

**FACTORS INFLUENCING PERFORMANCE OF CONTRACTORS IN THE
ROAD CONSTRUCTION SECTOR: CASE OF SELECTED CONTRACTORS IN
KENYA**

BY

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DECLARATION

This research project report is my original work and has not been presented in any other University for the award of a degree.

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DEDICATION

This research project report is dedicated to my wife, Esther Nyabera Matu without whose moral support, understanding, patience, inspiration, and encouragement this work would have been difficult to accomplish. She had to handle some of my duties just to enable me to concentrate on my studies.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACEK	Association of Consulting Engineers in Kenya
AEC	Achieving Excellence in Construction
BNQP	Baldrige National Quality Programme
GDP	Gross Domestic Product
KENHA	Kenya National Highway Authority
KERRA	Kenya Rural Roads Authority
KNBS	Kenya National Bureau of Statistics
KPDA	Kenya Private Developers Association
KURA	Kenya Urban Roads Authority
NACOSTI	National Commission for Science, Technology and Innovation
PAP	Project Affected Persons
RACECA	Road and Civil Engineering Contractors Association
UK	United Kingdom
UNRWA	United Nations Relief and Works Agency
USA	United States of America
VAT	Value Added Tax
WHT	With Holding Tax

ABSTRACT

The purpose of this study was to identify factors influencing performance of contractors in the road sector: case of selected contractors in Kenya. The objectives of the study were to establish the influence of working capital on performance of contractors in the road construction sector, to assess the influence of skilled manpower on performance of contractors in the road construction sector, to examine how organization structure influence performance of contractors in the road construction sector, and to establish the influence of client support on performance of contractors in the road construction sector. The study employed descriptive research design. The target population was 156 respondents which include; 51 selected road contractors, 60 engineers working in road authorities, 5 technical auditors and 40 consultants in the road sector. Stratified sampling technique was employed in coming up with a sample size of 62 respondents. The study relied mostly on primary data sources where self-administered questionnaire were utilized as source of data. The data collected was both qualitative and quantitative. Collected data was coded and entered into Statistical Packages for Social Scientists SPSS Version (21.0) and analyzed using both descriptive and inferential statistics. The findings were presented in form of tables while explanation was presented in prose. The findings were that all the four factors; working capital, skilled manpower, organization structure and client support have influence on performance of contractors in the road sector. It was noted that working capital and organization structure have the highest influence followed by skilled manpower and client support in that order of significance. Less than 25 percent of road projects were completed within the initial contract period. Working capital is critical in ensuring smooth construction operations, skilled man power enable the construction company to achieve overall goals of the company, strong organizational structure offers a comprehensive management plan that is easier to create and execute, client support, which include prompt payments and approvals, stakeholder involvement, early land acquisition, helped to curb project delays, cost overruns, stalling and/ or abandonment. The conclusion is that availability of working capital, skilled manpower, organization structure and client support all had a positive influence on performance of contractors in the road construction sector. Contractors need to have a reliable working capital base. The recommendations for improvement in working capital include; contractors to form public private partnerships with financiers and government who may be willing to finance major road construction projects, legislation be put in place to ensure clear timelines for payments and spell out penalties for default and establishment of a bank for construction industry. Other recommendations include training and skill up-gradation within construction firms and establishment of more middle level technical colleges in order to improve availability of skilled manpower. Construction firms also need to have a flexible dynamic organizational structure as existence of strong organizational structure was found to be the core from which the successful implementation of road construction projects was founded, client support in form of prompt payments and approvals, involvement of stakeholders, early land acquisition and project coordination are necessary to ensure enhanced performance of contractors in the road sector to ensure timely, cost effective and quality completion of road projects.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Infrastructure can be a path of transformation in addressing some of the majority of regular development challenges of today's world: social stability, swift urbanization, environmental change including natural disasters. World Bank (2011) observes that without an infrastructure that facilitates green and inclusive expansion, countries will not only be in a difficult situation to meet fundamental needs, but will struggle to get competitive. FIDIC (2006) report point out inability to achieve suitable standard in construction is a major problem worldwide. The role of the sector is very significant owing to its productivity and due to the accomplishment of socio-economic objectives like shelter, infrastructure and employment opportunities (Usman et al., 2012). The essential role played by the construction industry cannot be overemphasized as it is apparent that the activities of the industry affect almost every part of the economy accountable for about 16.0% of (GDP) and employ about 25.0% of labor force in Nigeria, (Ayangade et al., 2009).

The industry is multifaceted in its nature because it is executed by large number of parties such as clients, regulators, contractors, stakeholders, and consultants (Dadzie et al, 2012). It is one of the most unbalanced sectors within the wealth of the world. It faces unpredictable demand cycles, project-specific demands, uncertain circumstances, and it combines with several factors. In this sector, contractors play a very central role and the success of projects is mainly dependent on the performance of contractors.

The problems affecting Ghanaian contractors and consultants were researched by Ofori (2012) and found that challenges are the same as those noted generally in reports on construction industries in other third world countries. The challenges identified by Ofori (2012) as particularly influencing the performance of Ghanaian contractors include lack of ability to obtain adequate working capital, insufficient organization, inadequate engineering competence and poor workmanship. Other challenges include an extremely unstable business environment (Dansoh, 2005) characterized by high inflationary trends, poor organization practices and weak organization structures (Vulink, 2004). Difficulties

in accessing project finance also affect the performance of Ghanaian contractors (Badu et al., 2012).

Similar challenges affect the construction sector in Kenya. A report on challenges facing Kenya construction industry in May, 2011, by Kenya Private Developers Association (KPKDA) singled out capital as one of the main challenges facing contractors in the construction sector coupled with complacency among construction companies as they tend to settle for what they have attained. Pending payment from the implementing agencies and clients, poor leadership and organization of construction firms, complex payment processes, and poor access to credit, inefficient procurement system, shortage of skilled manpower unfair competition with foreign contractors, inadequate work, fraud and bribery, archaic technology and insufficient contract supervision. Others include poor project planning, contract variations and politics.

In Kenya, vision 2030 identifies infrastructure development as one of the very crucial pillars to economic growth. Vision 2030 aspires for a country firmly interconnected through a network of roads, railways, ports, airports, water and sanitation facilities, and telecommunications (African Development Bank, 2009). The goal of the government is to ensure that by the year 2030 it will become impossible to refer to any region of the country as remote. For this reason Kenya has invested heavily in infrastructure according to the Road Sector Investment Plan 2010-2024. The construction industry in Kenya contributes 7 percent of the gross domestic product (GDP) (CBS, 2013). The Kenya construction industry rose by 5.8% in 2013 and 13.1% in 2014 according to figures from Kenya National Bureau of Statistics (KNBS). The Kenyan construction and infrastructure sector is anticipating a growth of 9% year-on-year in 2015 according to Kenya Infrastructure Report Quarter three released by Business Monitor International. The growth in the sector is expected to remain over a 10 year forecast period up to 2024. The economic survey 2015 attributed the double-digit expansion to steady growth in property development, including the ongoing construction of mega projects. The building and construction sector contributed 4.8% of Kenyan's GDP, and the construction industry is expected to sustain its strong growth since the country plans to roll out several big dollar projects such as the 10,000 kilometers road annuity project, phase 2 of the standard gauge railway, construction of Lamu port among others.

Despite the importance, economic and social value of reliable and efficient infrastructure, many projects in Kenya have experienced delays in timely completion. Nyika (2012) noted that only 20.8 per cent of the projects in Kenya were implemented on time and budget, while 79.2 per cent exhibited some form of failure. According to the study the major causes of failures were insufficient implementing capacity, poor project management, weak project design and political interference. In order to sustainably implement infrastructure projects, it is necessary that the construction industry to build sufficient capacity to undertake the projects to ensure timely, quality and cost effective implementation of these development projects.

This research aims to propose a course of action by which clients involved in construction projects perceive what affects performance of contractors in the road sector and thus come up with policies that ensure growth and strengthening of the contractors to undertake future projects in a timely and cost-effective manner. Factors affecting positively and negatively on views on performance of contractors could be easily established by considering the various views on this subject by contractors, consultants, and owners of projects.

1.2 Statement of the problem

The responsibility of achieving success in the implementation of a construction project largely depends on the contractor's performance. However, it has become a global trend that contractors are not performing to the expectations of the clients that they serve and indeed many road contractors have failed in performance. Delays in project completion and poor performance in the construction industry have been experienced and have led to failure in achieving effective time and cost performance (Aftab, 2012). The performance of the participants involved and the product output is dependent on the promptness and regularity of payment (Ramachandra, 2013). Tawil (2013) observed that in Malaysia delay is a common occurrence particularly where government projects are concerned. Three of the most critical factors noted in Malaysia are fluctuation in cost of materials, cash flow and financial difficulties faced by contractors, poor site management and supervision (Rahman, 2013). Ramachandra (2013) suggests that failure to pay in the construction industry may be put in three categories; delay in paying one or more certificates, reduction in value of certificates or invoices, and not paying at all. In Kenya,

Nyika (2012) noted in a study that only 20.8 per cent of the projects were implemented on time and budget, while 79.2 per cent exhibited some form of failure. The major causes of failures were insufficient implementing capacity, poor project management, weak project design and political interference. Therefore, factors influencing performance of contractors are very critical to any construction firm. There have been several studies carried out on the factors influencing completion or delivery of road construction projects, however none has carried out a specific study focusing on factors influencing performance of road contractors: case of selected contractors in Kenya as a nationwide survey.

Thus, this study aims to bridge this knowledgeable gap by evaluating factors influencing performance of contractors in the road construction sector: case of selected contractors in Kenya

1.3 Purpose of the Study

The purpose of the study was to explore factors influencing performance of contractors in the road construction sector in Kenya.

1.4 Research Objectives

The study was based on the following objectives;

- i. To establish the influence of working capital on performance of contractors in the road construction sector.
- ii. To assess the influence of skilled man power on performance of contractors in the road construction sector
- iii. To examine how organization structure influence performance of contractors in the road construction sector.
- iv. To establish the influence client support on performance of contractors in the road construction sector.

1.5 Research Questions

The study was guided by the following questions;

- i. To what extent does working capital influence performance of road contractors in Kenya?

- ii. To what extent does skilled manpower influence the performance of road contractors in Kenya?
- iii. To what extent does organization structure influence performance of road contractors in Kenya?
- iv. To what extent does client support influence performance of road contractors in Kenya?

1.6 Significance of the Study

The output of this study could contribute to the understanding of the critical challenges contractors are facing that inhibit their performance on projects in the road sector in Kenya and other developing countries. The findings may be used by government to provide the necessary incentives and regulations to ensure sustainable growth, capacity building and policy framework to regulate the construction industry toward achieving millennium goal such as Vision 2030. The outcome of the study may be useful to the contractors in providing an in-depth perceptive of the factors that inhibit their performance and therefore ensure that they improve in the organization of their finances and employ competent skilled manpower in order to improve on their profitability and reputation. The study may be useful for construction supervision consultants who may comprehend how their services impact performance of contractors in the road sector.

The result of the research could be vital to other researches involved in formulation of policy and will provide academicians with further data and information of factors influencing performance of contractors particularly in the road sector. The study may also make numerous contributions to literature on factors influencing performance of contractors in the road construction sector. The study can be merged with others done in other nations for comparison of factors affecting performance of contractors in the road sector in order to facilitate worldwide exploration on strategy to improve performance of contractor.

1.7 Delimitation of the Study

This research study sought to determine factors that influence the performance of selected contractors in Kenya roads sector. Among the factors that are being looked into are: working capital, skilled manpower, organization structure and client support. The study

interviewed representatives from the road authorities (KENHA, KERRA and KURA), contractors (project managers) who are registered with RACECA, consultant (Supervising engineers) who handle design and construction of roads and are registered with ACEK, and technical auditors participating in road construction projects. In the road authorities the engineers working in the department of Design and Construction were targeted. It is noteworthy that all these engineers are involved in the road sector covering the whole country although they have their headquarters in Nairobi.

1.8 Limitation of the Study

Due to limitation of resources and time the study was limited to selected contractors in road construction sector in Kenya although there are many contractors involved in other infrastructural projects in the country.

1.9 Assumptions of the Study

It assumed that the respondents would be frank, obliging, truthful and dependable in their response to the research instruments and would be accessible to respond to the research instruments in time. It is also assumption that the management of the organizations targeted would give permission to collect data from employees. It was also assumed that there would be no major changes in the composition of the target population that would affect the effectiveness of the study sample.

1.10 Definitions of Significant Terms

Working Capital: Financial capability of a contractor to finance road construction project in terms of purchase of construction equipment, payment of employees and have adequate credit lines to ensure smooth implementation of the road construction project from own resources.

Contractor: An independent entity that agrees to furnish certain number or quantity of goods, material, equipment, personnel, and/or services that meet or exceed stated requirements or specifications, at a mutually agreed upon price and within a specified timeframe to another independent entity called contractee, principal, or project owner.

Skilled manpower: Refers to availability of employees with capabilities, knowledge, skills and experience relevant to implementation of road construction projects.

Organization Structure: How tasks are divided allocated and coordinated among the individuals in the construction process.

Client support: Refers to government support to the implementation of road construction projects which includes: budget allocation, prompt approvals, stakeholder involvement, payment to contractors, and project organization.

Performance of contractor: The accomplishment of a given task measured against preset known standards of accuracy, completeness, cost and speed. In a contract, performance of a contractor is deemed to be fulfillment of an obligation in a manner that releases the contractor from all liabilities under the contract.

1.11 Organization of the Study

The research is organized into five chapters. Chapter one contains the introduction to the research, statement of problem, study objectives, research questions, significance of the study, limitations and delimitations of the study including the assumption of the study and definitions of significant terms. In chapter two literature review is presented on the various aspects concerning performance of road contractors: working capital and performance of road contractors, human capital and performance of road contractors, organization structure and performance of road contractors, client support and performance of road contractors. In chapter three the following topics are illustrated; research design, study population, sample and sampling procedure, data collection and data collection procedures, validity and reliability of research instruments and data analysis techniques. In chapter four the following topics are captured; data collection, analysis, presentation and interpretations. In chapter five the following topics are outlined; the summary of findings, conclusion and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter analyses past literature on factors influencing performance in the construction sector with particular focus on factors influencing performance of road contractors. Some of the key concepts used in the research are highlighted including some theoretical contributions from literature. A literature review helps in the development of understanding of the previous research that has been done relating to the objectives, aims and helps in the refinement of the ideas to which the research will be built. The Literature review was obtained from Secondary sources; relevant magazines and journals, institutional research publications and reports, financial text books, government publications and projects among others.

2.2 Concept of Performance

The performance definitions reviewed in this paper articulate the concept in achieving and accomplishing the planned targets. For instance, BNQP (2009) defines performance as “outputs and outcomes from processes, products and services that allow assessment and comparison relative to set goals, standards, past results, and other specifications”. For a long time, performance assessment has remained a problem for the construction industry. Various concepts and measures have been experimented to assess and measure performance of projects. Alarcon (1994) observed that most of these measures inhibit their assessment to preferred standards such as, time, cost or output. Contractors are required to evaluate performance and upgrade strategies to gain competitive advantage. To lift competitiveness, construction firms have to utilize performance evaluation mechanism to ensure sustainable performance.

Rose (1995) observed that performance measurement is the expression of progress. Expansion in business cannot be achieved if its performance is not evaluated, (Baldwin et al., 2001). Performance measurement is described by Neely (1998) as the method of evaluating previous activities to ascertain present performance.

Contractor performance is defined as a factor of; time, sustainable development, quality and construction cost, the idea being that the attainment of one facet of performance must

not be at the cost of another (Hong & Proverbs, 2003). From the perspective of Poon (2003) the primary gauge of the performance of contractors is the contentment of clients. Poor performance, shown by substandard quality of work and low production, is widespread in construction projects. Other challenges linked with inadequate performance include; poor work ethics and miscommunication among stakeholders, late completion, cost increase, very high accident occurrences, and inconsiderateness to ecological issues (Allens, 1994; Henry, 1994; Lobelo, 1996).

2.2.1 Contractor Performance

Exchange of something of value by two or more parties' means that they enter into a legally binding agreement between them which is called a contract. Construction is viewed as an industry that public economy relies, (Ejaz et al., 2013). Construction contracts cause mutually contractual and legal commitments on partners that are hard to modify based on fiscal exchanges (Thomas & Ellis, 2007). The client employs the services of a construction firm to execute a contract in order to deliver a project on agreed timeline. Kulatunga et al (2005) propose that contractors have to gauge their performance to get a reasonable market share. Concerning the factors in performance of contractor, Akinci and Fischer (1998) noted that increase in cost make a major monetary risk for clients and construction firms. Cost-effective expansion and the competitive environment of the construction sector has required construction firms to trim down their mark-ups to continue thriving (Grogan, 1995). The connection between employers and their consultants' calls for an evaluation process that is price-based, as Tao and Kumaraswamy (2012) noted. Even then, the least offer frequently results to challenges such as substandard quality, cost increase, including lateness. This generally bring about massive contractual and fiscal challenges among parties, as evidenced by Palaneeswaran et al (2007).

Clients and owners also influence project performance. In construction, the requirement to improve is necessary since clients need better value from their projects, and contractors require good profits to guarantee their long-term future (Egan, 1998). Improved performance of contractor lead to better client satisfaction, reputation, and competitiveness (Xiao & David, 2003).

Many researchers have conducted detailed investigations performance. Hatami and Behsan (2012) found that contractors are more tolerant of risks that are included in contracts than of additional types of risk. Assaf et al (1996) researched on contractor performance in Saudi Arabia, focusing on the nature of each project, the contractor's extent of involvement, and how that affects contractor performance. Abbasnejad and Moud (2013) noted that most projects in Iran suffer from delays, causing serious problems to contractors, and that these problems were intolerable and acutely affect contractor performance, which vary among nations (Proverbs, 1998).

A research done in Jordan, (Rateb et al, 2014) investigated the factors affecting contractors' performance on public construction projects. In this investigation, contractors, consultants, and owners agreed on the most important factors affecting contractor .First among these important performance factors are contractors' financial difficulties, shortage of manpower, and too many change orders. These outcomes agree with the results of research conducted in a three-year study of contractor performance in Japan, the UK, and the USA by Xiao and Proverbs (2003).

In developing countries several researches have also been carried out concerning contractor performance, for example, a study in Ghana found widespread failures in meeting performance milestones in the construction sector. In several occasions, contractors were held responsible for poor performances and criticized for having limited technical expertise in the use of necessary organization techniques. Small and large contractors in Ghana find it difficult to access funds (Badu et al., 2012). Pending bills for executed tasks is extensive and is the chief reason of incomplete projects (Adams, 2008). In spite of major achievements in performance enhancement in the construction firms of industrialized nations, the construction sector in Ghana cannot be compared (Ofori et al., 2012). Ghanaian contractors are perceived to be below performance and construction of several mega projects are implemented by non-citizen contractors (Tawiah, 1999).

2.3 Working Capital and Contractor Performance

According to Harris and McCaffer (2005), the contractor's working capital or finance is the resource he requires to smooth the progress of implementation of the construction work on site. It is made up of money at hand, bank credit, overdraft, credit purchases, and work-in-progress and invoiced amount. Working capital also includes resources needed to

grease the daily business of the construction firm. Pilcher (1992) defined working capital as the difference between current assets and current liabilities. Working capital requirements, its composition and use, changes as progress of construction work is achieved. Akinsulire (2002) compared blood which flows continuously in a human body to working capital, which is required to flow throughout the construction period.

The management of working capital includes planning, sourcing, and controlling the use of working capital during construction. The sufficiency of working capital depends on the correct composition and correct financing at all times during construction. Nwude (2010) observed that it requires a determined positive effort by the contractor as mismanagement can weaken productivity and profit level. Management of working capital is very critical. To ensure that the level of working capital is maintained and that there is sufficient provision of funds to finance current assets to facilitate projects to be project completion within cost and time, there is need of establishing the optimum level of working capital needs of a project. Further there is need of continuous checking and monitoring the quantum of individual parts that comprise the working capital to ensure that the requirements are not exceeded.

Awards of major construction contracts in developing countries are skewed in favour of foreign counterparts against citizen contractors since the foreign firms are considered more technically and managerially advanced and well-organized in funds acquirement including competence. In comparison with this, citizen contractors have over the years had challenges related to inadequate working capital, poor project performance in terms of adhering to completion deadlines, poor work quality and capital management which has in many cases led to bankruptcy and in extreme cases, abandonment of projects. In other words, majority of citizen contractors usually do not complete construction contracts within initial contract sums and hardly within scheduled completion times. Ogbebor (2002), Oseni (2002) and Akintude (2003) in their studies in the Nigerian construction industry confirmed that indigenous construction companies have challenges of under-capitalization.

To ensure successful project execution there must be adequate working capital. Rahman (2013) observed that monetary strength of contractors and sufficient cash flow is critical in keeping construction progress as planned. Ameh (2011) observed that inadequate funds

lead to time overrun and sufficient funding guarantees reasonable cash flow. Kenyatta et al (2015) carried out a study on influence of payment default to contractors in the Kenyan construction industry and found that late payment of one or several certificates, underpayment or paying intermittently and nonpayment have led to cash flow hardships to contractors. This has led to late completion of projects, disputes in construction and even bankruptcy. The study recommended industry players to consider legislating on a payment specific regime just like it has happened in other countries. Others factors noted by many other studies which have been eroding working capital during construction include; access to credits, diversion of contract funds for other use as opposed to the project, poor project planning and control, foreign exchange fluctuations, and high cost of finance.

2.4 Skilled Manpower and Contractor Performance

Individuals who are knowledgeable about specific construction skills gained from training or from practical experience in construction can be defined as skilled manpower (Medugu et al, 2011). Rafee (2012) noted that skilled manpower in the construction industry play a very critical function to the survival and growth of the sector as they are directly involved in construction process. In Kenya there is an acute shortage of skilled manpower despite the many construction projects that the government is undertaking. Elevation of middle-level colleges to universities has further eroded the development of skilled manpower creating a major shortage of skilled manpower.

Wang (2010) indicated in his report that labour shortage is a problem faced by many countries all over the world. In the construction industry framework, the purchasing power of the end user results quality work production. Hence, additional skilled workforce is needed. Medugu et al (2011) observed that where highly capable workforce is utilized, the effect of skilled manpower in the construction sector is very visible in it ends products. This is because they are directly involved in early realization of construction projects completion since they handle the technical phase of such contract. Reduction in poor quality, low productivity, late project completion, cost and time overruns in projects is notable where trained skilled manpower is involved. Abiola (2004) believe that rework of defective or unsatisfactory work is mostly attributed to poor level of workmanship which normally results from involvement of unskilled manpower.

Skilled manpower also helps to raise efficiency, decrease of accidents, less management, increased organization stability. Trendle (2008) stated that there are several causes of labour shortages; increases in the demand for labour arising from continuing infrastructural expansion.

Hanim (2010) observed recruitment costs of foreign labour is high owing to payment for the tax, health check, security bond and medical costs leading to labour shortage in Malaysia. Sweis et al (2008) also indicated that shortage of manpower including skilled, semi-skilled and unskilled labour causes delays in construction projects. This is further endorsed by Sambasivan and Yau (2007) who carried out a research in Malaysia and established that labour supply is ranked number seven out of twenty eight causes of construction delay. It indicates that labour supply is the chief cause of delay in the construction industry in Malaysia.

The effect of availability of skilled manpower has been adequately reported in the literature with the ever rising pressure on construction contractors to execute projects of high quality, cost and on time (Medugu, 2011). The significance of more skilled manpower in the industry cannot be ignored as they have the possibility of reducing inefficiencies owing to poorly constructed projects. Bustani (2000) concluded that quality and availability of skilled labor force is considered a vital factor in the effectiveness of the construction sector. The problem of shortage of skilled manpower is a serious threat to the economic wellbeing of many nations around the world. Medugu et al (2011) mentioned that shortage of skilled manpower has effect on many areas of construction activities and affect time, cost and quality of work. He noted that the shortage could adversely affect the realization of financial wealth for which such projects are planned. According to Dantong et al (2011), shortage of skilled manpower is not a shortage of workers; rather it is a shortage of sufficiently trained, skilled, and industrious workers available for particular type of work. Attar et al (2012) enumerated reasons attributed for shortage of skilled manpower as; lack of training and retraining, an aging labor force, and an industry that does not attract youth as potential manpower. Bustani (2011) pointed out that the quality and availability of skilled manpower is considered vital factor towards the efficacy of the construction sector. Reasons credited for shortages includes; aging of skilled manpower in the industry, reduction in the number of new entrants into skilled

trades, poor financial support and ineffective state of professional education and training / retraining scheme in the country.

To sustain economic expansion and growth training for capacity building is crucial since human capital is the most precious asset of any contractor (Long et al., 2012a: Long et al., 2012b). Most contractors focus on the financial gains while, somehow, forgetting those who are really contributing to production of work and profit. Dantong (2007) observes that these are among the numerous problems of manpower training as most contractors in Nigeria rarely bother about training of their workers. Onuka et al (2012) claims that lack of manpower training and re-training programme in construction firms often results in lack of skill, lack of productivity and ineffectiveness. It follows therefore that without a training policy provided by contractors these problems will be imminent. In that study it is recommended that training and manpower development should be viewed as necessary ingredients that assist to improve the outdated nature of the construction industry in to a current construction industry through upgrading of workers and manpower development.

Labour is a major component of construction work in Nigeria. Unlike in developed economies such as the UK, USA and Germany where operations on construction sites are highly mechanized, construction work in developing countries and in particular Kenya, are still labour intensive. This agrees with a study carried out by Alinaitwe et al (2007) which ranked incompetent supervisors and lack of skills of the workers as the two most significant causes of low productivity of construction workers in developing countries. From several researches conducted in the developing countries on shortage of skilled labour the following factors were deemed to affect availability of skilled manpower in the construction industry of most developing countries; high labour turnover, lack of appreciation function of manpower development, low level of education, lack of training programme and high cost of training programmes.

2.5 Organization Structure and Contractor Performance

Kenya construction industry is under pressure to get better productivity, reduce wastage of resources and to enhance certainty of its performance. Contractors should have the competence to utilize scientific and technological understanding of integrating diverse group contributors in an orderly manner. Individual efforts should be harmonized and compounded in the best means possible to achieve the objective of the company. Wolf

(2002) observed that efficient organization structure has a positive impact in the implementation culture of a firm, it guides the firm's productivity, including performance process. Clemmer (2003) was of the opinion that organizational structure improves performance. Communication between staff of an organization is improved and lead to better performance of contractors. Walton (1986) associated structure to effectiveness, noting that organization restructuring is designed to boost not only the competence but also the productivity of the construction firm. Poor organization structure of many construction firms in the developing countries have contributed to low production of work and generally poor performance of the contractors. Organizations of both client and contractors should be well designed to alleviate these organization challenges. Task responsibility and decision making is given to individuals members and teams and arrangements are made to plan, direct, organize and control them (Armstrong & Stephens, 2008). Their organization structures must provide the frame in which organization processes achieve the best chance of achieving maximum performance in the interest of firms objective hence performance of construction industry.

Mintzberg (1983) states that organization structure defines how individuals and groups are organized or how their tasks are divided and coordinated. He defines the organization structure as the sum of total in which its labour is divided into distinct tasks and then its coordination is achieved among these tasks. Task allocation should be carried out efficiently in order to improve contractor productivity. Ubani (2012) stated that organization structure is the framework adopted to manage the various activities of a construction project or other activities of an organization.

A suitable organization structure assists the project organization team to achieve high performance in the project through gains in efficiency and effectiveness. This is supported by a study done Maduenyi (2015) on impact of organization structure on organizational performance. Coordination among departmental heads in a construction firm improve firm productivity According to Tran and Tian (2013), regarding the purpose of the organization's beginning, they can be described as doing well (profitable) or not a success (non- profitable) ones. To attain these goals organizations generate inner order and relations between organizational parts that can be described as organization structure.

In an organization the manager establishes the schedule of activities to get the job completed, prepares job descriptions, and organizes staff into teams and allocates them to supervisors (Ganesh, 2013). He fixes schedules and establishes standards of performance. Defined work plans assist organization processes in achieving maximum performance in the interest of firm's objective hence performance of construction industry. Winfred (2011) reports that an appropriate managerial structure could support teams in management in attaining enhanced performance in the project by increasing in productivity. Individual members including teams should be involved in decision making enabling specific project objectives to be achieved at the end of each project. Yinghui and Cheng (2004) studied the impact of organizational structure on project performance which was limited to the construction site. Poor performance has been attributed to lack of proper coordination among staffs in road construction contracts.

2.6 Client Support and Contractor Performance

Latham (1994) maintains that clients have a substantial role to play in setting demanding standards and insisting upon improvements. The Business Round Table (1994) maintains that cost effectiveness has been enhanced when clients have exercised leadership and when there has been client/contractor co-operation. Client support includes the implementation of the role that a client is expected to play to ensure timely and cost effective completion of road projects which has a bearing on performance of contractors. Such roles include but are not limited to; provision of accurate project designs, budget allocation and prompt payments of interim progress payments, prompt issue of instructions to commence the construction work, prompt approvals of variations to the contract, early land acquisition of areas required for the construction of roads, ensuring stakeholder involvement, project supervision to ensure quality including achievement of value for money and timely taking over inspection and certification of works once project is completed.

To improve cost effectiveness requires clients to budget for the project as one of their main roles. The impact of design on contractor performance is universally acknowledged. Effective organization of the design process is crucial for the success of projects. This includes, among others, the development of an accurate design brief to confirm client requirements and integration of the work of designers, variations, which result in out of

order operations (Lathan, 2004). Generally, construction projects will present several instances which bring about variations.

One of the most important client support role is the payment for work done by a contractor in a project initiated by the client. Both Siti and Rosli (2010) illustrate payments in the construction industry as “a monetary consideration for the contractors’ performance for work done”. According to Kenyatta et al (2015) cash flow is undoubtedly the bloodline that drives projects in the construction industry. Any obstruction in its smooth flow may therefore lead to severe outcome. The conclusion of their study was that, non-payment to contractors in the form of late payments of one or more certificates, underpayment, intermittent payments and non-payment have resulted to cash flow challenges to contractors, late completion of projects, construction disputes and even liquidation. Kenyatta et al (2015) reviewed the case of Kundan Singh Construction International Limited bank of Africa Kenya Ltd, (2015) and another where the contractor borrowed project funds from commercial banks on the strength of the awarded contracts from the government. The contractor went in liquidation due to failure of the client to pay. Dissanayaka and Kumaran (1999) noted that the cost of providing adequate financing can be quite large and therefore governments or owners of projects should allocate more budgets to project to enable its completion since it cannot continue with inadequate financing, and would affect performance of contractors to meet planned targets.

Accurate project design is critical in project execution as it eliminates the need to vary the contract. The government is also responsible for approval of the project which facilitates contractor performance. The government approves the cost, the design and the different phases of the project being implemented. This also affects the project construction period. Variations in the scope of project naturally increase the cost of project and normally lead to both cost and time overruns. When the scope increases it requires the client to budget for the extra cost of increased work. This in itself has the potential to cause disputes, arbitration costs, litigation and project abandonment and claims on prolongation costs which lead to distortion of project budgets. Insufficient support causes project costs overrun.

Tran and Carmichael (2013) concluded that late and intermittent payments and/ or non-payments can critically affect performance of contractors. Fleming and Koppelman (2008), Ramachandra (2013), Uff (2009), Ansah (2011) and Ashworth (2012) observed that the character and the diverse types of contractual payments that might be delayed or defaulted by the employer may additionally be classified as interim, stage or milestone, advance payments, payment of retention monies and final payments. These factors influence contractor performance mainly in the road sector where the majority of the projects are financed by the government as the client. Kenya is undergoing infrastructural development where many construction activities are being carried out across the nation by the central and county governments as the major clients of construction activities. Excess time extra and additional cost on projects is prevalent on road projects which lead to poor performance of contractors. The government of Kenya has been increasing road construction budget since 2003, but unfortunately the issue of pending bills continue to plague the sector and it has not been possible to implement projects within the allocated budget. Anecdotal evidence in Kenya from newspaper reports and industry commentators seems to indicate that many contractors are facing insurmountable challenges as a result of late or non payment default (Africa Building, 2013). From other research studies, the results indicated there was insufficient funding, while others indicated that there was intermittent funding while a little percentage indicated that there was sufficient funding. This implies that construction projects were poorly funded. On a similar note, it was reported in one of the local dailies, that the government owed contractors 19.39 billion shillings in pending bills (Business Daily, 2013).

Kenya has inadequate financial resources and therefore, unpaid bills to contractors are the core of challenges within the construction industry which leads to major projects delays. In 7 out the 33 cases evaluated, it was found out that failure for client to clear up payment according to agreed contractual timelines resulted in some form of financial constraints on the part of the contractor. A review of the critical challenges faced by Kenyan contractors by (ProInvest, 2011), noted that payments were delayed for more than 5 years from government clients with very high likelihood of going out of business due to late payments. Cash flow problems may drive a contractor into bankruptcy with the penalty of abandonment of the project work (Uff, 2009).

A related but separate survey in Ghana seems to confirm this view, where financial difficulties was ranked among the top three most probable effects of late payments to contractors (Ansah, 2011). While in Malaysia it was likewise reported that financial difficulties arising from late payments were top among the three most severe effects of late and non-payments, (Danuri, et al., 2006).

Prompt issue of instructions to contractors to commence the works is considered vital to facilitate implementation of construction works within the market prices at the time of tendering. Client delays in the issue of instructions to commence the works puts the contract to fluctuation in the cost of materials and labour which have an effect on the total cost of project. This eventually influences performance of contractors due to the need for additional unforeseen resources. Fluctuations in prices can be brought about by changes in legislation of a country or depreciation of currency in use and also inflation among other factors.

For a project to commence and progress as planned there is a need for contractors to be given maximum support, for example, possession of land for the construction without any encumbrances. This means that the required land must be acquired at the early stages of the project cycle and the land should be free of any structures, service line and any developments that could impede immediate commencement of the construction work. The process of land acquisition in Kenya is both challenging in terms of the process as well the cost of the land. The Constitution of Kenya 2010 requires the project affected persons to be compensated in terms of payment before the government takes possession of their land. This has presented severe challenges to the implementation of projects and has caused serious delays to completion of projects in view of the fact that land has become very expensive and the government does not budget adequately for the compensation payments. Failure to get possession of land has meant that contractors have to wait for inordinate periods without adequate activity and use of equipment which remain idle heavy cost implications to them causing them to perform poorly on the project.

Supervision and/or management of road projects is an important client support role without which the Value For Money (VFM) cannot be assured. This includes checking of work quality according to the required standards and specifications and approval of

various activities and materials as construction progresses. This role by the client can be undertaken in house by the client or outsourced to private consultants depending on the complexity of the construction or inadequate capacity of the client. Poor supervision or project management leads to overrun in cost and completion time of projects which directly impacts performance of contractor.

Mbaabu (2012) observed that stakeholders' involvement is paramount in development projects. Stakeholders' involvement aids in smooth project implementation. He opined that stakeholder participation is warranted when decisions on complex situation with far-reaching impacts on the project area are to be made by clients. The stakeholder participation should be done proactively, rather than in response to a problem to avoid unforeseen problems. It is the client's responsibility to involve the stakeholders in good time to avoid delays in the project. The stakeholders could include the community where the project road is being constructed, agencies providing water, electricity, and communication systems, national and rural roads including county governments. According to him concentration of public consultation is about gathering and giving out information to, members of the project affected persons. According to Mbaabu (2012), The Constitution of Kenya (2010) empowers citizens with the right to participate in matters that affect their lives. If stakeholder participation is not handled appropriately it could have serious impact in performance of contractor.

2.7 Theoretical Framework- Stakeholder theory

The stakeholder Theory was originally published by R. Edward Freeman in 1984 in the book Strategic Management: A stakeholder Approach which identifies and models the groups which are stakeholders of a corporation. Interest in stakeholder's theory has since grown considerably. This study is based on stakeholder's theory which, as a field of research, has tended to focus on planning and managing the complex array of activities required for delivering a construction project, such as a road or building. The number of opinions on the subject has increased considerably (Friedman & Miles, 2002). Some attempts at harmonization of dissimilar opinions were made, the summary by Jones (1995) acknowledged extensively. The theory has its genesis in strategic organization, and has been applied in several areas of enquiry as well in corporate social responsibility

(Hillman & Keim, 2001) including on construction project organization lately (Bourne & Walker, 2005).

Construction business, as an area of study, tends to focus on scheduling and organizing the multifaceted assortment of activities necessary to complete a construction project. Being able to manage construction stakeholder's hopes and concerns is a critical skill for managers of construction projects. Failure to tackle hopes and concerns of stakeholders in a construction project has resulted in innumerable failure of projects (Bourne & Walker, 2005) principally for the reason that stakeholders in construction have a tendency to obtain resources and ability to impede construction projects (Lim et al, 2005). Meeting the expectation of stakeholder is critical to successful execution of construction projects stakeholders include, owners of project, , consultants, subcontractors, suppliers, funding bodies, users, owners, employees and project managers. As a consequence a vigorous construction organization literature has developed on how to recognize and manage stakeholder welfare and interactions. This study used stakeholder theory to scrutinize factors influencing performance of contractors in the road construction sector: case of selected road contractors in Kenya.

2.8 Conceptual Framework

The Conceptual Framework gives a depiction on how the variable relates to each other. The variable distinct here is the independent, dependent and moderating variable. Independent variable affects and determines the effect of another variable. The independent variables in this study are working capital, skilled manpower, organization structure and client support. The dependent variable is contractor performance in the road Sector. The moderating variable is measured and manipulated to discover whether or not it modifies the relationship between the independent variable and dependent variable. Government policies and construction laws are identified as moderating variables. Performance of contractors could be researched and examined by means of many indicators of performance, articulated by factors such as; quality, time, client satisfaction cost, including environmental impacts, safety and health. The conceptual framework is shown in Figure 1.

Independent variable

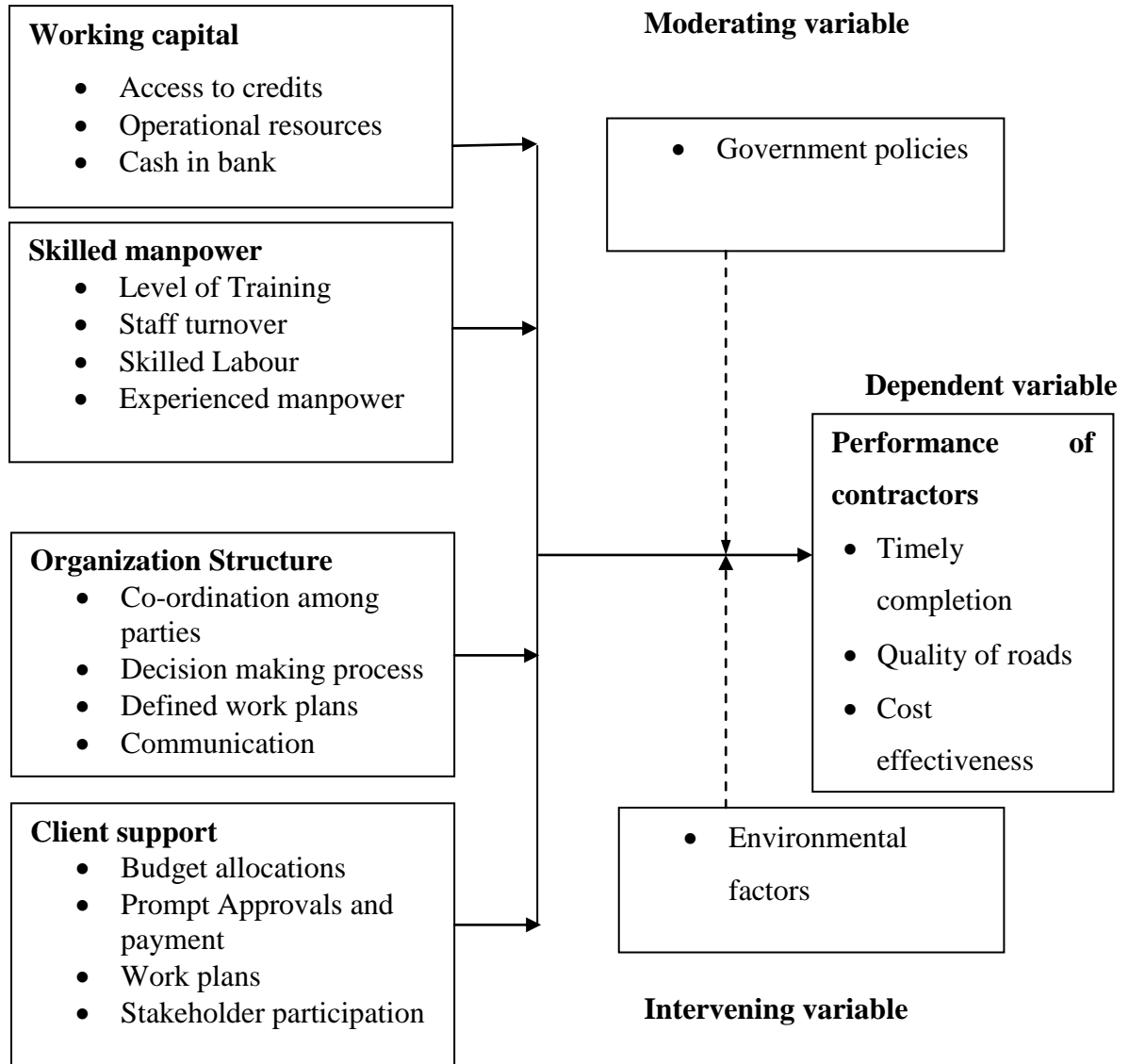


Figure 1: Conceptual Framework

2.9 Knowledge Gap

Author(s)	Study Title	Findings	Knowledge Gap
Sweis et al, 2014	Factors affecting contractor Performance on Public Construction Projects	Financial difficulties, manpower shortages, excessive owner change orders, are leading factors directly affecting contractor performance on construction projects	Study was undertaken in Jordan and it did not specify any construction sector. There is therefore a need to do for a specific construction sector.
Ofori K. et al, 2014	Factors affecting Ghanaian Contractor Performance	Access to credit, lack of capacity to compete with foreign contractors, low technology, poor project preparation and contracts awarded based on political considerations had the greatest effects on performance of Ghanaian contractors	It was carried out in Ghana as a industry-wide survey which did not specify any construction sector. There is therefore a need to do for a specific construction sector.
Muguiyu M. 2012	Factors Influencing Performance of Contractors Of Government Funded Building Projects in Kirinyaga County, Kenya	Human resource conditions and design quality aspects are the prime factors that affect contractor performance	It focused on building contractors in Kirinyaga County. There is a need to carry out a similar study for the road construction sector
Kahura N, 2014	Factors influencing effective and efficient delivery of road construction projects. A case of Nairobi county.	He concluded that benchmarking, inappropriate procurement system, time, information technology and poor project management influence effective and efficient delivery of roads construction projects	The study focused on delivery of road construction projects. There is need for a refined explanation on factors that affect contractors' performance in road construction sector.

There is a vast amount of literature on factors influencing performance of contractors in many developing countries. Although, these significant body of knowledge exist in the context of emerging economy, extant review of the literature suggest that there is lack of rigorous theoretical and empirical examination to establish the underlying characteristics of the numerous factor identified in the literature. This has posed a knowledge gap that this research study seeks to fill in Kenya.

2.10 Summary of Literature Review

The researcher reviewed the literature basically based on the study objectives in question. This was done to establish what are the underlying concepts in the area as well as what other researchers have found in their previous studies. The chapter also presented theoretical review: the study was grounded on Agency theory as one in which one or more person principal (s) engages another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent. The conceptual framework was outlined showing the relationship existing between independent variables and dependent variables under study. Finally the study analyses the summary of the study as per each objective.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodology which was used in the study. It outlines the study design, target population, sampling procedure, methods of data collection, validity and reliability and data analysis methods as well as operationalization of variables. All these were used in order to achieve the research objectives.

3.2 Research Design

Research design is the scheme, outline or plan that is used to generate answers to research problems. This research problem was studied through the use of descriptive research design. According to Kothari (2007), descriptive survey research design is a type of research utilized to find data that can assist establish exact character of a cluster. A descriptive survey involves getting answers to questions (often in the form of a questionnaire) from a large cluster of persons either by mail, telephone or in person. The main benefit of descriptive survey research is that it contains potential to grant us a lot of information from a fairly huge sample of individuals. Using the research design, this study focused on acquisition of quantitative and qualitative data from a cross-section of people involved in the road construction sector.

3.3 Target Population

According to Borg and Gall (2009) target population as is a universal set of research of all members of actual or imaginary set of people, events or objects to which an investigator wishes to generalize the result. The target population of this study were the road contractors in Kenya while the study population will be government representatives from road authorities (KENHA, KURA AND KERRA), contractors (project managers), consultants (Supervising engineers), and technical auditors participating in road construction. Mugenda and Mugenda (2003) explained that the target population should have observable characteristics to which the study intend to generalize the result of the study. This definition assumes that the population is not homogeneous. The target population of the study was 156 as shown in Table 3.1

Table 3.1: Study population

	Frequency	Percentage
Road Contractors	51	33
Consulting Engineers	40	26
Road Authority Engineers	60	38
Technical auditors	5	3
Total	156	100

3.4 Sample Size and Sampling Procedure

The sampling frame describes the list of all population units from which the sample will be selected (Cooper & Schindler, 2003). Sampling is selecting a given number of subjects from a defined population as representative of that population. Gay (2001) pointed that a sample of 10-40% is representative. In this study, 40% of the sample was considered, thus the sample size was calculated to be 62. The technique was applied so as to obtain a representative sample when the population does not constitute a homogeneous group. In stratified random sampling subjects are chosen in a manner that the existing sub-groups in the population are more or less represented in the sample (Mugenda & Mugenda, 2003). Table 3.2 shows the sample distribution.

Table 3. 2: Sample distribution table

Cluster	Target population	Stratified sample	Percentage
Road Contractors	51	20	32
Consulting Engineers	40	16	26
Road Authorities Engineers	60	24	39
Technical Auditors	5	2	3
Total	156	62	100

3.5 Research instruments

The instruments to be used in this study were questionnaires. Primary data was collected by the use of questionnaires. The questionnaire were divided into five sections: Part A which seeks to establish personal details of the respondent; Part B which contained influence of working capital on performance of road contractors; Part C which contained

influence of skilled manpower on performance of road contractors; Part D which contained influence of organization structure on performance of road contractors and lastly Part E which contained influence of client support on performance of road contractors. The structured questions will be used in an effort to conserve time and money as well as to facilitate in easier analysis as they are in immediate usable form.

3.5.1 Piloting the research instruments

Taking into consideration the significance and need to identify and establish weaknesses in the instrument that was used in the research study, the self-administered questionnaire was pre-tested before distributing it to the respondents. The questionnaires were reviewed by the research supervisor and researcher's professional peers and then tested on a small pilot sample of respondents with similar characteristics as the study respondents. The pilot sample consisted of 10 road construction professionals who were randomly selected. Mugenda and Mugenda (2003) suggest that the piloting sample ought to represent 10% of study sample based on the study sample size. The piloting was carried out in Nairobi where most of the respondents reside. Proposed suggestions for improvement of the questionnaire were gathered and adjustments were made to obtain a refined instrument. Piloting helps in revealing questions that could be vague which facilitates their examination until they communicate the same sense to all the subjects (Mugenda & Mugenda, 2003).

3.5.2 Validity of the research instruments

Validity is the degree to which the sample of the test item represent the content that is designed to measure. Creswell (2003) notes that validity is considering if one can draw consequential and valuable inference from scores on the instrument. The research adopted content validity which refers to the extent to which a measuring instrument provides adequate coverage of the topic under study. To ensure content validity, the instruments were reviewed by the research supervisor hence enabling the content to address the purpose and avoided ambiguity. This ensured that all respondents understood the content on the questionnaire. Response options were provided for some of the questions to ensure that the answers given are in line with the research questions they are meant to measure.

3.5.3 Reliability of research instruments

Reliability is the extent to which a research instrument yields findings that are consistent each time it is administered to same subjects (Mugenda & Mugenda, 2003). A pilot study was carried out to determine reliability of the questionnaires. The pilot study involved the sampled respondents. Reliability analysis was subsequently done using Cronbach's Alpha which measured the internal consistency by establishing if certain item within a scale measures the same construct. Gliem and Gliem, (2003) had indicated a value of 0.7 to be an acceptable reliability coefficient but lower thresholds are sometimes used in literature (Rousson, Gasser & Seifer, 2002), thus forming the study's benchmark. Cronbach Alpha was established for every objective; working capital had the highest reliability ($\alpha= 0.956$), followed by Skilled manpower ($\alpha=0. 910$), the Organization structure ($\alpha=0. 0.869$), and finally Client support ($\alpha=0.748$). This illustrates that all the variables were highly reliable as their reliability values exceeded the prescribed threshold of 0.7.

3.6 Data collection procedure

After approval of the proposal by the University of Nairobi to collect data, the researcher sought a license from NACOSTI. Using the authorization letter from the University the researcher started the process of data collection after seeking permission from relevant road authorities and owners of construction and consultancy firms involved in the research. A research assistant was engaged to assist in data collection. To clearly understand the research instruments, the assistant was trained on the intention of the study and moral values of research. The questionnaires to the respondents were administered face to face and via email. Telephone and email address including physical address of the respondents were obtained. Deliveries were carried out and followed up with reminders and personal collection was done by the researcher and the assistant. A few questionnaires were received through email.

3.7 Data analysis techniques

Analysis of data included sorting, cleaning and organization of data from the questionnaires. The study generated both qualitative and quantitative data. The information was then coded and entered into a spreadsheet and analyzed using Statistical Packages for Social Sciences (SPSS) Version 21 and was analyzed using descriptive statistics. The main quantitative techniques used included descriptive statistics such as

absolute and relative (percentages) frequencies, measures of central tendency and dispersion (mean and standard deviation respectively). Quantitative data was presented in tables and explanation presented in prose. Qualitative data was analyzed based on the content matter of the responses. Responses with common themes or patterns were grouped together into coherent categories.

In addition, to test the level of significance of each independent variable against dependent variable the study will use the model summary ANOVA and Regression Coefficient. The researcher used multiple regression analysis to establish the strength of the relationship between dependent and independent variables.

The regression equation is:

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

Where: Y is the dependent variable (performance of Road Contractors),

β_0 is the regression coefficient/constant/Y-intercept,

$\beta_1, \beta_2, \beta_3,$ and β_4 are the slopes of the regression equation,

X_1 is working capital

X_2 is skilled manpower

X_3 is organization structure

X_4 is client support

α is an error term normally distributed about a mean of 0 and for purpose of computation, the α is assumed to be 0.

3.8 Ethical considerations

The researcher made sure that ethics of the research were followed. Respondents participated in the study willingly. Confidentiality and discretion was observed. The respondents were informed about the objectives of the study with a promise that collected data will only be utilized for academic purposes.

3.9 Operationalization of variables

This section analyses the operational definition of variables on Factors Influencing Performance of Contractors in the road construction sector: Case of selected contractors in Kenya. Variable are given in Table 3.3

Table 3. 3: Operationalization of variables

Objectives Independent variable	Indicators	Measurement Scale	Types of Analysis	Statistics Analysis
To establish the influence of working capital on performance of contractors in the road construction sector:	<ul style="list-style-type: none"> • Access to credits • Operational resources • Cash in bank 	Ordinal Nominal Nominal	Non-parametric	Descriptive Regression
To assess the influence of skill manpower on performance of contractors in the road construction sector	<ul style="list-style-type: none"> • Training • Staff turnover • Shortage of skilled labour • Experienced manpower 	Ordinal Ratio Ordinal Ordinal	Non-parametric	Descriptive Regression
To examine how organization structure influences performance of contractors in the road construction sector.	<ul style="list-style-type: none"> • Task allocation • Defined work plans • Communication chain • Co-ordination • Supervision • Decision making Process 	Nominal Ordinal Ordinal Ordinal Ordinal	Non-parametric	Descriptive Regression
To establish the influence of client support on performance of contractors in the road construction sector.	<ul style="list-style-type: none"> • Budget allocations • Prompt Approvals and payment • Time Frame • Stakeholder Involvement 	Nominal Nominal Interval Ordinal	Non-parametric	Descriptive Regression
Dependent Variable				
Contractor performance	<ul style="list-style-type: none"> • Timely completion • Quality of roads • Cost effectiveness • Client satisfaction • Number of projects completed 	Nominal Ordinal Nominal Nominal Nominal	Non-parametric	Descriptive Regression

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter discusses the interpretation and presentation of the findings obtained from the field. The chapter presents the background information of the respondents, findings of the analysis based on the objectives of the study. Descriptive and inferential statistics have been used to discuss the findings of the study.

4.1.1 Response rate

The study sampled 62 respondents in collecting data on factors influencing performance of contractors in the road construction sector: Case of selected contractors in Kenya. The questionnaire return rate results are shown in Table 4.1.

Table 4.1: Response rate of the study

	Questionnaires issued	Questionnaires received	Percentage response
Total	62	51	82.3

A sample size of 62 respondents was the study target from which 51 filled in and returned the questionnaires with a rate of response of 82.3%. This rate was acceptable to make conclusions for the study as it was considered representative. According to Mugenda and Mugenda (1999), a rate of response of 50% is sufficient for analysis and reporting; a rate of 60% is good and a rate of response of 70% and over is exceptional. Based on this assertion, the response rate was outstanding.

4.2 Demographic characteristics

The analysis of respondents characteristics were carried out in relation to gender, age bracket, educational level, position in the organization, and period which the respondents has worked in road construction projects.

4.2.1 Gender profile of the respondents

The respondents indicated their gender in relation to either female or male in road construction sector. Results are shown in Table 4.2.

Table 4.2: Gender

Gender	Frequency	Percentage
Male	47	92.2
Female	4	7.8
Total	51	100.0

From the study results, it was noted that majority of the respondents, 92.2% were male whereas only 7.8% were female. This implies that construction industry in Kenya is majorly dominated by the male gender. This calls for campaigns that will aim at encouraging girl child to take engineering courses in order to fill this gap.

4.2.2 Organization where respondents worked

The respondents were asked to state the organization they worked with in the road construction sector. The results are shown in Table 4.3.

Table 4.3: Organization which the respondents worked with

Organization	Frequency	Percentage
Government ministry	1	2.0
KERRA	8	15.7
KURA	9	17.6
KENHA	13	25.5
Consultancy firm	8	15.7
Construction firms	12	23.5
Total	51	100.0

Respondents were requested to indicate the organization they worked for. From the research findings, it was that noted that 25.5 % worked with KENHA, 23.5% worked with contractors, 17.6% worked with KURA, 15.7% worked with consultancy firms and another 15.7% worked with KERRA while 2.0% of the respondents worked with

government ministry. This implies that all respondents worked with various organizations which are engaged in road construction playing various roles which place them in a position of being capable of providing very reliable information in this research study.

4.2.3 Age of respondents

The respondents were asked to state their age bracket. The results are shown in table 4.4

Table 4.4: Respondents age

Age bracket	Frequency	Percentage
20 – 29 years	4	7.8
30 – 39 years	16	31.4
40– 49years	13	25.5
Over 50 years	18	35.3
Total	51	100.0

From the study results, it was noted that 35.3% of respondents were aged over 50 years, 31.4% were aged between 30 to 39 years, and 25.5 % were aged between 40 to 49 years, whereas 7.8% were aged between 20 to 29 years. This infers that respondents were fairly spread in relation to age.

4.2.4 Respondents experience in the construction industry

The respondents were requested to indicate the period in years that they were involved in construction industry. The results are shown in table 4.5

Table 4.5: Period which the respondents has been involved in the construction projects

Period	Frequency	Percentage
Less than 5 years	3	5.9
Between 5 to 10 years	9	17.6
Between 10-15years	6	11.8
Between 15-20 years	9	17.6
Above 20 years	24	47.1
Total	51	100.0

From the study it was noted that 47.1% were involved in construction projects for more than 20 years, 17.6% were involved in road construction projects for a period of 5 to 10 years, 17.6% were involved for a period of 15-20 years, 11.8% have been involved in construction projects for a period of between 10-15years, whereas 5.9% of the respondents were involved in construction projects for not more than 5 years. This implies that most respondents were involved in road construction projects for a significant time length which enable them to give reliable information to this study.

4.2.5 Education level of respondents

The respondents were asked to indicate their level of education. The results are as shown in Table 4.6.

Table 4.6: Level of education

Level of education	Frequency	Percentage
Diploma	4	7.8
Bachelor's degree	29	56.9
Masters	17	33.3
Phd	1	2.0
Total	51	100.0

From the research findings, the study noted that 56.9% held bachelor's degree, 33.3% of the respondents indicated to hold master's degree, 7.8% of the respondents indicated to hold diploma certificate, while only 2.0% held Phd. This infers that respondents were educated thus able to respond to research questions easily. It also indicates that the road construction industry is run by very well educated professionals.

4.3 Factors influencing performance of contractors in the road construction sector

The research data from the questionnaire was used to find out how the respondents rated the influence of working capital, skilled manpower, organization structure and client support on performance of contractors in the road construction sector in Kenya.

4.3.1 Influence of working capital on performance of road contractors

The respondents were asked to indicate the extent to which the factors whose results are tabulated in Table 4.7 influence contractor's working capital.

Table 4.7: Extent to which some factors influence working capital for contractors' performance

Statement	Mean	Std. Dev.
Limited operational resources	4.22	0.92
Poor funding and cash flow problems	4.41	0.90
High cost of finance	4.18	0.91
Access to credits	3.80	0.94
Diversion of contract funds for other uses other than the project	3.94	1.05
Poor project planning and control	4.02	0.91
Foreign exchange fluctuations	3.12	0.86

From the findings, the factors that influence working capital for contractor's performance to a great extent include limited operational resources as illustrated by a mean score of 4.22, poor funding and cash flow problems as illustrated by a mean score of 4.41, high cost of finance as illustrated by a mean score of 4.18, poor project planning and control as illustrated by a mean score of 4.02, diversion of contract funds for other uses other than the project as illustrated by a mean score of 3.94 and access to credits as illustrated by a mean score of 3.80. However, foreign exchange fluctuations had less influence on contractors' working capital as shown by a mean of 3.12.

4.3.2 Extent to which some factors affect the amount of working capital in construction

The study sought to establish the extent to which factors tabulated in Table 4.8 affect the amount of working capital in construction.

Table 4.8: Extent to which following factors affect the amount of working capital in construction

Statement	Mean	Std. Dev
Inflation in prices of construction resources	3.59	0.90
Delays in interim payments and settlement of claims, variations, fluctuations, loss and expense	4.34	0.92
Taxation at source (withholding tax and VAT)	3.02	.09
Deduction of retention money	2.80	.08
Advance down payments at start of project	3.71	.24
Performance guarantee	2.98	.09
Insurances	2.64	.03

From the study, it was noted that majority of the respondents agreed that delays in interim payments, settlement of claims and variations, fluctuations, loss and expense as shown by a mean of 4.34 affected the amount of working capital in road construction to a great extent; advance down payments at start of project affected the working capital to a great extent as shown by a mean of 3.71, inflation in prices of construction resources as shown by a mean of 3.59

Others indicated that the following factors have little effect on the amount of working capital in construction; taxation at source (WHT and VAT) as indicated by a mean of 3.02, performance guarantee as indicated by a mean of 2.98, deduction of retention money as shown by a mean of 2.80 and insurances as shown by a mean of 2.64.

4.3 Influence of Skilled Manpower on Performance of contractors in the road sector

This section explores the relationship between, skilled manpower and performance of road construction firms.

4.3.1 Status of availability of skilled manpower

Respondents were requested to indicate the status of availability of skilled manpower in the road construction sector. The results are as shown in Table 4.9.

Table 4.9: Status of availability of skilled manpower in the road construction sector

Status	Frequency	Percentage
Adequate	18	35.3
Inadequate	33	64.7
Total	51	100.0

From the study, it was noted that majority of the respondents as indicated by 64.7% were of the opinion that skilled manpower in the road construction sector is inadequate while 35.3% were of contrary opinion. This implies that skilled manpower in the road construction sector is inadequate.

4.3.2 Effect of skilled manpower availability on performance of contractors in road projects

The study sought to establish the extent to which availability of skilled manpower influence performance of contractors in road construction projects as shown in the Table 4.10.

Table 4.10: Effect of skilled manpower availability on performance of contractors

Statements	Mean	Std.dev.
Availability of skilled & semi- skilled labour helps to expedite the achievement of project goals hence performance of contractors.	4.71	0.46
Lack of semi & skilled labour delays or stalls altogether the performance	4.22	0.64
Skilled labour provides quality performance of construction projects.	4.53	0.67
Skilled labour saves wastefulness of resources during construction of roads	4.53	0.64

From the study, it was noted that majority of the respondent strongly agreed that availability of skilled & semi- skilled labour helps to expedite the achievement of project goals hence performance of contractors as shown by a mean of 4.71, skilled labour provides quality performance of construction projects as shown by a mean of 4.53, skilled

labour saves wastefulness of resources during construction of roads as also shown by a mean of 4.53. Majority of respondents also agreed that lack of semi & skilled labour delays or stalls road construction projects altogether as shown by a mean of 4.22.

4.3.3 Effect of skilled manpower challenges on road construction projects

The study sought to determine the extent to which challenges on skilled manpower influence road construction projects. The results are shown in Table 4.11.

Table 4.11: Effect of skilled manpower challenges on road construction projects

Challenges in skilled manpower	Mean	Std.dev.
Shortage of manpower	3.96	1.13
Lack of financial resources	4.31	0.93
Cost of manpower development	3.59	0.98
Lack of appreciation to the role of manpower development	3.94	0.99
Lack of training programme	3.80	0.92
High labour turnover	4.04	0.87
Low level of education	3.92	0.93

From the study, most of the respondents indicate the following challenges as having significant influence on skilled manpower in road construction projects. Lack of financial resources as shown by a mean of 4.31, high labour turnover as shown by a mean of 4.04, shortage of manpower as indicated by a mean of 3.96, lack of appreciation to the role of manpower development as shown by a mean of 3.94, low level of education as indicated by a mean of 3.92, lack of training programme as shown by a mean of 3.80 and cost of manpower development as shown by a mean of 3.59.

4.3.4 Importance of skilled manpower in the road sector

Respondents were requested to describe the importance of skilled manpower in road construction sector. From the study, all respondents supported the view that skilled manpower is important, makes a firm competitive, and improves contractor performance.

4.4. Influence of Organization Structure on performance of contractors in the road sector

The research was conducted to establish how organization structure of road contractors influenced their performance on construction projects.

4.4.1 Relation between organization structure and contractor performance

The study sought to establish whether there was any relationship between organization structure and contractor performance. The results are indicated in Table 4.12

Table 4.12: Relation between organization structure and contractor performance

Opinion	Frequency	Percentage
Yes	51	100
Total	51	100

From the study, all the respondents agreed that there existed a strong relationship between organization structure and contractor performance as shown by 100% response rate.

4.4.3 Organization structure and its influence on performance of contractors

The respondents were asked to indicate their level of agreement to the statements in Table 4.13 relating to organization structure and its influence on contractors performance in road construction projects.

Table 4.13: Organization structure and its influence on performance of contractors in the road construction projects

	Mean	Std. Dev.
Poor performance has been attributed to lack of proper coordination among stakeholders in road construction contracts	4.18	0.91
Coordination among departmental heads in a construction firm improve firm productivity	4.51	0.73
Individual members and teams should be involved in decision making	4.25	0.80
Task allocation should be carried out efficiently in order to improve contractor productivity hence performance.	4.61	0.63
Construction related performance problems includes costs associated with delays, claims, wastages and rework	4.53	0.58
Effective communication and fast information transfer between managers and participants help to accelerate the road construction process and performance	4.45	0.67
Defined work plans assist organization processes in achieving maximum performance in the interest of firms objective hence performance of construction industry	4.45	0.78

From the research findings, the mean value of more than 4.00 indicated that majority of the respondents strongly agreed that task allocation should be carried out efficiently in order to improve contractor productivity, construction challenges involve expenses related to delays, claims, wastages and repair. Coordination among departmental heads in a construction firm improve firm productivity, fast and effective communication transfer among managers and participants speed up road construction process and hence performance of road contractors , defined work plans assist organization processes in achieving maximum performance in the interest of firms objective hence performance of

construction industry, individual members and teams should be involved in decision making, Majority agreed that poor performance has been attributed to lack of proper coordination among stakeholders in roads construction contracts as shown by a mean of 4.18

4.5 Extent to which client support influence performance of road contractors in Kenya

This section explores on how client support influences performance of construction firms.

4.5.1 Financing of road construction projects

Respondents were requested to indicate the body that funded road construction projects in Kenya. The results are as shown in Table 4.14

Table 4.14: Financing of roads construction projects

	Frequency	Percentage
Thro' Government	3	5.9
Both	48	94.1
Total	51	100.0

From the study results, most of the respondents as indicated by 94.1% indicated that the construction projects which they handled were financed by both donors and the Kenyan government whereas on 5.9% of the respondents who indicated that the road construction projects were financed by Kenyan government. This implies that construction projects were majorly financed by both donors and the Kenyan government.

4.5.2 Project funding levels

The study sought to determine the project funding levels for construction of road projects. Results are indicated in Table 4.15

Table 4.15: Project funding levels for the road construction projects

Sufficient funds	Frequency	Percentage
Sufficient funds	8	15.7
Intermittent Funding	15	29.4
Funding in Phases	12	23.5
Insufficient funding	16	31.4
Total	51	100.0

From the study, some respondents as shown by 31.4% indicated there was insufficient funding, 29.4% indicated that there was intermittent funding, 23.5% indicated that funding was done in phases, and only 15.7% indicated that there was sufficient funds. This implies that construction projects were poorly funded

4.5.3 How client support influences construction of road projects in Kenya

The study sought to establish the extent to which client support influence construction of roads projects. The results are shown in Table 4.16

Table 4.16: Influence of client support on construction of roads projects

Statements	Mean	Std. Dev.
Prompt payments and approvals facilitates timely project completion	4.04	1.23
Stakeholders involvement aids in smooth project implementation	3.84	1.05
Irregular funds disbursements causes project delays and/ or stalling	4.04	1.18
Insufficient support causes project costs overrun, disputes, arbitration costs, litigation and project abandonment	3.88	1.07

From the research findings, majority of the respondents strongly agreed that Prompt payments and approvals facilitates timely project completion and irregular funds disbursements cause project delays and/ or stalling as shown by a mean of 4.04 in each

case, Majority of the respondents also agreed that insufficient support causes project costs overrun, disputes, arbitration costs, litigation and project abandonment as shown by a mean of 3.88 and that Stakeholders involvement aids in smooth project implementation as shown by a mean of 3.84.

4.5.4 Project cost estimates

The study sought to establish whether construction project costs were accurately and professionally prepared. This was meant to inform on why project cost overrun was very common. The results are indicated in Table 4.17.

Table 4.17: Construction project costs accurately and professionally prepared

Opinion	Frequency	Percentage
Yes	28	54.9
No	23	45.1
Total	51	100.0

From the study, it was noted that most of the respondents as indicated by 54.9% agreed that construction project costs were accurately and professionally prepared whereas 45.1% of the respondents disagreed. This implies that construction project costs were accurately and professionally prepared.

4.5.5 Preparation of budgets

The study set out to establish whether budgets are prepared in respect of road construction projects. The results are shown in Table 4.18.

Table 4.18: Budgets preparation for construction projects

Opinion	Frequency	Percentage
Yes	32	62.7
No	19	37.3
Total	51	100.0

From the research findings, majority of the respondents as shown by 62.7% agreed that project budgets were prepared in respect of construction projects whereas 37.3% of the

respondents were of the contrary opinion. This implies that project budgets were prepared in respect of road construction projects.

4.5.6 Level of adherence to budgets

Respondents were requested to rate the level of adherence to project budgets during implementation of road construction project. The results are indicated in Table 4.19.

Table 4.19: Level of adherence to project budgets during construction project implementation

Level	Frequency	Percentage
Very High	1	2.0
High	8	15.7
Average	38	74.5
None	3	5.9
Not sure	1	2.0
Total	51	100.0

The study indicated that 74.5% of the respondents rated level of adherence to project budget as average, 15.7% of the respondents indicated high, 5.9% of the respondents indicated none while 2.0% of the respondents indicated very high or not sure. This implies that the level of adherence to project budgets during construction project implementation was to an average level.

4.6 Contractor performance

In this section the respondents were asked to indicate the number of projects completed within initial construction time, and initial construction cost as a measure of performance of contractors in the road construction sector.

4.6.1 Number of projects undertaken by organization

The study sought to establish the number of road construction projects that the respondent had been involved in. The results are as indicated in Table 4.20.

Table 4.20: Number of road construction projects undertaken by the firm

Number	Frequency	Percentage
Less than 2	1	2.0
Between 2 and 5	2	3.9
Between 5 and 10	11	21.6
More than 10	37	72.5
Total	51	100.0

From the study, 72.5% of the respondents revealed that organizations had been involved in construction of more than 10 road projects, 21.6% of the respondents between 5 and 10 road projects, 3.9% of the respondents indicated that the firm had been involved in construction of 2 and 5 projects whereas 2.0% of the respondents indicated that the firm had been involved in construction of not more than 2 projects. This implies that most of the respondents have sufficient experience and reliable information in the road construction sector.

4.6.3 Projects completed within the initial contract period

The study sought to establish whether road construction projects were completed within the initial contract period. The results are shown in Table 4.21.

Table 4.21: Number of road construction projects completed within the initial contract period

Opinion	Frequency	Percentage
Yes	4	7.8
No	47	92.2
Total	51	100.0

From the study, most of the respondents as indicated by 92.2% disagreed that road construction projects were completed within the initial contract whereas 7.8% of the respondents were of the opposite opinion. This implies that road construction projects were not completed within the initial contract.

4.6.4 Percentage of road projects completed on time

The study sought to establish the percentage of projects that were completed within the initial contract period. The results are shown in Table 4.22.

Table 4.22: Percentage of projects completed within the initial contract period

Percentage	Frequency	Percentage
Less than 25%	25	49.0
Between 25-50%	14	27.5
Between 50-75%	9	17.6
Between 75- 100%	3	5.9
Total	51	100.0

From the study, majority of respondents as shown by 49.0% indicated Less than 25 percentage, 27.5 % of the respondents indicated between 25-50 percentages, 17.6 % of the respondents indicated between 50-75 percentage 5.9% of the respondents indicated between 75- 100 percentage. This implies that more than fifty percent of the road construction projects were not completed within the initial contract period.

4.6.5 Factors affecting timely completion of road construction projects

The study sought to establish the extent to which some factors affect timely completion of road construction projects. The results are shown in Table 4.23.

Table 4.23: Extent to which following factors affects timely completion of road construction projects

Statement	Mean	Std dev.
Delayed payment	4.73	0.49
Variation in scope	4.22	0.70
Delayed approvals by client	4.16	0.76
Land acquisition issues	4.45	0.70
Weather conditions	3.96	0.66
Cost overruns	4.08	0.72

From the study, most of the respondents strongly agreed that the following factors hinder timely completion of road construction projects; delayed payment was ranked the highest with a mean of 4.73, land acquisition issues were ranked second with a mean of 4.45, variation in scope was ranked third with a mean of 4.22, delayed approvals by client were ranked fourth with a mean of 4.16, cost overruns as shown by a mean of 4.08, weather conditions as shown by a mean of 3.96.

4.7 Inferential analysis

Inferential analysis has been used in this research to establish if there is a relationship between an intervention and an outcome, and also establish the impact of that relationship. The inferential analysis was carried out to establish the relationship between dependent variable and the independent variables. This involved computation of both multiple regression analysis and coefficient determination. The dependent variable in this study was performance of contractors while the independent variables were; working capital, skilled manpower, organization structure and client support.

4.7.1 Coefficient of determination

The coefficient of determination is a measure of how well a statistical model is likely to forecast future outcomes. The r^2 is the square of the sample correlation coefficient between outcomes and predicted values. Therefore it defines the degree to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable, in this case the performance of contractors, that is explained by all the four independent variables (working capital, skilled manpower, organization structure and pool client support). The coefficient of determination is presented in Table 4.24.

Table 4.24: Coefficient of determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.889	0.790	0.736	0.32561

Adjusted R squared is coefficient of determination which illustrates the variation in the dependent variable as a result of changes in the independent variable. From the study, in the value of adjusted R squared was 0.736 an indication that there a was variation of 73.6

percent on performance of Road Contractors in Kenya as a result of changes in working capital, skilled manpower, organization structure and client support at 95 percent confidence interval. This indicates that 73.6 percent changes in performance of Road Contractors in Kenya could be accounted to working capital, skilled manpower, organization structure and client support. This implies that the four factors are very critical to the road construction sector.

4.7.2 Multiple regression analysis

In addition, the researcher conducted a multiple regression analysis so as to determine the factors influencing performance of contractors in the road construction sector in Kenya. Multiple regression analysis was used to test the influence among predictor variables. The study used statistical package for social sciences (SPSS V 21.0) to code, enter and compute the measurements of the multiple regressions. The results of Multiple Regression Analysis are tabulated in Table 4.25.

Table 4.25: Multiple regression analysis

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	1.508	1.131		1.333	0.001
Working capital	0.481	0.228	0.203	2.110	0.002
Skilled manpower	0.347	0.127	0.217	2.732	0.003
Organization structure	0.416	0.115	0.316	3.617	0.001
Client support	0.267	0.103	0.125	2.592	0.000

From the computed data the established regression equation was

$$Y = 1.508 + 0.481X_1 + 0.347 X_2 + 0.416 X_3 + 0.267 X_4$$

Where Y= Performance of Contractors

X₁= Working Capital

X₂= Skilled Manpower

X₃= Organization Structure

X₄= Client Support

Using the above regression equation it was revealed that holding working capital, skilled manpower, organization structure and client support constant at zero, the performance of road contractors in Kenya would be at 1.508. The findings also show that a unit increase in working capital would lead to an increase in performance of road contractors in Kenya by a factors of 0.481, a unit increase in skilled manpower would lead to increase in performance of road contractors in Kenya by factors of 0.347, a unit increase in organization structure lead to increase an performance of road contractors in Kenya by a factor of 0.416, and a unit increase in client support would lead to an increase in performance of road contractors in Kenya by a factors of 0.267 and . All the variables were significant as their values were less than ($p < 0.05$).

4.7.3 Analysis of variance

Analysis are shown in Table 4.26

Table 4.26: Analysis of variance

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	1.724	4	.431	3.814	.001 ^b
Residual	5.198	46	.113		
Total	6.922	50			

Critical value =2.6060

The (p-value) was found to be less than 5%. The computed value was greater than the critical value ($3.814 > 2.6060$) an indication that all the independent variables; working capital, skilled manpower, organization structure and client support affect the performance of Road Contractors. From the ANOVA statistics, the research established the regression model had a significance level of 0.3% which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance was less than 0.05 indicating that the model was reliable.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussion of key data findings, conclusion drawn from the findings highlighted and recommendations made there-to. The conclusions and recommendations drawn were focused on addressing the objective of the study. The researcher had intended to determine the influence of working capital on performance of contractors in the road construction sector, to assess the influence of skilled man power on performance of contractors in the road construction sector, to examine how organization structure influence performance of contractors in the road construction sector and to establish the influence of client support on performance of contractors in the road construction sector

5.2 Summary of the findings

Respondents of the study comprised contractors, consultant and client (owners) of the road construction projects. The response rate of 82.3% was considered more than adequate for the study. The outcome indicated that the road construction industry is male dominated, implying an imbalance in gender representation. The respondents had considerable experience in the road construction sector having been involved in many projects and were well educated with majority holding a degree level and above, implying that the information obtained from them was very credible. The study investigated factors influencing performance of contractors in the road sector in Kenya, in particular influence of working capital, skilled manpower, organization structure and client support. From the findings of the research, there was an indication that 73.6 percent of factors influencing performance of road contractors in Kenya was due to working capital, skilled manpower, organization structure and client support at 95 percent confidence interval. This implies that the four factors are very critical to the road construction sector. Working capital had highest influence on performance of road contractors while client support had the least influence. The sub-sections that follow summarize the findings of the study based on the objectives of the research.

5.2.1 Working capital

The study established that working capital aids construction firms to function smoothly without any fiscal problem of processing the payment of immediate liabilities, procuring raw materials, payment of salaries and wages without any delay. Sufficient working capital maintains solvency of the construction firms by providing continuous flow of operations. The study indicated that many road contractors in Kenya suffer from lack of access to credit, high cost of finance and poor cash flow problems. The research also found that diversion of contract funds to other uses substantially affected contractor's working capital. Another major finding was that delays in interim payments and settlement of contractors claims for variations, fluctuations in prices of materials and labour substantially affect contractors working capital and hence performance.

5.2.2 Skilled manpower

The study established that availability of skilled man power enabled the construction company to achieve overall goals of the company as skilled employees delivered quality work. Skilled employees perform quality work and can increase the number of clients quickly than any other organization and availability of skilled man power enhanced the performance of contractors in the road construction sector and vice versa. Lack of semi-skilled and skilled labour causes significant project delays and sometimes leads many road construction projects to stall or be abandoned altogether thereby adversely affecting contractor performance of contractors.

5.2.3 Organizational structure

The study revealed that Coordination among departmental heads in a construction firm improve firm productivity, fast and effective communication transfer among managers and participants speed up the road construction process and performance of contractors. The findings are in line with that a strong organizational structure offers a comprehensive of management plan that is easier to create and execute to help maintain a strong managerial core. A suitable organization structure assists the project organization team to achieve high performance in the project through gains in efficiency and effectiveness.

5.2.4 Client support

The study revealed that client support helped to curb irregular funds disbursements with an aim of minimizing project delays and/ or stalling of construction projects, it also enhanced prompt payments and approvals facilitates timely project completion and that client support helped in gaining incredible expertise and that availability of client support enhanced contractors performance in road construction sector. This affects performance of contractor in meeting targets. The findings also indicate that client support in terms of engaging project beneficiaries and stakeholders throughout the project life cycle was crucial in facilitating success of road construction projects.

5.3 Discussion of the findings

The discussion of the findings was guided by the four objectives of the study as discussed in the sub sections that follow,

5.3.1 Working capital and Contractor Performance

The study noted that the following factors affect proper working capital organization by contractors to a great extent; poor funding and cash flow problems limited operational resources, high cost of finance, poor project planning and control and diversion of contract funds for other uses other than the project. The research also noted that foreign exchange fluctuations had little effect on proper working capital of organization. These findings are in line with the research by Akinsulire, (2002) who opined that sufficient working capital maintain solvency of the industry by providing smooth flow of operations.

The study also revealed that the following factors affect the amount of working capital in construction to a great extent; delays in interim payments and settlement of claims for variations, fluctuations, loss and expense, advance down payments at start of project and inflation in prices of construction resources. These findings are in agreement with Rahman (2013) who observed that financial stability of contractors and adequate cash flow is critical in keeping construction progress as planned. Ameh (2011) opines that inadequate funds lead to time overrun and adequate funding guarantees reasonable cash flow The study also noted that the following factors have little or no affect on the amount of working capital in construction; performance guarantee, deduction of retention money and payment of insurances. Working capital is crucial in sustaining smooth running of

operations and that no business can operate effectively with no sufficient amount of working capital. A similar but separate survey in Ghana seems to corroborate this view, where financial hardships was ranked among the top three most likely impacts of late payments to contracting firms (Ansah, 2011). While in Malaysia it was similarly reported that financial hardships attributable to late payments was top among the three most grave effects of late and non-payments (Danuri,et al., 2006)

The findings are in line with the research by Akintude, (2003) who observed that lack of adequate working capital results to poor project performance in terms of meeting completion dates, work quality and cost effectiveness which has often led to bankruptcy and in extreme cases, project abandonment.

5.3.2 Skilled manpower and Contractor Performance

The study noted that skilled manpower in the road construction sector is inadequate. The availability of skilled & semi- skilled labour helps to expedite the achievement of project goals and hence performance of contractors. Skilled labour provides quality performance of construction projects and saves wastefulness of resources during construction of roads. Lack of semi & skilled labour delays or stalls road construction projects altogether. The findings are in congruence with the research by Hanim (2010) who found that shortage of skilled manpower cause delays in road construction projects.

The research also noted that the following challenges have a significant influence on skilled manpower in road construction projects; Shortage of manpower, lack of financial resources and high labour turnover, low level of education, lack of appreciation to the role of manpower development, lack of training programme and high cost of manpower development. Further the study noted that skilled manpower is important, makes a firm competitive, and improves contractor performance. The findings concur with the research by Trendle (2008) that indicated skilled employees perform quality work and can increase the number of clients quickly in an organization.

5.3.3 Organization Structure and Contractor performance

The research revealed that there existed strong relationship between organization structure and contractor performance. Tasks allocation should be carried out efficiently in order to improve contractor productivity hence performance. Coordination among

departmental heads in a construction firm improves firm productivity. The findings are in line with the research by Armstrong and Stephens (2008) who indicated that organization structures must provide the framework in which organization processes have the best chance of achieving maximum performance in the interest of firm's objective hence performance of construction industry. This is also supported by a study done by Maduenyi (2015) on impact of organization structure on contractor performance.

Further the study established that fast and effective communication transfer among managers and participants speed up road construction process. Defined work plans assist organization processes in achieving maximum performance in the interest of firm's objective hence performance of construction industry. Individual members and teams should be involved in decision making and that poor performance has been attributed to lack of proper coordination among stakeholders in road construction contracts. The findings agree with the research by Stephens (2008) that a strong organizational structure offers a comprehensive management training plan that is easier to create and execute to help maintain a strong managerial core.

5.3.4 Client Support and Contractor Performance

The study also revealed that construction projects were majorly financed by both donors and the Kenyan government; most of the construction projects were poorly funded. Client support helped to ensure prompt payments and approvals which facilitate timely project completion. Insufficient client support causes project cost overruns, disputes, arbitration costs, litigation and project abandonment. Irregular funds disbursements lead to project delays and/ or stalling. The study noted that only 25 percent of the road projects were completed on time. This is in line with Nyika (2012) who had observed that only 20.8 per cent of road projects in Kenya were implemented on time and budget, while 79.2 per cent exhibited some form of failure. The study further noted that stakeholder involvement aids in smooth project implementation. Construction project costs were accurately and professionally prepared. The project budgets were prepared in respect of construction projects and that the level of adherence to project budgets during construction project implementation was up to average level. Dissanayaka & Kumaran, 1999) observed the government (client) needs to allocate more budgets to the project to facilitate its completion since it cannot proceed without adequate financing, and the cost of providing

adequate financing can be quite large. The findings also correlate with the research by Latham (1994) that clients have a substantial role to play in setting demanding standards and insisting upon improvements. The findings further confirms with the research by Thomas and Ellis (2007) that contractor is contracted by a firm to execute a contract and complete the project within a specified timeline. On the other hand, the government needs to play its client support role adequately to ensure successful implementation of the projects.

5.3.5 Contractor Performance

The study established that the number of road construction projects that respondents firm have been involved were more than 10 projects. Most road construction projects were not completed within the initial contract period. Only about 25% were completed within the initial contract period. The study also noted that majority of the road projects were not completed on the initial contract cost. The research noted that the following factors affected timely completion of road construction projects; variation in scope and cost overruns, delayed payment and weather conditions, land acquisition issues and delayed approvals by client. The findings further concur with the research by Ejaz et al (2013) that the contractor's, consultants, and owners should simplify factors that affect contractor performance positively and negatively.

The challenges identified in this study work simultaneously to diminish the success of Kenyan road contractors in their performance on construction projects. It is noted that the government is the main client of road contractors, but there are frequent delays in payments which have a very significant effect on the performance of road contractors who are largely dependent on government for the survival of their businesses. In many cases, it takes several months and sometimes more than a year for road contractors to receive the much needed payments for both ongoing and completed projects. Payment delays are caused by inadequate funding which most of the respondents including client representatives indicated that there was insufficient budgeting right from commencement date of the projects. Considering the long history of delayed payments by the government most financial institutions and banks have developed cold feet in providing credit to road contractors. Access to credit for road contractors has been hampered further by the high cost of finance charged by the banks. Some of the contractors have been declared

bankrupt due to factors related to delayed payments. Lack of finance directly impacts the abilities of road contractors in Kenya to sustain adequate operational resources in terms of skilled manpower, materials and equipment, thereby eroding their performance on construction projects.

5.4 Conclusion of the study

The study established that working capital aids construction firms to work efficiently with no fiscal difficulty of making the payment of immediate liabilities, procuring of raw materials and payment of remuneration, wages and make payment without any delay. The findings are in line with the research by Akinsulire (2002) that sufficient working capital aids in sustaining solvency of the business by providing continuous flow of operations. This is also in agreement with Rahman (2013) who indicated that financial stability of contractors and adequate cash flow is critical in keeping construction progress as planned. Ameh observes that inadequate funds lead to time overrun and adequate funding guarantees reasonable cash flow. Therefore the study concludes that availability of adequate working capital was very vital in enhancing performance of contractors in the road construction sector.

The study established that skilled man power enable the construction company to achieve overall goals of the company as skilled employees delivered quality work. The findings are in support of the research by Trendle (2008) that skilled employees perform quality work and can increase the number of clients quickly than any other organization. Thus the study concludes availability of skilled man power enhanced the performance of contractors in the road construction sector.

The study revealed that coordination among departmental heads in a construction firm improve firm productivity, fast and effective communication transfer among managers and participants speeds up road construction process and performance. The findings are in line with the research by Armstrong and Stephens (2008) that a strong organizational structure offers a comprehensive management plan that is easier to create and execute to help maintain a strong managerial core. The study therefore concludes that strong organizational structure enhance the performance of contractors in the road construction sector.

The research findings noted that one role of client support is to ensure involvement of stakeholders and/or project beneficiaries throughout the project cycle, as it was considered paramount in achieving project success. The study further revealed that client support services helped to curb irregular funds disbursements and thereby reduce on project delays and/ or stalling of road construction projects. The study also confirmed that prompt payments and approvals is considered very crucial in facilitating timely project completion and that insufficient support causes project costs overrun, disputes, arbitration costs, litigation and project abandonment. The study therefore concludes that availability of client support enhanced the performance of contractors in the road construction sector.

5.5 Recommendations

The study recommends that:

1. Road construction firms need to have a reliable working capital base and should only be awarded contracts based on their financial capabilities and technical resources at their disposal. However contractors could improve their working capital by forming public private partnerships with financiers who may be willing to finance big construction projects. On the other hand construction companies could establish a bank for construction industry that could provide them with access to credit at reasonable interest rates to improve their operating working capital. On the other hand the government should ensure consistent disbursement of funds. Clients should not award road construction contracts to contractors without having a solid financial plan to ensure adequate budgets to complete the projects. This will help to alleviate operational delays which lead to slow project implementation process and overrun in cost and period for construction. To overcome the issue of delayed payment the government should come up with a policy that sets timelines for payment of monies due to the contractors and suppliers of goods and services. This policy should also prescribe penalties for delayed payments and should apply on goods and services supplied to both the government and the private sector owners of projects.
2. There is need to encourage growth of manpower skills through training and skill up-gradation within construction firms as skilled manpower was found to be an

asset, which pays over the long term. There is also need to develop mechanism that will aim at alleviating high cost associated with training of engineers and technicians in Kenya. This should be done in view of the current shortages of skilled man power. There is need for more middle level colleges while ensuring that the existing technical colleges are retained and not converted to universities as has been the case.

3. Construction firms need to have a flexible dynamic organizational structure. This is the basis of the revelation that existence of strong organizational structure forms the core from which the successful implementation of road construction projects can be grounded. Every contractor should have a clear strategic plan and appropriate, flexible organizational structure which is compatible with the needs of the organization. Recruitment should be based on qualification and experience basis; also there should be clear specific process of upgrade and bonuses based on progress reports. Most of the construction firms are owned by family and run as one man show. Adoption of Total Quality Management (TQM) practices is recommended. To ensure that the firms offer quality standards that are commensurate with the size and budget of road project they undertake.
4. One of the most important client support role is to ensure that contractors for road projects are given possession of land that is without any encumbrances to ensure an early project commencement. This calls for the client to acquire land and compensate and involve the project affected persons (PAP) well in advance of commencement of the project. Clear policies on stake-holder/client involvement must be put in place. This is based on revelation that stakeholder/client involvement enhanced the implementation of road construction projects. There is need for equal effort and involvement of the government, contractor and the project beneficiaries, to enhance ownership and successful implementation of road construction projects. From the recommendations obtained from the study, clients need to improve on the speed of approval of interim payments, variations to the contract, evaluation of claims by the contractors and also prompt resolution of disputes in the contract, if contractor performance is to be enhanced. In order to alleviate problems associated with delayed payments, there should be effective

funding of project by the client to avoid unnecessary time overruns which eventually lead to cost overruns and delayed completion of road construction projects which have a bearing on poor performance of road contractors.

5.6 Suggestions for Further Research

The new areas of study recommend the following for further research;

1. A similar study should be carried out in other sectors of the construction industry for example building construction, water and sanitation including energy infrastructure projects.
2. A similar study could be conducted for contractors awarded contracts by individual county governments in Kenya.
3. A research on influence of political factors on performance of contractors would be vital as this issue was mentioned by respondents to be influencing their profit margins and hence their performance.

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APPENDICES

Appendix 1: Letter of Transmittal



UNIVERSITY OF NAIROBI
COLLEGE OF EDUCATION AND EXTERNAL STUDIES
SCHOOL OF CONTINUING AND DISTANCE EDUCATION
DEPARTMENT OF EXTRA-MURAL STUDIES
NAIROBI EXTRA-MURAL CENTRE

Your Ref:

Our Ref:

Telephone: 318262 Ext. 120

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

14th June 2016

REF: UON/CEES/NEMC/23/401

TO WHOM IT MAY CONCERN

RE: MATU JOHNSON MWANGI - REG NO L50/76170/2014

This is to confirm that the above named is a student at the University of Nairobi, College of Education and External Studies, School of Continuing and Distance Education, Department of Extra- Mural Studies pursuing a course leading to the award of Master of Arts in Project Planning and Management.

He is proceeding for research entitled "factors influencing performance of contractors in the road construction sector" case of selected contractors in Kenya.

Any assistance given to him will be appreciated.


CAREN AWILLY
CENTRE ORGANIZER
NAIROBI EMC



Appendix 2: Research Questionnaire

SECTION A: Répondants' Profile

1. Kindly indicate your gender? Male Female

2. Respondents' Position in the firm

 Consultant Contractor Supervising Engineer Technical auditor

3. In which organization do you work?

 Government ministry County Government KeRRA KURA

 KeNHA Consultancy firm Others (specify).....

4. Which one best describes your age bracket?

 20 – 29 years 30 – 39 years 40– 49years Over 50 years

5 How long have you been involved in the Construction projects?

 Less than 5 years Between 5 to 10 years Between 10-15years Between
 15-20 years Above 20 years

6. Indicate the level of your education?

 Diploma Bachelor's degree Masters PHD

 Others (Please specify).....

SECTION B: Working Capital and Contractor Performance

7. To what extent do the following factors affect proper working capital organization by contractors? React on the items provided by using the scale given. Please tick (√) appropriately. 5= Very Great, 4= Great, 3= Little, 2=No effect 1=Not Sure

Statement	1	2	3	4	5
Limited operational resources					
Poor funding and cash flow problems					
High cost of finance					
Access to credits					
Diversion of contract funds for other uses other than the project					
Poor project planning and control					
Foreign exchange fluctuations					

8. To what extent do the following factors affect the amount of working capital in construction? Use a scale of 1-5 where 5=Very Great, 4=Great, 3=Little, 2=No effect 1=Not Sure

Statement	1	2	3	4	5
Inflation in prices of construction resources					
Delays in interim payments and settlement of claims for variations, fluctuations, loss and expense					
Taxation at source (withholding tax and VAT)					
Deduction of retention money					
Advance down payments at start of project					
Performance guarantee					
Insurances					

SECTION C: Skilled Manpower and Contractor Performance

9. In your opinion, what is the status of availability of skilled manpower in the road construction sector?

Adequate

Inadequate

10. Indicate the level of agreement on influence of availability of skilled manpower on performance of contractors in road projects. React on the items provided by using the likert scale given. Please tick (√) appropriately: 1=strongly agree; 2=Agree; 3=Neutral; 4=Disagree; 5=strongly disagree

Statements	1	2	3	4	5
Availability of skilled & semi- skilled labour helps to expedite the achievement of project goals hence performance of contractors.					
Lack of semi & skilled labour delays or stalls altogether the performance					
Skilled labour provides quality performance of construction projects.					
Skilled labour saves wastefulness of resources during construction of roads					

11. How significant are the following challenges on skilled manpower in road construction projects you have been involved? Please use the scale below to answer the following questions. Very Significant challenges – (1) Significant Challenges - (2); Neutral– (3); not very significant challenges– (4); Not significant challenges – (5)

Challenges in skilled manpower	1	2	3	4	5
Shortage of manpower					
Lack of financial resources					

Cost of manpower development					
Lack of appreciation to the role of manpower development					
Lack of training programme					
High labour turnover					
Low level of education					

12. How can you describe skilled manpower in road construction sector?

It is important, makes a firm competitive, and improves contractor performance []

It is not necessary and so can be overlooked []

I don't know []

13. Do you have any recommendation for the development of skilled manpower in the road construction industry? Kindly indicate below

.....

SECTION D: Organization Structure and Contractor performance

14. Is there any relation between organization structure and contractor performance?

Yes [] No []

15. Indicate your level of agreement to the statement below relating to organization structure and its influence on contractors performance in Road Construction Projects. Use a scale of 1-5, where 1- strongly agree, 2- agree, 3- neutral, 4- disagree, 5- strongly disagree

	1	2	3	4	5
Poor performance has been attributed to lack of proper coordination among stakeholders in roads construction contracts					

Coordination among departmental heads in a construction firm improve firm productivity					
Individual members and teams should be involved in decision making					
Task allocation should be carried out efficiently in order to improve contractor productivity hence performance.					
Construction related performance problems includes costs associated with delays, claims, wastages and rework					
Effective communication and fast information transfer between managers and participants help to accelerate the road construction process and performance					
Defined work plans assist organization processes in achieving maximum performance in the interest of firms objective hence performance of construction industry					

SECTION E: Client Support and Contractor Performance

16. How are roads construction projects funded?

Thro' Donors [] Thro' Government [] Both []

Other (please specify).....

17. Describe the magnitude of project funding levels for the road construction projects you have been involved in.

Sufficient funds [] Intermittent Funding []

Funding in Phases [] Insufficient funding []

18. Indicate the level of agreement on influence of client support on construction of roads projects. React on the items provided by using the likert scale given. Use a scale of 1-5, where 1- strongly agree, 2- agree, 3- neutral, 4- disagree, 5- strongly disagree

Statements	1	2	3	4	5
Prompt payments and approvals facilitates timely project completion					
Stakeholders involvement aids in smooth project implementation					
Irregular funds disbursements project delays and/ or stalling					
Insufficient support causes project costs overrun, disputes, arbitration costs, litigation and project abandonment					

19. What advice could you offer on client support to enhance contractor performance in road projects in Kenya?

.....

20. In your view are construction project costs accurately and professionally prepared?

Yes No

21. Are project budgets prepared in respect of construction projects? Yes No

22. How do you rate the level of adherence to project budgets during construction project implementation?

Very High High Average None Not sure

SECTION F: Contractor Performance

23. How many road construction projects have you or your firm been involved?

Less than 2, Between 2 and 5

Between 5 and 10 More than 10

24. Were these road construction projects completed within the initial contract period?

Yes No

25. On average, what percentage of projects was completed within the initial contract period?

Less than 25% [] Between 25-50% []

Between 50-75% [] Between 75- 100% []

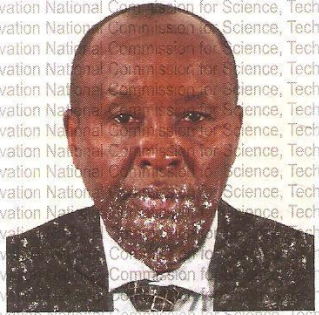
26. To what extend do you rate the following factors affects timely completion of road construction projects. React to the likert scale of 1 to 5. Where is 1. Strongly agree, 2. Agree 3. neutral / not sure 4. Disagree, 5. Strongly disagree

Statement	1	2	3	4	5
Delayed payment					
Variation in scope					
Delayed approvals by client					
Land acquisition issues					
Weather conditions					
Cost overruns					

THANK YOU

Appendix 3: Research permit

THIS IS TO CERTIFY THAT:
MR. JOHNSON MWANGI MATU
of UNIVERSITY OF NAIROBI, 0-300
NAIROBI, has been permitted to conduct
research in Nairobi County
on the topic: FACTORS INFLUENCING
PERFORMANCE OF CONTRACTORS IN
THE ROAD CONSTRUCTION SECTOR:
CASE OF SELECTED CONTRACTORS IN
KENYA
for the period ending:
30th June, 2017

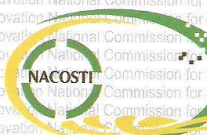


Permit No : NACOSTI/P/16/39452/12008
Date Of Issue : 1st July, 2016
Fee Received :ksh 1000

[Signature]
Director General
National Commission for Science,
Technology & Innovation

CONDITIONS

- 1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit**
- 2. Government Officers will not be interviewed without prior appointment.**
- 3. No questionnaire will be used unless it has been approved.**
- 4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.**
- 5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.**
- 6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice**



REPUBLIC OF KENYA
National Commission for Science,
Technology and Innovation

Serial No. A 9838
CONDITIONS: see back page