately in accordance with the set objectives had a mean of 3.25 and standard deviation of 1.28. According to the number of questionnaires given 220 respondents, 17(7.7%) strongly disagreed, 71(32.3%) disagreed, 12(5.5%) neutral, 81(36.8%) agreed while 39(17.7%) strongly agreed. These results show that 3.25 is lower than the composite mean of 3.46. The implication of these findings for the study is that data is safely stored and used when needed and appropriately in accordance with the set objectives. The Standard deviation of 1.28 is lower than the composite standard deviation of 1.36 indicating that there was converging opinion among the respondents. Technology applications have made work easier in construction industry had a mean of 3.99 and standard deviation of 1.16. According to the number of questionnaires given 220 respondents, 9(4.1%) strongly disagreed, 30(13.6%) disagreed, 7(3.2%) neutral, 83(37.7%) agreed while 91(41.4%) strongly agreed. These results show that 3.99 is higher than the composite mean of 3.46. The implication of these findings for the study is that technology has made construction easier and has eased the problem of delay in the construction sites. The Standard deviation of 1.16 is lower than the composite standard deviation of 1.36 indicating that there was converging opinion among the respondents

4.6.3 Inferential Statistics for Technological exposure and Performance of road construction projects in Kiambu County, Kenya.

Correlation between Technological exposure and Performance of road construction projects was computed by means of Pearson`s correlational analyses and Table 4.8 which presents the

statistical outputs. The total scores of the scale were computed as a summation of the individual scores on each item by the respondents at 95% level of confidence. The correlation analysis results obtained are shown in Table 4.13

Table 4.13 Correlation between Technological exposure and Performance of road construction projects in Kiambu County, Kenya.

Variable	Statistics	Performance of road construction projects
Technological exposure	Pearson Correlation	0.803**
	Sig.(2-tailed)	0.017
	N	220

(n=220); **Correlation is significant at 0.05 level (2-tailed)

The study found a weak positive overall correlation 0.803 which was statistically significant as (P-Value=0.017 < 0.05); implying that there is a significant relationship between Technological exposure and Performance of road construction projects leading to the rejection of the null hypothesis and acceptance of the alternative hypothesis hence the research results conclude that there is significant relationship between Technological exposure and Performance of road construction projects in Kiambu County, Kenya

4.6.4 Model summary of Technological exposure and Performance of road construction projects in Kiambu County, Kenya

The model sought to determine how Technological exposure and Performance of road construction projects. Simple linear regression was adapted to investigate how Technological exposure influences Performance of road construction projects. The regression model summary results are presented in Table 4.14.

Table 4.14 Regression Model Summary Table on Technological exposure and Performance of road construction projects in Kiambu County, Kenya

Model summary					
Model	R	R Square	Adjusted R Square		Std. Error of the Estimate

1	0. 0.720[a]	0.518	0.162	0.47599

c. Predicator: (Constant), Technological exposure

The Model summary Table 4.14 suggest that there is a positive correlation (R^2=0.518) between Technological exposure and Performance of road construction projects and those predicted by the regression model.

Table 4.15 ANOVA Findings

ANOVA

Model		**Sum of Squares**	**Df**	**Mean Squares**	**F**	**Sig.**
1	Regression	3.191	1	3.191	14.062	0.017 [b]
	Residual	49.391	218	0.227		
	Total	49.405	219			

a. Technological exposure and Performance of road construction projects

b. Predictors: (Constant), Technological exposure

The ANOVA data shows that F=14.062, Technological exposure was significant in estimating Performance of road construction projects since p=0.017<0.05. Thus, the model was fit in predicting dependent variable. The coefficient data shows that holding other factors constant, Performance of road construction projects would stand at 3.521. A unit rise in the Technological exposure would lead to 0.391change in Performance of road construction projects, given that other factors were held constant. The substituted model is:

Model: $Y= 3.521+0.391X_1+\varepsilon$ where,

Y = Performance of road construction projects

X_1 Technological exposure

ε = Error term.

Table 4.16 Coefficients Findings

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig (p-value)
		B	Std. Error	Beta		
1	(Constant)	3.521	0.287		12.256	0.000
	Technological exposure	0.391	0.081	0.218	3.749	0.017

Source: Researcher (2024)

b. Independent Variable: Technological exposure

4.6.5 Qualitative Data on Technological exposure and performance of Community health workers programme

It was discovered that Technological exposure and Performance of road construction projects, were related to the answers given to the assertions provided at each variable in the interview guide questions. The qualitative responses are summarized,

> *"There are many people in the community who have no knowledge of technology thus poor or low results in the construction sites. Many people depend on these roads and when it is raining they suffer."*

4.6.6 Discussion on Technological exposure and Performance of road construction projects

The descriptive and correlational data make it clear that there is a relationship between Technological exposure and Performance of road construction projects. The results are consistent with those of other similar empirical studies that suggest identifying adoption barriers and implementation advantages often quantifying the latter to guarantee that the technology is comprehensible to all significant stakeholders the adoption rate is still low (Al-Hammadi and Tian, 2020). Adoption of construction technology tools has numerous advantages (Atkinson et al., 2021). Despite the fact that the majority of advantages are not directly tied to cost savings, an attempt was made to gauge how many hours were saved or spent utilizing

construction technologies. Businesses have begun utilizing the newest technology available (van Wyk et al., 2021). Their problem is determining the value it adds to projects and the general business procedures. Productivity analysis and return on investment are therefore immeasurable prior to or during implementation (Osunsanmi et al., 2020).

4.7.1 Findings on Performance of road construction projects.

It was very vital to investigate on Performance of road construction projects and the findings are indicated in Table 4.10**.**

4.7.2 Descriptive Data Performance of road construction projects in Kiambu County, Kenya

There were six items responded to as indicated on Table 4.10 on Performance of road construction projects in Kiambu County, Kenya.

Table 4.17 Performance of road construction projects in Kiambu County, Kenya

Statements(Performance of road construction projects)	**SD** **%** **F**	**D** **%** **F**	**N** **%** **F**	**A** **%** **F**	**SA** **%** **F**	**Mean**	**Std deviation**
1. The clients are satisfied with road constructed in the area as per their objectives	13 (5.9%)	28 (12.7%)	5 (2.3%)	85 (38.6%)	89 (40.5%)	**3.95**	**1.21**
2. The projects are completed within the timeframe without any delay as per the agreement	24 (10.9%)	109 (49.5%)	14 (6.4%)	60 (27.3%)	13 (5.9%)	**2.68**	**1.15**
3. Many roads have potholes and little has been done by the contractors who are contracted to work on them	15 (6.8%)	22 (10%)	4 (1.8%)	75 (34.1%)	104 (47.3%)	**4.05**	**1.22**
4. Most contractors have less skills and do not take their staff for fresher courses to be able to deal with emerging issues in the modern market	14 (6.4%)	29 (13.2%)	11 (5%)	76 (34.5%)	90 (40.9%)	**3.90**	**1.24**

5. Teams are always ready to take responsibilities whenever they are accorded to do so by their supervisors	14 (6.4%)	15 (6.8%)	11 (5%)	83 (37.7%)	97 (44.1%)	**4.06**	**1.15**
6. Technology applications have made work easier in construction industry	18 (8.2%)	79 (35.9%)	7 (3.2%)	47 (31.4%)	69 (31.4%)	**3.32**	**1.43**
7.Contractors have enough funds to carry out their activities in implementing the projects us required by the clients	60 (27.3%)	92 (41.8%)	25 (11.4%)	22 (10%)	21 (9.5%)	**2.33**	**1.24**
8. Roads are completed in time since most contractors have the right staff who have right skills and knowledgeable to carry out their tasks	10 (4.5%)	24 (10.9%)	7 (3.2%)	88 (40%)	91 (41.4%)	**4.03**	**1.13**
Overall Composite Mean and Std deviation						**3.54**	**1.32**

Source: Researcher (2024)

Based on the findings on Table 10 the statements had the following results the clients are satisfied with road constructed in the area as per their objectives had a mean of 3.95 and standard deviation of 1.21. According to the number of questionnaires given 220 respondents, 13(5.9%) strongly disagreed, 28(12.7%) disagreed, 5(2.3%) neutral, 85(38.6%) agreed while 89(40.5%) strongly agreed. These results show that 3.95 is higher than the composite mean of 3.54. The implication of these findings for the study is that the clients are satisfied with road constructed in the area as per their objectives. The Standard deviation of 1.21 is lower than the composite standard deviation of 1.32 indicating that there was converging opinion among the respondents. In line the statements that the projects are completed within the timeframe without any delay as per the agreement had a mean of 2.68 and standard deviation of 1.15. According to the number of questionnaires given 220 respondents, 24(10.9%) strongly disagreed, 109(49.5%) disagreed, 14(6.4%) neutral, 60(27.3%) agreed while 13(5.9%) strongly agreed. These results show that 2.68 is higher than the composite mean of 3.54. The implication of

these findings for the study is that when projects are completed within the timeframe clients are happy. The Standard deviation of 1.15 is lower than the composite standard deviation of 1.32 indicating that there was converging opinion among the respondents.

Many roads have potholes and little has been done by the contractors who are contracted to work on them had a mean of 4.05 and standard deviation of 1.22. According to the number of questionnaires given 220 respondents, 15(10.9%) strongly disagreed, 22(10%) disagreed, 4(1.8 %) neutral, 75(34.1%) agreed while 104(47.3%) strongly agreed. These results show that 2.68 is higher than the composite mean of 3.54. The implication of these findings for the study is that when roads have potholes vehicles are in danger of being destroyed and loss of economy. The Standard deviation of 1.22 is lower than the composite standard deviation of 1.32 indicating that there was converging opinion among the respondents. Most contractors have less skills and do not take their staff for fresher courses to be able to deal with emerging issues in the modern market had a mean of 3.90 and standard deviation of 1.24. According to the number of questionnaires given 220 respondents, 14(6.4%) strongly disagreed, 29(13.2%) disagreed, 11(5 %) neutral, 76(34.5%) agreed while 90(40.9%) strongly agreed. These results show that 3.90 is higher than the composite mean of 3.54. The implication of these findings for the study is that most contractors have less skills and do not take their staff for fresher courses to be able to deal with emerging issues in the modern market. The Standard deviation of 1.24 is lower than the composite standard deviation of 1.32 indicating that there was converging opinion among the respondents

Teams are always ready to take responsibilities whenever they are accorded to do so by their supervisors had a mean of 4.06 and standard deviation of 1.15. According to the number of questionnaires given 220 respondents, 14(6.4%) strongly disagreed, 15(6.8%) disagreed, 11(5 %) neutral, 83(37.7%) agreed while 97(44.1%) strongly agreed. These results show that 4.06 is higher than the composite mean of 3.54. The implication of these findings for the study

is that most contractors have less skills and do not take their staff for fresher courses to be able to deal with emerging issues in the modern market. The Standard deviation of 1.15 is lower than the composite standard deviation of 1.32 indicating that there was converging opinion among the respondents. Data is stored in data bases where it is easily retrieved and used appropriately had a mean of 3.32 and standard deviation of 1.43. According to the number of questionnaires given 220 respondents, 18(8.2%) strongly disagreed, 79(35.9%) disagreed, 7(3.2 %) neutral, 47(21.4%) agreed while 69(31.4%) strongly agreed. These results show that 3.32 is lower than the composite mean of 3.54. The implication of these findings for the study is that when data is stored in database is easy to retrieve and use as per the requirements. The Standard deviation of 1.43 is higher than the composite standard deviation of 1.32 indicating that there was converging opinion among the respondents.

Contractors have enough funds to carry out their activities in implementing the projects us required by the clients had a mean of 2.33 and standard deviation of 1.24. According to the number of questionnaires given 220 respondents, 60(27.3%) strongly disagreed, 92(41.8%) disagreed, 25(11.4%) neutral, 22(10%) agreed while 21(9.5%) strongly agreed. These results show that 2.33 is lower than the composite mean of 3.54. The implication of these findings for the study is that when contractors deliver their services as required the clients are satisfied. The Standard deviation of 1.24 is lower than the composite standard deviation of 1.32 indicating that there was converging opinion among the respondents. Roads are completed in time since most contractors have the right staff who have right skills and knowledgeable to carry out their tasks had a mean of 4.03 and standard deviation of 1.13. According to the number of questionnaires given 220 respondents, 10(4.5%) strongly disagreed, 24(10.9%) disagreed, 7(3.2%) neutral, 88(40%) agreed while 91(41.4%) strongly agreed. These results show that 4.03 is higher than the composite mean of 3.54. The implication of these findings for the study is that when contractors higher qualified and skilled staff services are rendered as per the

agreement hence quality products. The Standard deviation of 1.33 is higher than the composite standard deviation of 1.32 indicating that there was converging opinion among the respondents.

4.8 Testing for the Study Hypotheses

In testing the hypotheses regarding the influence of various management strategies on performance of road construction projects in Kiambu County, Kenya, , the findings from the regression analysis provide insights into each strategy's impact. These findings are crucial for understanding how leadership styles, team competency and technological exposure contribute to performance of road construction projects in Kiambu County, Kenya.

H_{01}: There is no significant relationship between leadership styles and performance of road construction projects in Kiambu County, Kenya.

Starting with market penetration, the regression coefficient ($\beta 1 = 0.095$) indicated a statistically significant positive relationship ($P = 0.018$) between leadership styles and performance of road construction projects in Kiambu County, Kenya. This finding aligns with empirical literature that emphasizes the positive impact of market penetration on sustainability of the road projects in Kenya (Odhiambo &Paul). For instance, studies have shown a balanced approach, integrating elements of various leadership styles to match situational requirements.

H_{02}: There is no significant relationship between team competency and performance of road construction projects in Kiambu County, Kenya.

Regarding market development, the analysis revealed a coefficient ($\beta 2 = 0.087$) indicating a significant positive influence ($P = 0.009$) on performance of road projects in Kiambu County. This finding supports the idea that expanding market capitalization and presence positively affect financial metrics.

H_{03}: There is no significant relationship between leadership skills and performance of and constructions projects in Kiambu County, Kenya.

Moving to product development, the regression coefficient (β3 = 0.218) showed a highly significant influence (P = 0.000)on performance of constructions projects in Kiambu.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

The results of the data analysis are summarized and given in the current chapter. There are also recommendations and potential areas for further research, as well as inferences drawn from the findings in this chapter.

5.2 Summary of Findings

The findings are hereby summarized based on the research objectives.

5.2.1 leadership styles on performance of road construction projects in Kiambu County, Kenya

The descriptive analysis revealed that the overall composite mean for the six items was 2.78 and standard deviation of 1.27 which implied that most of the respondents agreed that leadership styles influence performance of road construction projects in Kiambu County, Kenya. The correlation coefficient was 0.095 which implied that leadership styles had a weak positive relationship with performance of road construction projects in Kiambu County, Kenya ($p=0.032 <0.05$). This led to the rejection of the null hypothesis because there was strong evidence to conclude that performance of road construction projects in Kiambu County, Kenya.

5.2.2 Team competency influence performance of road construction projects in Kiambu County, Kenya

The descriptive analysis revealed that the overall composite mean for the seven items was 3.58 and standard deviation of 1.19 which implied that most of the respondents agreed that Team competency increased and performance of road construction projects in Kiambu County, Kenya. The correlation coefficient was 0.328 which implied that Team competency had a weak positive relationship with performance of road construction projects in Kiambu County, Kenya ($p=0.000 <0.05$). This led to the rejection of the null hypothesis because there was strong

evidence to conclude that Team competency has a significant influence performance of road construction projects in Kiambu County, Kenya.

5.2.3 Technological exposure influence performance of road construction projects in Kiambu County, Kenya

The descriptive analysis revealed that the overall composite mean for the twelve items was 3.75 and standard deviation of 1.10 which implied that most of the respondents agreed data collection increased and 3. To assess the influence of technological exposure and performance of road construction projects in Kiambu County, Kenya. The correlation coefficient was 0.079 which implied that data collection had a weak positive relationship with performance of road construction projects ($p=0.000 <0.05$). This led to the rejection of the null hypothesis because there was strong evidence to conclude that technological exposure and performance of road construction projects in Kiambu County, Kenya.

5.3 Conclusions from the Findings

In the first objective, the study establishes how leadership styles influence performance of road construction projects in Kiambu County, Kenya. The findings generated from both descriptive and inferential analysis leads to the conclusion that leadership styles influences performance of road construction projects in Kiambu County, Kenya. The second objective, to assess how Team competency influence performance of road construction projects in Kiambu County, Kenya the findings generated from both descriptive and inferential analysis leads to the conclusion that provision Team competency influence performance of road construction projects in Kiambu County, Kenya.

The third objective, to assess how technological exposure influence performance of road construction projects in Kiambu County, Kenya. The findings generated from both descriptive and inferential analysis leads to the conclusion that technological exposure influence performance of road construction projects in Kiambu County, Kenya.

5.4 Recommendations from the Findings

The following recommendations are based from the findings and conclusions of the study.

5.4.1 Recommendation for Practice

Contractors and supervisors need to improve on the practices of leadership styles and satisfy their clients by giving quality products on road construction projects.

5.4.2 Recommendation for Policy

National and local government's needs to formulate policies and laws that govern use road construction projects to avoid delay and low-quality end product.

5.5 Suggestions for Further Study

The current study recommends more studies to be carried out on the areas which were not included in the current study like, planning for M&E, usage of data and data management which are in line with the steps of monitoring and evaluation process.

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APPENDIX I: QUESTIONNAIRE

PART I: Personal and Demographic Data

SECTION ONE

Please complete the following section which asks for information concerning you and your work. Kindly answer all the questions.

1. Gender *(Kindly tick)*: Male ☐ Female ☐
2. Kindly tick your age bracket Age: Below 30 ☐ 30 – 39 ☐ 40 - 49 ☐ 50 - 59 ☐ Above 60 ☐
3. Marital status**:** Single ☐ Married ☐ Other *(kindly specify your status)*:
4. Number of years worked in the Company**:** 5 years and below ☐ 6 – 10 ☐ 16 – 20 ☐ 21 - 25 ☐ 26 - 30 ☐ 31-35 ☐ 36-40 ☐
5. Please select the highest level of educational qualification you hold from below

   Bachelor's degree ☐

   Master's degree ☐

   Diploma ☐

   Certificate ☐

7. Your current designation (Please tick as appropriate).

   Senior Management Staff ☐

   Middle Level Management ☐

   Entry Level ☐

Section A

Leadership styles and Performance of road construction projects in Kiambu County, Kenya

The statements presented below describe leadership styles on performance of road construction projects in Kiambu County. The variable will be measured by the following indicators; frequency of consultative meetings, number of contractor's queries, number of contractors claims addressed and frequency of staff trainings. Please indicate the extent to which you agree

or disagree with the statements on the likert scale by ticking from the boxes i.e. (From 1 to 5); where: 1= Strongly Disagree (SD); 2 = Disagree (D); 3 = Neutral (N); 4 = Agree (A); 5 = Strongly Agree (SA)

Leadership styles and Performance of road construction projects

Statement	**SD(1)**	**D(2)**	**N(3)**	**A(4)**	**SA(5)**
A1. Consultative meetings are frequently addressed so as to help the staff on issues they are not able to work independently					
A2. There so many questions about contractors which are not handled easily due to complexity of the nature of different projects					
A3. Most contractors are able to handle issues that are in their dockets, however those from external environment are not easily handled					
A4. Many contractors arrange trainings and workshops for their staff					
A5. Project managers are taught how to manage teams and assign tasks					
A6.Project supervisors have little or no say to their juniors hence low production					

Section B

Team competency and performance of road construction projects in Kiambu County, Kenya

The statements presented below describe team competency on performance of road construction projects in Kiambu County. The variable will be measured by the following indicators; planning team activities, usage of new techniques, managerial competency and usage of report documents. Please indicate the extent to which you agree or disagree with the statements on the likert scale by ticking from the boxes i.e. (from 1 to 5); where: 1= Strongly Disagree (SD); 2 = Disagree (D); 3 = Neutral (N); 4 = Agree (A); 5 = Strongly Agree (SA)

Team competency and performance of road construction projects

Statement	SD(1)	D(2)	N(3)	A(4)	SA(5)
B1. Proper planning is essential for any project to end up well. So people are consulting one another while planning activities are going on					
B2. New techniques are utilized after thorough trainings have been undertaken					
B3. The project supervisor writes and records reports on schedule and in accordance with the predetermined goals.					
B4. Project reports are created using fundamental data that is retrieved from the database.					
B5. Task delegation and team management are skills taught to project managers and supervisors					
B6. There is minimal production because contractors have little or no influence over their juniors.					

SECTION C

Technological exposure on performance of road construction projects in Kiambu County, Kenya

The statements presented below describe technological exposure on performance of road construction projects in Kiambu County. The variable will be measured by the following indicators; knowledge of software management, knowledge of design techniques, exposure of equipment and machines and safety of data information. Please indicate the extent to which you agree or disagree with the statements on the likert scale by ticking from the boxes i.e. (from 1 to 5); where: 1= Strongly Disagree (SD); 2 = Disagree (D); 3 = Neutral (N); 4 = Agree (A); 5 = Strongly Agree (SA)

Technological exposure on performance of road construction projects

Statement	SD(1)	D(2)	N(3)	A(4)	SA(5)
C1. Very few staff members have knowledge on software management on ICT technology					
C2. When planning for project activities one needs to be conversant with new technology techniques					

C3. Junior staff has the ability to follow instructions as delegated by the seniors					
C4. All the implementing team have exposure with machines and equipment's handled in the construction sites.					
C5. Data is safely stored and used when needed and appropriately in accordance with the set objectives					
C6. Technology applications have made work easier in construction industry					

SECTION D

Performance of road construction projects in Kiambu County, Kenya

The statements presented below describe performance of road construction projects in Kiambu County. The variable will be measured by the following indicators; client satisfaction, projects completed within the timeframe, quality roads constructed, skilled roads and competent staff, data storage management, and completed within stipulated budget. Please indicate the extent to which you agree or disagree with the statements on the likert scale by ticking from the boxes i.e. (from 1 to 5); where: 1= Strongly Disagree (SD); 2 = Disagree (D); 3 = Neutral (N); 4 = Agree (A); 5 = Strongly Agree (SA)

Performance of road construction projects

Statement	**SD(1)**	**D(2)**	**N(3)**	**A(4)**	**SA(5)**
D1. The clients are satisfied with road constructed in the area as per their objectives					
D2. The projects are completed within the timeframe without any delay as per the agreement.					
D3. Many roads have potholes and little has been done by the contractors who are contracted to work on them					
D4. Most contractors have less skills and do not take their staff for fresher courses to be able to deal with emerging issues in the modern market					
D5. Teams are always ready to take responsibilities whenever they are accorded to do so by their supervisors					

D6. Data is stored in data bases where it is easily retrieved and used appropriately					
D7. Contractors have enough funds to carry out their activities in implementing the projects us required by the clients					
D8. Roads are completed in time since most contractors have the right staff who have right skills and knowledgeable to carry out their tasks					

THANK YOU FOR PARTICIPATING

APPENDIX II: INTERVIEW GUIDE

The purpose for conducting interviews is to gather information on performance of road construction projects, leadership styles, team competency, and technological exposure findings on the influence on performance of road construction projects. Information given will be handled with anonymity and also will be deployed for education purposes. Your accuracy and honesty in responding to the research tool is highly treasured and valued.

1. Why is leadership style important in influencing performance of road construction projects?

2. How does your supervisor formulate planning activities on performance of road construction projects?

3. Why do you think competent team members are needed in Kiambu County?

4. How do project supervisors ensure that road construction projects are implemented as planned?

6. What is the effect of new technology usage in road construction projects in Kiambu County?

7. How do coordinators ensure proper communication is done to all teams who are in construction sites?

8. How is resource allocation done so as to avoid biasness of any kind while constructing roads equipment and machines?

9. Which measures has the project managers put to ensure data and information is securely kept to avoid information misuse?

10. How does a client feel when they are handed over good roads upon completion?

THANK YOU FOR PARTICIPATING

APPENDIX III: NACOSTI Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **169892**

Date of Issue: **31/May/2024**

RESEARCH LICENSE



This is to Certify that Ms.. Nelly Gachuri of Africa Nazarene University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Kiambu on the topic: MANAGEMENT STRATEGIES ON PERFORMANCE OF ROAD CONSTRUCTION PROJECTS IN KIAMBU COUNTY KENYA for the period ending : 31/May/2025.

License No: **NACOSTI/P/24/36522**

169892

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR
SCIENCE,TECHNOLOGY &
INNOVATION

Verification QR Code

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

See overleaf for conditions

APPENDIX 1V: AUTHORIZATION LETTER

AFRICA NAZARENE
UNIVERSITY

May 21, 2024

E-mail: researchwriting.mba.anu@gmail.com/ monitoringandevaluation@anu.ac.ke
NACOSTI: registry@nacosti.go.ke Tel. 0202711213

Our Ref: **19S01DMBA005**
The Director,
National Commission for Science,
Technology and Innovation (NACOSTI),
P. O. Box 30623, 00100
Nairobi. Kenya

Dear Sir/Madam:
RE: RESEARCH AUTHORIZATION FOR:ADM 19S01DMBA005

NELLY WAMBUI GACHURI is a postgraduate student of Africa Nazarene University in the Master ARTS IN MONITORING AND EVALUATION (MME) program.
In order to complete her program, Nelly is conducting a research entitled:

MANAGEMENT STRATEGIES ON PERFORMANCE OF ROAD CONSTRUCTION PROJECTS IN KIAMBU COUNTY KENYA

Any assistance offered to her will be highly appreciated.

Yours Faithfully,

Dr. Wanjiru Nderitu

MME, Coordinator,

School of Business,

Africa Nazarene University.

APPENDIX V: MAP OF THE STUDY AREA

