

**CONTRACT MANAGEMENT PRACTICES AND PERFORMANCE OF HOUSING  
CONSTRUCTION PROJECTS IN NAIROBI CITY COUNTY, KENYA: A CASE OF  
NATIONAL CONSTRUCTION AUTHORITY**

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**D53/CTY/OL/24472/2014**

**A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN  
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE  
DEGREE OF MASTER OF BUSINESS ADMINISTRATION (PROJECT  
MANAGEMENT) OF KENYATTA UNIVERSITY**

**NOVEMBER, 2018**

## DECLARATION

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Sign \_\_\_\_\_

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

For and on behalf of Kenyatta University

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## **DEDICATION**

I thank the Almighty for the strength to complete this project. This work is dedicated to my family with special mention of my parents, Dr. Samuel Ochola and Mary Ochola for without whose moral support, inspiration, and encouragement this work would have been very difficult to accomplish.

## **ACKNOWLEDGEMENT**

I would like to acknowledge my supervisor, Dr. Caleb Kirui, for his support and guidance. I would also like to acknowledge my entire family: My sisters and brother for their prayers, guidance, and support throughout the program. Thank you for believing in me.

I am also sincerely grateful to my friend Evelyn Bedajwok for her encouragement, and my classmates in the 2014 cohort at Kenyatta University. Above all, I would like to thank God for helping me accomplish all this.

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## **ABBREVIATIONS AND ACRONYMS**

<b>AAK:</b>	Architectural Association of Kenya
<b>C.V.I:</b>	Content validity Index
<b>G.O.K:</b>	Government of Kenya
<b>GNP:</b>	Gross National Product
<b>NACOSTI:</b>	National Council for Science and Technology
<b>NCA:</b>	National Construction Authority of Kenya
<b>NEMA:</b>	National Environment Management Authority
<b>SPSS:</b>	Statistical Package for Social Sciences
<b>MTIF:</b>	Ministry of Transport and Infrastructure
<b>NCC:</b>	Nairobi City Council

## OPERATIONAL DEFINITION OF TERMS

- Contract Management Practices:** Refers to all the activities done by NCA to ensure that all contractors undertake their duties in the house construction industry to the satisfaction and according to all the set standards in the construction industry
- Contractor Pre-qualification Practices:** Refers to all screening activities undertaken by NCA to ensure that only competent and qualified contractors undertake construction of houses
- Contractor Regulation Practices:** Refers actions taken by NCA to ensure discipline, ethics and compliance to policies and laws by contractors in the construction industry
- Contractor Sub-Contracting Practices:** Refers to the act of the NCA engaging other contractors to undertake whole or some of the work they were initially contracted to do and the considerations considered in doing so
- Contractor Supervision Activities:** Refer to activities undertaken by NCA and procuring entities to ensure that houses are constructed in strict adherence to industry standards on personnel qualification, materials and building technology
- Performance of Housing Projects:** Refers to construction of houses in accordance with the required quality, set time, set specification by the NCA and satisfaction of the client.

## ABSTRACT

The quality of housing projects in Kenya has been deteriorating without sufficient informing reasons especially from empirical literature. This is manifested in numerous cases of buildings collapsing across Kenya. This study will investigate the effects of contract management practices on the performance of housing construction projects in Nairobi county Kenya. The objectives of the study were to investigate the effects of the following contract management practices on the performance of housing construction projects in Nairobi City County, Kenya. The specific objectives were contractor pre-qualification, contract regulation practices, contract supervision practices and contract sub-contracting practices on the performance of housing construction projects in Nairobi City County. The study utilized descriptive research design. The target population was housing construction projects in National Construction Authority comprising of 66 respondents. A census of 66 respondents was carried out. The study relied on primary data collected using a questionnaire whereby a response rate of 58 respondents was achieved. Reliability test was ensured through Cronbach's Alpha and validity was ensured through content validity. Descriptive statistics and inferential statistics such as regression analysis and correlation analysis were used to analyze quantitative data. Qualitative data was analyzed using content analysis based on the thematic areas. The study concludes that facing the owner's scrutiny regarding its competency to handle the business aspects of the operation during prequalification allows the contractor to focus on the specifics of the construction project once it has passed through prequalification and been short-listed. Supervision has a key role to play in preventing accidents. Typical supervisory functions include planning and allocating work, making decisions, monitoring performance and compliance, providing leadership and building teamwork, and ensuring workforce involvement. The main reasons contractors engaged subcontractors were to provide skilled labour, reduce overhead costs and minimise work and financial pressure on the contractors. Sub-contractors are sometimes unable to perform in their full capacity due to unfavourable project environment and poor quality of management by the main contractor. The study recommends that one important step that can be taken to ensure project success in safety is to prequalify and select only those contractors who are fully qualified by virtue of their safety programs and performance. The composition of the regulatory framework that governs the Kenyan construction industry should include specialized bodies mandated to champion for regulations in order to streamline the building industry. The level and nature of supervision required should be determined as an outcome of the client's management arrangements for the project and from the risk assessments carried out by contractors and others. There should be a cooperative relationships and mainly integration of subcontractors into partnering approach in order to reduce adversarial relationships. The findings of the study would feed policy and practice on the construction industry by highlighting the gaps in the contracting arrangements in the industry and make workable recommendations.

## CHAPTER ONE: INTRODUCTION

### 1.1 Background of the Study

Construction is a critical industry for all societies across the world. When the construction industry is examined from a global context, its socio-economic significance becomes obvious. Construction industry performs a prime function in improvement and success the objectives of society. Construction is one of the biggest industries and contributes to approximately ten percent of the Gross Domestic Product (GDP) in industrialized countries. Generally, the industry contributes to eleven percent of GDP in the majority of developing nations (Giang & Pheng, 2010).

The need and demand for housing is on an ever increasing trajectory. UN-Habitat (2010) reported that the urban population is rapidly increasing, especially in the developing world, and thus national governments are challenged with the major task of providing decent accommodation for their people. For instance, UN-Habitat (2013) reveals that the world's city populace in 2011 was 3.63 billion citizens, equivalent to 52.1percent of the sector's general populace; this figure will amount to 6.25 billion citizens by 2050 and will make up 67.2percent of the global population. In developing nations, 5.12 billion citizens are expected occupy urban centres by the year 2050. Kenya has a deficit as far as housing of its population is concerned. The estimated housing demand in urban areas is approximately 150,000 units per year yet the current supply is about 30,000 units (HASS, 2013)

However, many developing countries are experiencing rapid growth in population and urbanization. As a result, provision of adequate housing remains a major challenge facing governments in those countries (Bredenoord & Lindert, 2010). Under the Vision 2030, the Kenyan government has dedicated to offer sufficient, lower priced and high-quality housing for all residents, mainly to the low income earners. The situation of the shortage of houses was aptly captured by Bredenoord and Lindert (2010) who reported that there was a huge backlog in terms of service and housing provision especially, low cost housing. The housing challenges include, housing shortage, mushrooming of informal settlements, overcrowding in the townships and flats.

Apart from the shortage of housing units, other challenges facing housing construction projects include failure of started housing projects, poor quality of housing projects and non-completion of houses which is rampant. Non-completion and underperformance in contracted construction projects is a global phenomenon that has attracted the attention of researchers, scholars and industry players. A study Aberdeen Group (2013) - a research and consultancy firm in the energy sector in the United Kingdom- suggest that there is a good sized loss of money because of ineffective management of project contracts. The study found out that enterprises lose US\$153 billion each year due to ineffective project contract management.

There are many causes of the failures of housing projects. A study done by Fapohunda and Stephenson(2010) in UK found that in construction,disagreement exists between the projects stated objectives with respect cost, time and value. In Ghana, Ofori (2012) diagnosed 5 elements as the critical reasons of delays to initiatives. They embody month-to-month rate problems to contractors, terrible contract management, material procurement issues, and horrific technical performance and fabric rate escalations. Terrible professional management, fluctuation of costs, developing price of substances and negative web page manage have moreover been diagnosed as factors contributing to undertaking not being complete on time.

There is evidence that the performance of contracted construction in Kenya is poor. One study established that over 70percent of the projects initiated are likely to escalate with time and costs (Nyangilo, 2012). This has been justified through research in the Kenya's construction enterprise that have made findings to the impact that value overrun, not on time of completion duration, conflicts in the complex vendor relationship, poor agreement control practices, extortion and corruption, awful risk mitigation and awful best work are the norm instead of exception in the task of contracted creation tasks (Kibuchi & Muchungu, 2012; Lepartobiko, 2012; Chuah et al., 2010). That is the motivation of undertaking this study.

### **1.1.1 Performance of Projects**

Project performance consists of carrying out the activities with the aim of delivering the outputs and monitoring progress compared to the work plan (Gorog, 2013). Lee, Hong, Katerattanakul and Kim (2012) show that to implement a project means to carry out activities proposed in the application form with the aim to achieve project objectives and deliver results and outputs. The

authors also note that project participants, adequate schedule and adequate cost estimating and budget contribute to a project being successfully implemented relative to completing the grant scope within budget, on schedule, and meeting quality requirements.

There are many definitions of a project. According to Cho and Gibson (2011) define project as a chain of duties or events desired to attain a precise objective within specific technical specifications, in a distinct start and end, and with respect to grant confines and useful resource availability. Similarly, Nogeste and Walker (2013) define a project as a unique procedure, which include a fixed of co-coordinated and controlled events with a start and an end, undertaken to reap an objective conforming to unique necessities, along with constraints of time, value and assets.

The success of any project according to Ashley et al (2012) is fairly depending on its finishing time from start to the delivery of results. This has a proper away referring to management selections which include budgets, goals and standards. The whole project is made from complex series of movements that combine capabilities and know-how to produce a precious end result. A fully completed project has been defined because the extent of success of high quality try or project which pertains to the prescribed goals or dreams that form the venture parameters. It's the crowning glory of the project goal that allows achieving the preferred overall performance signs in three key regions: scope, schedule and finances (Amin, 2011).

According to Akintoye and Takim (2002) project completion enables the evaluation of seven undertaking performance signs, specifically: construction cost, creation time, value predictability, time predictability, defects, client satisfaction with the product and patron pleasure with the service; and 3 enterprise performance indicators, particularly: protection, profitability and productivity. That is compounded by the fact that projects in the construction enterprise have complexity in their nature because they consists of a large wide variety of events inclusive of customers, contractors, experts, stakeholders, shareholders, regulators and be afflicted by many problems and complicated troubles in performance, along with cost, time and protection (Shaban, 2008).

Auma (2016) found that the cost of equipment and materials, cost of variation orders, cost of rework and escalation of material prices are the cost factors that affect the performance of

construction project. The fundamental demanding situations impeding crowning glory of projects can be resolved through the usage of effective settlement control due to the fact they may be basically human, substances and logistics trinity.

### **1.1.2 Contract Management Practices**

There are many definitions of contract management because of the breadth of the activities involved. Contract management consists of negotiating about terms and situations in contracts, adhering to compliance and documentation of arising deviation that might happen during project implementation process. It is able to be summarized as the procedure of systematically and effectively dealing with settlement introduction, execution, and assessment for the principle of maximum utilization of financial and operational performance and risk minimization (Bhardwaj, 2011). Some other definition of settlement control is the technique that guarantees that all events to a contract fully meet their responsibilities, so that it will fulfill the operational objectives of the settlement and the strategic enterprise dreams of the client (Van Weele & Vander Puil, 2013).

The reasons for contract management are many, varied and sometimes inevitable especially in the construction industry. It is a regular practice for corporations to involve contractors or suppliers in a single manner or some other to help in presenting service or product to satisfy its supposed requirements in some form of contracts that require being controlled. Adoption of outsourcing and subsequent contract control events were intended to permit effective service delivery which refers to generating work that is of excessive great and diagnosed as proficient (Akintoye & MacLeod, 2014).

Badiru (2011) observe that contractor prequalification process assumes that implementing best practices and a standardized process will lead to improved identification of qualified contractors for specific work, and reduced costs, resources and time to complete each prequalification. According to Hiles and Wells (2015) the main reasons why firms prequalify their contractors are to minimize risk and to reduce the cost associated with procurement. Since one of the main goals is to reduce costs, it is critical to implement a streamlined prequalification process that does not require high out-of-pocket costs and is not resource intensive.

Simon (2015) observe that regulatory framework in which regulators challenge firms to improve based on constructive and active engagement can be effective in ensuring compliance before a serious problem emerges and regulatory framework governing the construction industry could seek legal capacity to prosecute errant developers. The author further observes that the composition of the regulatory framework that governs the Kenyan construction industry should include specialized bodies mandated to champion for regulations in order to streamline the building industry.

Robert (2016) indicates that contractor supervision is the least glamorous part of project work, but in several respects it is the most important. It is an exercise in collective problem solving, and as such, is one of the most effective ways of ensuring project success. Construction supervision is aimed at ensuring that a high standard of supervision of building project is systematically carried out by the project parties diligently throughout the construction period. According to Mastrandera (2016) construction supervision is therefore a continuous, participatory process as opposite to traditional supervisory visits which focus more on inspection and fault finding rather than on problem solving to improve performance.

Sturts and Schunk (2017) indicates that contractor subcontracting allow the subcontractor to be less vulnerable to fluctuation in business, have more flexibility in workforce coordination, and be able to reduce cost of management. According to Shimizu and Cardoso (2012) construction mismanagement might start with a single subcontractor, and cascade through the work force chain to affect the schedule and leading to damages to multiple parties. Therefore, issues in subcontractor should not be overlooked in defeating the challenge of achieving planned budget, cost and schedule.

Contract management has been proved to improve performance of projects and organizations. Cheroitich (2014) investigated the effects of contract management in state corporations. The study findings indicated that state companies exercise effective settlement management, which has a superb impact on their operational overall performance. The proposition of the study is that powerful contract control improves operational overall performance of country agencies in Kenya. Comparable studies have no longer been carried out on production projects.

### **1.1.3 Construction Industry in Kenya**

The collapse of buildings in Kenya has been on the rise killing many people. For example, a building was ordered to be demolished on 8<sup>th</sup> November 2013 when it nearly collapsed in Mombasa. Secondly, several people were feared to have died after a four storey building under construction came tumbling down at Spaki in Mombasa on Thursday 9<sup>th</sup> April 2013. Moreover, in Nairobi several cases have been reported like the infamous Kahonge building in river road which collapsed on 26<sup>th</sup> January 2014, another one in Kiambu in October 2015, in July 2015 in pipeline estate in Nairobi's Embakasi a 6 storey building was halted and 14 people trapped, June 2011, The Langata Building near Carnivore restaurant along the bypass collapsed (NCA, 2016).

The construction industry in Kenya is one of the key drivers of growth in the Kenyan economy. Indeed Kenya's vision 2030 has identified infrastructure development as one of the key enablers that will drive this country to become worldwide competitive and wealthy country with a high satisfactory of life by 2030. According to the Economic Survey of 2013, the industry accounts for about 7percent of the country's national income and absorbs about 1 million people with apredictableyearly wage bill of Sh 3.2 Billion. Construction is a critical component towards attainment of Kenya's sustainable economic growth and development. The industry has thus continued to make valuable contributions in transforming Kenya it a regional business hub. Many public and private infrastructure projects vital for the long term development of Kenya are being constructed thus spurring the growth of the Kenya's economy.

The studies investigated a myriad of factors but hardly on contract management. Were and Ngugi (2015) investigated the influence of technology on the performance of construction projects in Nairobi County. The study established that many projects do not succeed due to failure to utilize the suitable project management software to administer the budget, schedule, project activities and labour. Mungeria (2012) investigated the use of teamwork in construction projects and found out that teamwork has a strong, positive and statistically significant effect on the performance of construction projects.

Some of the studies have assessed the role of regulations. Ndumia (2015) conducted a study on the role of regulatory framework on the performance of building construction projects in Nairobi. The study found out that the regulators who included NCA, NEMA and the county government

of Nairobi had a regulatory regime in place and that they had a code of conduct for all the professionals involved in construction projects. However, they identified that the compliance levels remain unclear.

Mbugua (2014) investigated the causes of failure in buildings in Nairobi and seemed to exonerate professionals in the construction industry from culpability in the cases of massive failures of construction projects in Nairobi. It was found out that most challenges local contractors face were caused by factors which are not within their control. The challenges included delayed payment by clients, suppliers default, government, delayed instructions by the architect and lack of sufficient involvement by structural engineers and quantity surveyors. Kihoro (2015) on the factors affecting the performance of construction of gated communities in Nairobi found a strong positive association linking project preparation, stakeholder management, competence of project team and performance of the project.

In Kenya, the construction practice is implemented by a range of professionals of varied education and expertise, namely: Land Surveyors, Project Managers, Architects and designers, Quantity Surveyors, Engineers, Contractors, Builders, Estate and marketing agents and Facility Managers (Buildafrique Consulting Limited, 2011). The National Construction Authority Act was assented to on 2<sup>nd</sup> December 2011. It was formed with the aim of overseeing the construction industry and coordinating its development. The authority was established whilst the industry was beneath amazing stress to counter numerous challenges, especially the ones relating best warranty. There is an urgent need to streamline the construction industry as a way to develop Kenya's economic system.

## **1.2 Statement of the Problem**

Cases of building collapsing in Kenya and in Nairobi have become commonplace in the recent past. Public condemnation and outcry has followed mostly directed at owners of the building and the government in case of public building and the involved professionals (Buildafrique Consulting Limited, 2011). This is despite the fact that the construction industry is guided by strict policy and standards guiding the operations of the involved construction authorities. It is the gaps in honouring these contractual obligations by the involved professionals and the subsequent effect on the quality of housing construction projects that have motivated this study. Various causes have been attributed to this failure of construction projects. According to Voice

of America (2014), most of the cases are in low income neighborhoods where there is little or no inspection. According to Transparency International (2014), contractors and owners of the buildings bribe the inspection unit of the Nairobi City County Government to bypass the inspection process. Endemic corruption and poor reporting structures have also been faulted (DFID, 2013).

Ministry of Transport and Infrastructure Development (MTID) reports on collapsed structures apportion the blame to lack of proper supervision and poor construction procedures (MTID, 2016). Other challenges cited ranging from loopholes in contractors registration, irregularities in contracts award, unprecedented project failures, lack of capital and corruption in the building sector among others (National Construction Authority, 2011). The unexplained pattern of massive failure of housing construction projects has resulted to a number of questions.

Contract management practices have been investigated and confirmed as one of the causes of failure in construction projects. The studies have found that conflicts in the complicated seller association, terrible contract management practices, extortion and bribery, bad risk mitigation and negative first-class work are the norm as opposed to exception within the task of gotten smaller construction tasks (Kibuchi & Muchungu, 2012; Cleland and Bidanda, 2009; Lepartobiko, 2012; Chuah et al., 2010). Kibuchi and Muchungu (2012) observed that notwithstanding high education levels of experts within the building industry in Kenya and regulation of the enterprise in essential urban regions, production initiatives do not continually meet their objectives. This is manifested by using countless tasks which have value overruns, behind schedule duration and low standards resulting to collapsed buildings in numerous parts of the country, high upkeep costs, disillusioned clients or even homes which are not functional. There is hardly any study investigating contract management practices in the housing construction industry. This is the research gap that this study sought to fill and generate knowledge on the gaps in contracting practices that has resulted in noticeable failure in performance of housing projects in Nairobi County.

### **1.3 Objectives of the Study**

#### **1.3.1 General Objective**

The general objective of the study was to investigate the effects of contract management practices and the performance of housing construction projects in Nairobi City County, Kenya.

### **1.3.2 Specific Objectives**

- i. To investigate the effects of pre-qualification practices on the performance of housing construction projects in National Construction Authority.
- ii. To assess the effect of regulations practices on the performance of housing construction projects in National Construction Authority
- iii. To find out the effect of supervision practices on the performance of housing construction projects in National Construction Authority
- iv. To determine the effects of sub- contracting practices on the performance of housing construction projects in National Construction Authority

### **1.4 Research Questions**

- i. How do pre-qualification practices affect the performance of housing construction projects in National Construction Authority?
- ii. What are the effects of regulation practices on the performance of housing construction projects in National Construction Authority?
- iii. What are the effects of supervision practices on the performance of housing construction projects in National Construction Authority?
- iv. How does sub-contracting practices affect the performance of housing construction projects in National Construction Authority?

### **1.5 Significance of the Study**

This study would be of benefit to many people and organizations. These include the members of the public who would understand the causes of lapses in performance of housing construction projects and how to overcome this problem. The government and the authorities charged with regulating construction projects would understand the gaps in contracting that causes failures in housing projects. The contractors, engineers, designers, architects and owners of housing construction projects would be advised by the study on the needed precautionary measures to take into account in undertaking the projects. Additionally, investors interested in the housing sector would understand the prevailing regulatory and contracting situation. Future researchers and academicians would also get valuable information from this study.

## **1.6 Scope of the Study**

The study was carried out in National Construction Authority (NCA) in the county of Nairobi. The respondents were engineers in the departments that regulate construction projects in NCA. The study used questionnaires as data collection instrument. The scope of investigating the contract management practices was limited to the study variables of pre-qualification practices, contract regulation practices, contract supervision practices and sub-contracting practices. Other contract management practices were not studied. The study focused on the performance of housing projects for the last 5 years (2012-2016).

## **1.7 Limitations of the Study**

The study met several limitations particularly in the data collection phase. The respondents were reluctant to offer some critical information that they consider as an indictment to their work and fear negative reprisals by participating in the study. They were guaranteed of the discretion of the information they expose. Further assurances were made that the study would only be used for academic purposes only. Letters of authorization to collect data from the university and National Council for Science and Technology (NACOSTI) were used to persuade them to participate in the study as well as verbal persuasion on the same. The respondents could be too busy to fill in the questionnaire in a single sitting and to surmount this challenge the study adopted drop and pick method of data collection to ensure a high response rate. The respondents of the study were likely to be working in the field in different part of the city making data collection a laborious task.

## **1.8 Organization of the Study**

This study was organized in five chapters. Chapter one constitutes the background of the study, statement of the problem, objectives, significance, scope, limitations and organization of the study. Chapter two comprises of the theoretical literature review, empirical literature review, summary of literature review and research gaps and conceptual framework. Chapter three encompasses the methodology which presents the research design, target population, sampling design, research instrument, data collection procedure, data analysis and ethical considerations. Chapter four constitutes the research findings and discussion which presents the response rate, background information, descriptive statistics, inferential statistics and analysis of qualitative

data. Chapter five presents the summary, conclusion, recommendations for policy and practice, and recommendations for further study.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter contains a review of theoretical and empirical literature on the study variable. It also contains a conceptual framework graphically showing the relationship between study variables. It is organized as follows;

### **2.2 Theoretical Review**

The study will be guided by the following theories;

#### **2.2.1 Principal-Agency Theory**

The regulator and the contractors undertake their mandate on behalf of the people and thus the relevance of the principal- agency theory with the public as the principal and the actors in the construction industry as the agents. According to Oluka and Basheka (2012)the underlying principle of the major-enterprise concept is that there ought to be a clean know-how of the desires of the most important and potential of the agent to meet those desires adequately. Main need to carefully monitor marketers' performance; create praise structures that strengthen favored overall performance.

Whilst a procurement agreement is nicely defined and deliberate, the predominant and marketers locate it clean to meet desires of each other in an green way ensuing into well timed execution of the agreement (Oluka & Basheka, 2012). The theory is crucial to the study as it highlights the need for robust settlement necessities and specs as well as the objectively system of monitoring contractors' standard overall performance. The theory also is relevant to the study in establishing the quantity the regulators and contractors act on public hobby and the issues inflicting the breaches of foremost corporation dating. The theory will guide in evaluating the activities of the National Construction Authority as the agent of the people of Kenya in supervising and regulating contractors. This theory explains sub- contracting practices variable.

#### **2.2.2 Project Management Competency Theory**

One of the informing reasons for all the contract management practices is to ensure the competency of the contracted party on many fronts and thus the use of this theory to guide this study. This theory was developed by McClelland and McBer (1980). Competence is normally

universal, but, as encompassing information, capabilities, attitudes and behaviors which are causally related to advanced process overall performance.

Crawford and Bryce (2013) said that professional competence in task control is attained by using mixture of knowledge received from education and its next utility and other capabilities evolved inside the course of labor. Previous management studies have investigated the impact of competency on performance. Smith et al (2009) have argued for a competency based performance model for construction project managers in which managerial conduct enter is appraised and 9 overall performance signs for PM competency are developed to include group constructing, management, selection-making, mutuality and approachability, honesty and integrity, communication, education, know-how and application, self-efficacy, and protection of outside relations. In the context of construction project management; it is assumed that if the project manager and the project team have all the required competence for the work then the project implementation will be successful.

This theory will guide the study in establishing competency in all areas of contracting including pre-qualification, regulation, supervision and pre-qualification. The project management competency theory will guide the study in establishing if the contract management practices are done in favour of public good or self-interest of the players involved. More so the pre-qualification of contractors and sub-contracting that is done without much public participation or involvement of the procuring entities. This theory explains the contractor pre-qualification practices variable.

### **2.2.3 Public Interest Theory**

Immense public interest is embedded in the housing construction industry and the government has established some fully fledged departments and specialized agencies to monitor, regulate and supervise the industry. This theory was propounded and tested by Becker (1986) who conducted a study on Public Interest Theory. Results of the empirical studies support several conclusions. First, evidence adds additional support to the Peltzman (1943) theory of regulation. Nearly all of the variables tested support the hypotheses arising from the theory. Second, the evidence supports the conclusion that the Peltzman theory is preferred to that of the simpler predatory

theory of regulatory capture. Whilst the predator's authority is critical, it isn't always decisive. The general public's interest may be and is maintained in lots of states.

A third conclusion which can be drawn concerns the protection of the public interest. We now have some initial evidence which presents an explanation as to why the public interest is in some cases included, even when it is in direct war with the interests of an industry or professional group. What the evidence suggests is that it isn't always the compassion of the legislator which yields this result. To the contrary, it is the self-pastimes of the legislator and the motivation to shield the ones self-hobbies which results in this end result, in particular when the public's awareness and voting participation are high (Schubert, 2009).

Estlund *et al.* (2009) show that the exchange of products and production factors in markets assumes the definition, allocation and announcement of character assets rights and freedom to contract. The assurance of property rights and any critical enforcement of agreement compliance can be greater successfully prepared collectively than for my part. Furthermore, the prices of marketplace transactions are decreased via manner of assets and settlement regulation. The liberty to agreement can, however, additionally be used to advantage cooperation amongst occasions against market operation. Agreements amongst producers deliver upward push to prices deviating from the marginal fees and an inefficient amount of products is located in the marketplace.

This theory on public interest will guide in establishing if the technical bits of contract management practices are in sync with the public interest requirement as captured in the existing statutes, policies and code of conduct of the involved professionals. As such all the contract management practices will be evaluated on the provision of public interest elucidated in this theory. This theory explains contractor regulations practices variable.

#### **2.2.4 Leadership Contingency Theory**

Fiedler (1964) presents the theory of Fiedler leadership contingency model theory in which he proposed that effective employees performance depended upon the proper match between a leaders' ability to lead is contingent upon situational factors that include the leaders' capabilities, preferred style, and behavior, competency of employees. This theory propounded that leaders

should adopt that style which best to the situation and immediately stimulate the employee performance.

This theory is relevant to the study as it shows that an effective leader has a responsibility to provide guidance and share the knowledge to the employee to lead them for better performance and make them expert for maintaining the quality of work during project implementation process and providing necessary support to project team members is such a great responsibility. The introduction of clear standards of leadership promotes the core values and maturity on their role and responsibility thus effective and efficient project implementation. The theory explains contractor supervision practices variable.

## **2.3 Empirical Review of Literature**

The empirical literature for the study as guided by study variables are organized as follows.

### **2.3.1 Contract Management and Performance of Construction Projects**

Mutua, Waiganjo and Otayo (2015) study assessed the effect of contract management on performance of outsourced projects in Nairobi. They found out that essentially contract management had a positive relationship with project performance. Contract management and other factors led to 66percentdifference in project performance and dispute resolution mechanism were rated as important contractual devices. The study recommends the introduction of contract management training and certification for project managers and project team members to enhance project performance. Camen, Gottfridsson and Rundh (2012)also studied operational factors influencing strategic partnerships social housing in the UK. They conclude that poor management of expectations between partners undermines trust and confidence in the process. As the authors suggest, contracts function as a basis in building relationships.

In a study done by Ronnberg- Sijodin (2013) on life cycle viewpoint on buyer-supplier relationship in process the process of developing projects, it was concluded that close contact and training with end-users is essential for enhanced operational performance. Smith, Peter, Damien and Peter (2014) conducted a study on effects of early contractor involvement (ECI) in public procurement in Australia, and discovered that the method can greatly improve procurement process and enable firms to achieve their value for money.

### **2.3.2 Contractor Pre-qualification Practices and Performance**

Cases of incompetent contractors in practice have been cited as an indictment on the pre-qualification process. Cases of collapse of buildings which lead to subsequent loss of lives and property are prevalent in Kenya. This can be attributed to a variety of reasons which include poor designs and non-compliance, greedy property owners, cost cutting and use of sub-standard materials, lack of quality control, and use of incompetent contractors (Lidonga, 2014). Registration is a key determinant on the quality of any profession. The contractors in the construction industry are registered by NCA but not without challenges as captured by empirical literature.

The role of authorities in pre-qualification has been assessed. Gacheru and Diang'a (2015) studied the regulation of building contractors in Kenya and challenges of enforcing the National Construction Authority mandate. Data was obtained from building contractors by means of questionnaires. Results showed that the major challenges to the effectiveness of the NCA in registering and regulating the practices of building contractors were corruption, poor sensitization, lack of proper organization of the NCA contractor training programs and centralization of the NCA services.

Pre-qualification of contractors has been assessed in housing construction projects and other quarters but not in Nairobi County. Gudah, Omboto and Tubey (2017) found out that contractor selection criteria affected implementation of housing projects in Kisumu County. contract initiation activities have many events. Rendon (2010) defined that at pre-qualification phase, there must be education of body of workers, clear strategies of engagement, relationships constructing, resource allocation to initiatives, leadership and regulations all of that have direct effect on ensuing contractors' overall performance consequences. The agreement introduction action installation the performance expectations for the challenge.

Inadequate pre-qualification and engagement of contractors often leads to incompetent contractors undertaking contracts they lack capacity to execute. Kuta and Nyaanga (2014) investigated the effect of competence of contractors on the construction of substandard buildings in Kenya. The study targeted contractors operating in Nairobi metropolitan. Results showed that competence and qualifications of contractors influenced construction of standard buildings. It

was also revealed that there was bidding for works by contractors which many lack capacity to execute.

### **2.3.3 Contractor Regulation Practices and Performance**

Building guidelines are statutory units that are seeking for to make sure that the constructing guidelines set out within the relevant rules are completed. In constructing, law includes registration of contractors, initiatives, skilled construction workers, production website online supervisors, education establishments, and provisions referring to series and price of the construction levy (G.O.K, 2012).

Umeokafor, Umeadi and Jones (2014) reviewed the compliance with occupational safety and health regulations in Nigeria's construction industry. Results showed that key issues to compliance with occupational safety and health regulations in the Nigerian construction industry include: client's influence, inadequate enforcement (which ranked highest), lack of adequate regulations and unemployment, which ranked lowest.

There are various ways regulators intervene in the construction industry. The construction regulation authorities cast off corruption instances within the constructing industry, emphasize on each cloth exceptional and contractor overall performance, and revise the constructing codes to make certain relevance (Nahinja, 2014). In line with Mohammed (2010), construction guidelines need to contain a provision that the contractor who plans to carry out any creation shall earlier than sporting the paintings notify in writing the in a position authority for construction making plans.

Ndumia (2015) conducted a study on the role of regulatory framework on the performance of building construction projects in Nairobi. The study found out that the regulators who included NCA, NEMA and the county government of Nairobi had formulated a statutory and regulatory framework to include virtual device for management of developments applications which involves the general public and stakeholders in coverage system, NEMA effectively implements environmental regulations, proposes powerful mitigation measures for giant bad influences of building construction initiatives and NCA registers and certifies constructors, often publishes the code of behavior for the constructing construction enterprise. the study concludes that a regulatory framework in which regulators venture firms to improve based totally on positive and

active engagement may be powerful in ensuring compliance earlier than a extreme hassle emerges and regulatory framework governing the development enterprise should are seeking for prison capability to bring to court naughty developers.

The quality of the regulation of contractors in Kenya looks ominous. Gatheru (2015) investigated the challenges facing the NCA and made damning indictment of the capacity of the regulator because of the challenges they encounter. These challenges included: Inadequate capacity to detect errant behaviour in contractors by conducting frequent random surveys; poor enforcement of regulations; inadequate sensitization; and poor attitude of contractors towards the NCA

### **2.3.3 Contract Supervision Practices**

A study by Bhardwaj (2011) on the Ministry of Transport and Infrastructure Development (MTID) reports on collapsed structures apportion the blame to lack of proper supervision and poor construction procedures (MTID, 2016). Wambugu, (2013) concluded that insufficient supervision and inspection of work in construction project led to rework in times of poor workmanship and this caused delay in assignment well timed of entirety. This also ends in venture price overrun and may end result to project abandonment. Insufficient site inspection is one of the elements recognized as causing undertaking delays 16 in well timed completions.

Githenya and Ngugi (2014) on implementation of housing projects in Kenya and underscored the need to supervise contractor especially on competency of contractors. The study aim was to assess project planning, project control, motivated project team and project management competency, on housing project implementation in Kenya. It was found out that that project planning, project control, motivated project team and project management competency have a great influence on housing project implementation in Kenya. Project Control measures was found to be the most significant with correlation coefficient of 76.6percent element influencing implementation housing projects in Kenya.

Ayuba, Olagunju and Akande (2011) assert that the higher the percentage of clay and silt content in sand used in concrete production, the lower the compressive strength of the hardened concrete. Fawehinmi (2012) investigated quantity surveyors' perception of construction health and safety regulation in Nigeria. Results showed that construction health and safety was still perceived to be more important than the traditional project parameters in the form of cost and quality.

Rendon(2010) observes that the best protect against agreement termination via the contractor need to be availing of qualified personnel, clean procedures, assets, relationships rules and management all of which have direct effect on ensuing contractors' performance effects.

Mwangi (2015)in his study identified risk management practices at construction project planning phase include: risk identification and profiling, architect/engineer selection; site selection and validation, needs identification and validation and cost and schedule development. Auma (2014) results showed that contractors should occasionally perform quality assurance training and follow up since a higher percentage of respondent have agreed that quality assurance training and follow up is a factor that affect the performance of construction projects.

Githenya and Ngugi (2014) assessed project planning, project control, motivated project team and project management competency, on housing project implementation in Kenya. The study employed descriptive study. Data was collected using questionnaires for project managers. The study found that project planning, project control, motivated project team and project management competency have a great influence on housing project implementation in Kenya. Project Control measures were found to be the most significant with correlation coefficient of 76.6percent element influencing implementation housing projects in Kenya.

#### **2.3.4 Sub- Contracting Practices and Performance**

The reasons and effects of the use of sub-contracting practices has been confirmed by empirical studies. Rafik, Hinze, Arshad and Hamza (2016) investigated the reasons and challenges embedded to sub-contracting practices in the construction industry. They found out that the main reasons for subcontracting include obtaining value discounts, securing admission to specialised services, and chance sharing. The study additionally found out that the usage of direct exertions was observed to be an unprofitable proposition due to the high level of uncertainty, fluctuations in production workload, and better administrative overhead costs. Results display that fifty three percent of the respondents were happy with their present day subcontracting experiences, while forty seven of the respondents want fine adjustments to be made in subcontracting arrangements.

Studies have laid out the framework that prime contractors should set for the sub-contractors to ensure success. Hatami and Behsan (2012) observed that contractors are more compliant of dangers which are stated in contracts than of different kinds of threat. Contractor performance is

focusing at the traits of each assignment, the contractor's level of participation, and how that impacts contractor performance. Abbasnejad and Moud (2013) discovered that most tasks writhed from delays, implementing foremost damage on contractors, and that these damages had been insupportable and deeply motivated the contractor performance. Additionally, Oshodi and Iyagba (2015) investigated the effects of sub-contracting and concluded clients, consultants and contractors must ensure that clients recruits equipped specialists and make progress price on time. Specialists need to manage the design and construction phase professionally that allows you to reduce changes all through production and not depart this to sub-contractors. Contractors have installed-vicinity adequate finance, material and agenda control system to manage the development segment of any project.

Kimani and Kimwele (2015) study aimed at identifying factors that influence project delays in Kenya: a case of National Housing Corporation. The study found that majority of the respondents agreed that organizational structure, finance, contract management and labour influence project delays whenever projects are sub-contracted. Pourrostan and Ismail (2011) on effects of contractors on performance of construction projects that for the period of construction, inaccurate estimates, lack of conversation between the events, barriers from authorities, past due in reviewing and approving design documents by using consumer, lack of consultant's experience, fallacious construction approach by means of subcontractors, bad climate, bad settlement management by way of consultant, low productiveness level of labours, troubles with subcontractors, sort of venture bidding and award, trouble with neighbours and placement situation and shortage of labourers.

The financial standing of the sub-contracted parties has been cited as a key concern. Abdul-Rahman *et al.* (2015) a weak financial position may result in a contractor's financial failure, leaving the contractor unable to fulfill the requirement of the contract which will lead to the occurrence of abandoned housing projects. Olusegun and Akintunde (2015) also evaluated the basis for failure of sub-contracted work and found that the results suggest that cash flow related troubles are the primary reasons of delays at the same time as time and cost overruns are the foremost identifiable outcomes of delays in production projects. However, good enough assignment planning and budgeting had been cautioned as viable methods of minimizing the occurrences of delays. The totality of the sub-contracting situation in the Kenyan housing

constructing industry is not clear for lack of a comprehensive study on the same. That will be the province of this study.

## 2.4 Summary of Literature Review and Gaps

**Table 2.1: Summary of Literature and Research Gaps**

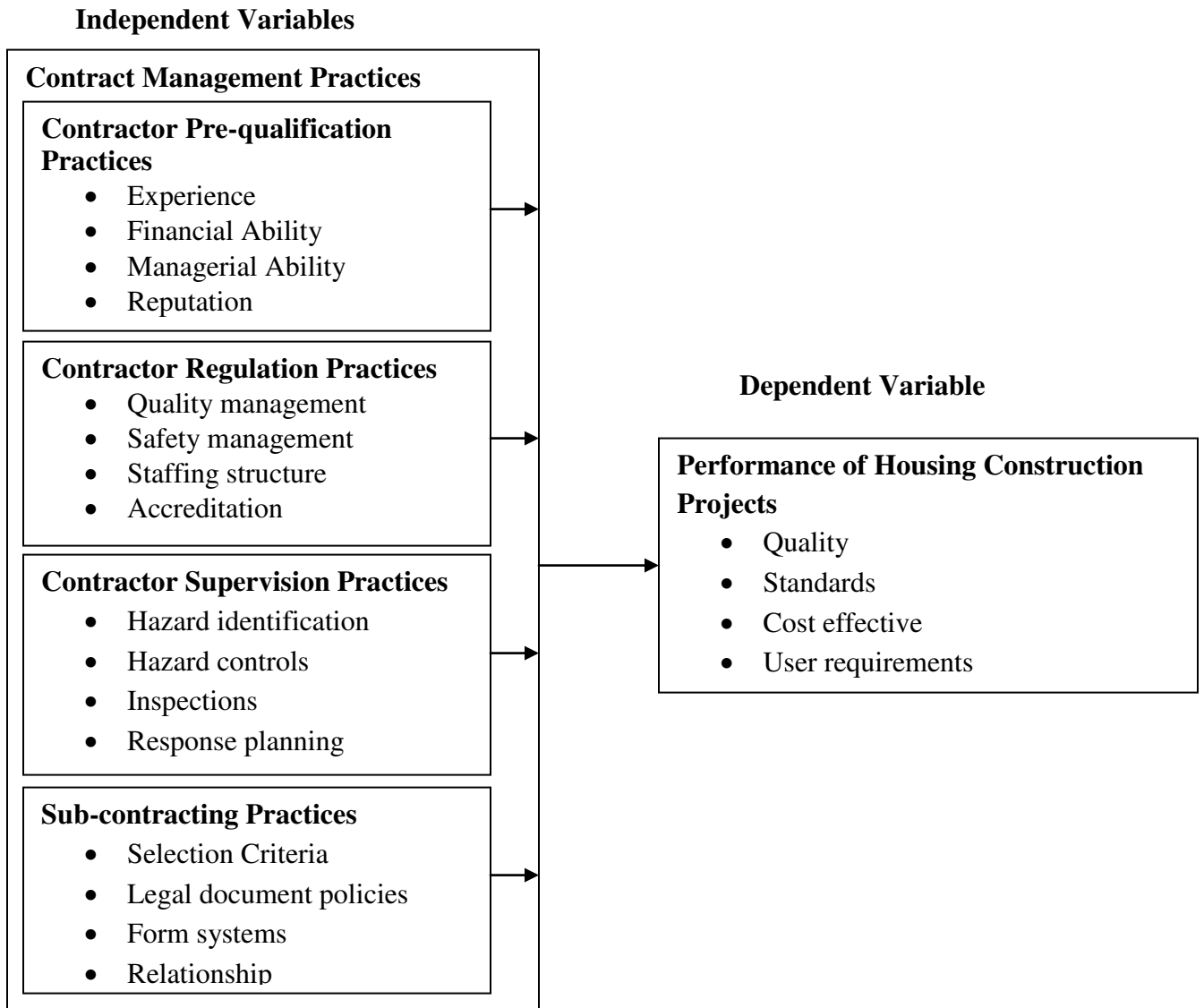
<b>Author and Year</b>	<b>Title</b>	<b>Findings</b>	<b>Gaps</b>	<b>Focus of current study</b>
Ngugi (2015)	Influence of technology on performance of housing projects	Inappropriate software to manage budgets and schedules lead to poor quality projects	The study focused on contractors and use of technology.	Contract management practices and project performance
Cheroitich (2014)	Contract management practices in state corporations	A significant positive relationship between variables	Cross-sectional research design	Descriptive research design
Ndumia (2015)	Role of regulatory framework on building construction projects in Nairobi	Construction authorities such as NCA and NEMA have gaps in enforcing regulations and supervision	Purposive sampling method	Stratified sampling method
Mbugua (2014)	Causes of failure of building construction in Nairobi	Payment systems, supplier default and delays by suppliers engineers lead to poor quality of housing projects	Qualitative data	Quantitative data
Kihoro (2015)	Project management practices affecting performance of gated community projects in Nairobi	Project planning, stakeholder management and competence of project management teams affect performance of housing projects called gated community	Community projects	Housing construction projects
Gacheru and	Influence of	Regulation by NCA	Purposive	Stratified

Ndianga(2016)	regulation of contractors on performance of building projects	were inadequate and sensitization by NCA affect building projects	sampling method	sampling method
Gruah, Ambuto and Tubey (2017)	Contract management practices and implementation of construction projects in Kisumu	Contractor selection and contract initiation practices affected implementation of construction projects	Project implementation	Project performance

**Source: Researcher (2018) and Literature Reviewed**

## 2.5 Conceptual Framework

The conceptual framework shows the relationship between variables. The independent variables are contractor pre-qualification practices, contractor regulation services, contractor supervisory practices and sub-contracting practices and the dependent variable is performance of housing construction projects.



**Figure 2.1: Conceptual Framework**

**Source: Researcher (2017)**

## CHAPTER THREE: RESEARCH METHODOLOGY

### 3.1 Introduction

This chapter describes the definition of research design, type of research design, justification for the choice of research design, the identification of the population and target population, sampling frame, sampling technique, research instrument, data collection procedure and data processing and analysis

### 3.2 Research Design

The study adopted a descriptive survey research design and explanatory research design. As noted by Orodho (2005) explanatory research design attempts to connect ideas so as to establish cause and effects relationship between research variables. Descriptive survey research design was used due to the fact it would permit the researcher to generalize the findings to a larger populace. Surveys allowed the gathering of big amount of data from a big population in a cheaper way. It allowed one to accumulate quantitative facts which could be analyzed quantitatively using descriptive and inferential facts. Consequently, the descriptive survey was of high-quality approach to fulfill the objectives of this study.

### 3.3 Target Population

The study's unit of analysis was National Construction Authority and the unit of observation was project managers and project team members of NCA. The total number of respondents was 66 comprising of 6 project managers and 60 Project Team members from as shown in table 3.1.

**Table 3.1: Target Population**

<b>Category</b>	<b>Target Population</b>
Project Managers	6
Project Team Members	60
<b>Total</b>	<b>66</b>

**Source: NCA HRM Department (2015)**

### 3.4 Sampling Techniques and Sample Size

According to Saunders *et al.* (2011) sampling is a method by means of which a enormously small variety of individuals, objects or activities are selected and analyzed with the intention to find out something from the whole population from which they are selected. The purpose of

sampling may be to determine parameters or traits of the complete population with the intention to generalize the outcomes of the study. A census of 66 respondents was carried out.

### **3.5 Data Collection Instruments**

The study used questionnaires. The selection of questionnaire was guided through the nature of facts with a view to be accumulated, time to be had in addition to the objectives of the study. It enabled the researcher to collect more data over a short period of time. The questionnaire contained both closed and open-ended questions drawn in accordance with the set objectives of the study.

### **3.6 Data Collection Procedure**

Data collection equipment is the contraptions that are used to gather the necessary statistics had to serve or prove some facts (Mugenda & Mugenda, 2003). The study acquired primary data. The questionnaire comprised of two sections. The section one obtained the demographic characteristics of the respondent, while the second part consisted of questions in which the four variables are targeted. The questionnaire was designed in step with the targets of the study. Structured questions were used so that one can conserve time and money as well as to facilitate simpler analysis as they are in on the usable form; even the unstructured questions were used which encouraged the respondent to give an in-depth and felt reaction without feeling held again in revealing of any facts as observed by (Mugenda & Mugenda, 2003).

### **3.7 Pilot Study**

The pilot test comprised of 2 architects, building contractors and quantity surveyors. However, to make certain that the study findings are not compromised the respondents who participated inside the pilot examination were not involved in the final study. The pilot study was carried to assess the validity and reliability of the questionnaires.

#### **3.7.1 Validity of the Instruments**

Content validity focuses on how the questions in the questionnaire answer the research questions. The content validity was ensured by checking for clarity and proper meaning of words and using words that are clear to the respondents. To make sure that questionnaires are valid, content material validity was accomplished to examine readability and ease. Expert judgment was sought to touch upon the representativeness and suitability of questions and give guidelines of

corrections to be made to the shape of the research equipment. This assisted in improving the content material validity of the instruments. Moreover, provided the important revision and modification of the research tool thereby improving validity.

### 3.7.2 Reliability of the Instruments

Reliability was advanced by using many comparable objects on a measure, by way of trying out a numerous sample of people and by means of the usage of uniform check approaches as proposed by Mugenda and Mugenda (2003). A pilot test of 10 respondents from the sampled population was selected to test the reliability of the research instruments. In order to test the reliability of the instruments, internal consistency techniques will be applied using Cronbach's Alpha. The alpha value ranges between 0 and 1 with reliability increasing with the increase in value. Coefficient of 0.7 is a commonly accepted rule of thumb that indicates acceptable reliability and 0.8 or higher indicate good reliability (Mugenda & Mugenda, 2003). Therefore, a coefficient of 0.8 was acceptable for the study. Therefore, a coefficient of 0.801 was obtained which showed that the instruments were reliable. This is shown in Table 3.2.

**Table 3.2: Reliability Test Results**

<b>Research Variable</b>	<b>Cronbach's Index</b>	<b>Alpha</b>	<b>Number of Items</b>	<b>Comment</b>
Contractor pre-qualification practices	0.802		6	Reliable
Contractor regulation practices	0.754		6	Reliable
Contractor supervision practices	0.697		5	Reliable
Sub-contracting Practices	0.874		5	Reliable
Project performance	0.869		4	Reliable
<b>Aggregate</b>	<b>0.799</b>		<b>26</b>	Reliable

**Source: Research Data (2018)**

### 3.8 Data Analysis and Presentation

Before processing the responses, the completed questionnaires were checked for completeness to ensure consistency. The data was then coded to enable the responses to be grouped into various categories. Quantitative data was analyzed by descriptive analysis using SPSS (V. 17.0) to describe the influence of contract management practices on the performance of housing construction projects in Nairobi. Findings were presented using tables and charts. A Likert scale was used to analyze the mean score and standard deviation. Percentages, tabulations, means and other measures of central tendencies were used to present the data.

In addition, a multiple regression analysis was conducted in order to establish the influence of contract management practices on the performance of building construction projects. Regression analysis was used to predict the value of the dependent variable on the basis of the independent variables. The model for the regression analysis was as follows:

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

Whereby:

Y = Performance of housing construction projects

X<sub>1</sub> = Contractor prequalification practices

X<sub>2</sub> = Contract regulatory practices

X<sub>3</sub> = Contract supervision practices

X<sub>4</sub> = Subcontracting practices

ε = Error term/Erroneous variables

β<sub>0</sub> = the minimum change in Y when the rest of the variables are held at a constant zero

β = measure of the rate of change i.e. β<sub>1</sub> measures the rate of change in Y as a result of a unit change in X<sub>1</sub>.

### 3.9 Ethical Practices

Ethics in research calls for non-public integrity from the researcher. The goal of ethics in research is to ensure that no one is harmed or suffers adverse effects from research activities (Cooper & Schindler, 2011). To ensure these conventions are honored, participation in the study was voluntary and nobody was coerced to participate. Information gathered was handled with greatest discretion as was the identity of the respondents. It was ensured that the questionnaires

are non-invasive and the statistics accrued entirely for academic functions handiest and not for any other reason.

## CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSION

### 4.1 Introduction

The chapter presents the background information of the respondents, findings of the analysis based on the research objectives of the study. Descriptive and inferential statistics have been used to discuss the findings of the study.

### 4.2 Response Rate

The study targeted a sample size of 66 respondents comprising of 6 project managers and 60 project team members. Their response rate is shown in Table 4.1.

**Table 4.1: Response Rate**

Category	Administered	Responded	Percentage
Managers	6	5	83.3
Project Team Members	60	53	88.3
<b>Total</b>	<b>66</b>	<b>58</b>	<b>87.9</b>

**Source: Research Data (2018)**

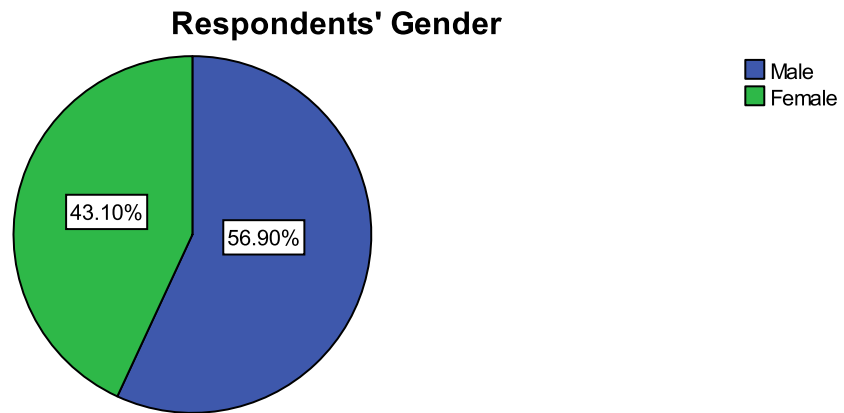
Table 4.1 shows that managers had a response rate of 83.3 percent and project team members 88.3percent. The overall response rate was 87.9 percent. Baruch and Holtom (2014) recommends that a response rate of greater of equal to 80.0 percent is sufficient for data analysis. This therefore meant that the overall response rate of 87.9 percent was appropriate for the study.

### 4.3 Background Information

On the background information of the respondents, the researcher was interested in knowing the gender, work experience, level of education and project management certification.

#### 4.3.1 Gender

The study sought to find the gender distribution of the respondents. The findings are presented in Figure 4.1.



**Figure 4.1: Respondents' Gender**

**Source: Research Data (2018)**

Figure 4.1 shows that majority of the respondents were male at 56.9 percent and female respondents accounted for 43.1 percent. This shows that both genders were well represented and the study could not suffer from gender bias.

#### **4.3.2 Work Experience**

The study sought to find the number of years the respondents had worked. The findings are presented in Table 4.2.

**Table 4.2: Respondents' Work Experience**

		<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Percent</b>
Valid	Less than 2 years	1	1.7	1.7
	2 - 5 years	5	8.6	10.3
	5 - 9 years	19	32.8	43.1
	10 years and above	33	56.9	100.0
	Total	58	100.0	

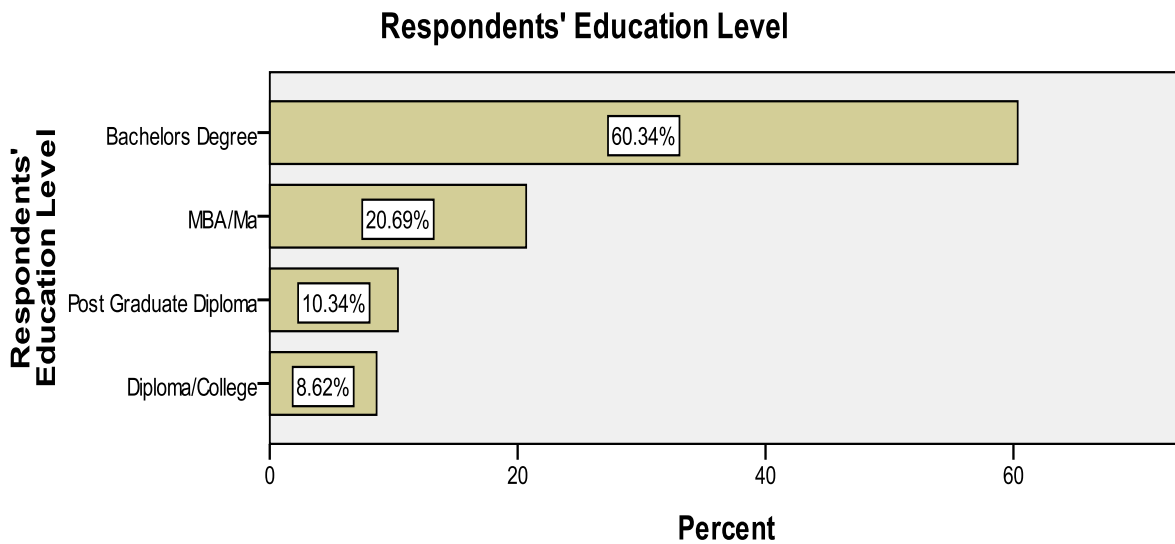
**Source: Research Data (2018)**

The results in Table 4.2 shows that majority (56.9%) of the respondents had a work experience of 10 years and above, followed by 32.8 percent with a work experience ranging between 5 to 9

years, 8.6 percent between 2 to 5 years and 1.7 percent less than 2 years. The cumulative frequency of 43.1percent indicated that majority of the respondents had worked for more than 5 years. These findings show that majority of the respondents had worked for a long period and so they had a wealthy experience on how contract management practices influences the performance of housing construction projects.

### 4.3.3 Level of Education

The study sought to the level of education of the respondents. The findings are presented in Figure 4.2.



**Figure 4.2: Respondents' Education Level**

**Source: Research Data (2018)**

The results in figure 4.2 shows that majority (60.34 percent) of the respondents indicated that they had a Bachelors degree level of education, followed by 20.69 percent MBA/MA, 10.34 percent Post Graduate Diploma and 8.62 percent Diploma/College. The study further established that majority (79.31percent) had a certification on project management while 20.69 percent did not have. These findings clearly indicate that majority of the respondents engaged in the study had attained higher level of education.

#### 4.4 Descriptive Statistics

Descriptive statistics such as means and standard deviations were used to present that quantitative data with the use of Statistical Package for Social Sciences (SPSS) version 17.0. These were presented as per the study objectives as follows

##### 4.4.1 Contractor Pre-qualification Practices

The first research objective sought to investigate the effects of contractor pre-qualification practices on the performance of housing construction projects in National Construction Authority. The findings are shown in Table 4.3.

**Table 4.3: Contractor Pre-qualification Practices**

<b>Statement</b>	<b>M</b>	<b>Sd.Dev</b>
Contractor experience influence the performance of housing construction projects	3.93	1.42
Contractor financial ability influence the performance of housing construction projects	4.03	1.43
Contractor management ability influence the performance of housing construction projects	3.90	1.26
Contractor reputation influence the performance of housing construction projects	4.19	1.19
Combination of pooled knowledge and technical capacities that allow an organization to be competitive in the marketplace is considered before contracting	3.79	1.47
Measurement of the quality of an organization's policies, products, programs, strategies is carried out before contracting	3.61	1.66
<b>Aggregate</b>	<b>3.91</b>	<b>1.41</b>

**Key:** M – Mean; Sd.Dev – Standard Deviation

**Source: Research Data (2018)**

The findings in Table 4.3 the respondents agreed that contractor prequalification practices influences the performance of housing construction projects in National Construction Authority as indicated by the aggregate score of 3.91 which varied significantly as shown by standard deviation of 1.41. The respondents also agreed on the statements that contractor reputation influence the performance of housing construction projects as shown by the mean of 4.19 and a significant variance of 1.19 and that contractor financial ability influence the performance of

housing construction projects as indicated by the mean of 4.03 which varied significantly as indicated by standard deviation of 1.43. These were followed by the statements that contractor experience influences the performance of housing construction projects (M=3.93, Sd.Dev=1.42), contractor management ability influence the performance of housing construction projects (M=3.90, Sd.Dev=1.26), combination of pooled knowledge and technical capacities that allow an organization to be competitive in the marketplace is considered before contracting (M=3.79, Sd.Dev=1.47) and measurement of the quality of an organization's policies, products, programs, strategies is carried out before contracting (M=3.61, Sd.Dev=1.66).

These findings concur with the findings of Gudah, Omboto and Tubey (2017) who found out that contractor selection criteria affected implementation of housing projects in Kisumu County. contract initiation activities have many events. Rendon (2010) defined that at pre-qualification phase, there must be education of body of workers, clear strategies of engagement, relationships constructing, resource allocation to initiatives, leadership and regulations all of that have direct effect on ensuing contractors' overall performance consequences. The agreement introduction action installation the performance expectations for the challenge.

Kuta and Nyaanga (2014) investigated the effect of competence of contractors on the construction of substandard buildings in Kenya. The study targeted contractors operating in Nairobi metropolitan. Results showed that competence and qualifications of contractors influenced construction of standard buildings. It was also revealed that there was bidding for works by contractors which many lack capacity to execute.

The respondents further indicated that inadequate pre-qualification and engagement of contractors often leads to incompetent contractors undertaking contracts they lack capacity to execute. The organizations employ a myriad of approaches to performing the screening or prequalification of contractors and their sub-tier contractors. These approaches include individually tailored information gathering documents, a third party agency to collect data and approve contractors.

#### 4.4.2 Contractor Regulation Practices

The second research objective sought to assess the effect of contractor regulations practices on the performance of housing construction projects in National Construction Authority. The findings are shown in Table 4.4.

**Table 4.4: Contractor Regulation Practices**

<b>Statement</b>	<b>M</b>	<b>Sd.Dev</b>
Contractor quality management practices influence performance of housing construction projects	4.17	0.66
Contractor safety management practices influence performance of housing construction projects	3.88	1.33
Contractor staffing structure influence performance of housing construction projects	3.94	1.14
Contractor accreditation practices influence performance of housing construction projects	3.73	1.30
Regulatory surveillance of the control of contractors influence performance of housing construction projects	4.12	1.23
The evaluation of contractors by the regulatory body or operating organization, and their licensing, authorization or registration of approval influence performance of housing construction projects	4.09	1.27
<b>Aggregate</b>	<b>4.03</b>	<b>1.16</b>

**Key:** **M** – Mean; **Sd.Dev**– Standard Deviation

#### **Source: Research Data (2018)**

The aggregate mean score of 4.03 indicated that the respondents agreed that contractor regulation practices greatly influences the performance of housing construction projects in National Construction Authority. Table 4.4 also shows that majority of the respondents agreed on the statements that contractor quality management practices influence performance of housing construction projects with a mean of 4.17 and significance variance of 0.66, regulatory surveillance of the control of contractors influence performance of housing construction projects with a mean of 4.12 and a significance variance of 1.23 and that the evaluation of contractors by the regulatory body or operating organization, and their licensing, authorization or registration of approval influence performance of housing construction projects with a mean of 4.09 and a significance variance of 1.27. These were followed by the statements that contractor staffing structure influence performance of housing construction projects (M=3.94, Sd.Dev=1.14),

contractor safety management practices influence performance of housing construction projects (M=3.88, Sd.Dev=1.33) and contractor accreditation practices influence performance of housing construction projects (M=3.73, Sd.Dev=1.30).

These findings are in line with the findings of Umeokafor, Umeadi and Jones (2014) who reviewed the compliance with occupational safety and health regulations in Nigeria's construction industry. Results showed that key issues to compliance with occupational safety and health regulations in the Nigerian construction industry include: client's influence, inadequate enforcement (which ranked highest), lack of adequate regulations and unemployment, which ranked lowest.

Ndumia (2015) conducted a study on the role of regulatory framework on the performance of building construction projects in Nairobi. The study found out that the regulators who included NCA, NEMA and the county government of Nairobi had formulated a statutory and regulatory framework to include virtual device for management of developments applications. Gatheru (2015) investigated the challenges facing the NCA and made damning indictment of the capacity of the regulator because of the challenges they encounter. These challenges included: Inadequate capacity to detect errant behaviour in contractors by conducting frequent random surveys; poor enforcement of regulations; inadequate sensitization; and poor attitude of contractors towards the NCA.

The respondents further indicated that regulatory strategy may vary between organizations projects with regard to the degree of regulatory body involvement in the contractor's authorization process. Regulatory practice is based on the requirement that competence, quality standards and safety expectations are never to be compromised, whether work is carried out by contractors or permanent staff. A regulatory body may have a strategy concerning its expectation regarding the staffing, structure and organization of an operating organization.

#### **4.4.3 Contractor Supervision Practices**

The third research objective sought to find out the effect of contract supervision practices on the performance of housing construction projects in National Construction Authority. The findings are shown in Table 4.5.

**Table 4.5: Contractor Supervision Practices**

<b>Statement</b>	<b>M</b>	<b>Sd.Dev</b>
Construction site hazard identification influence performance of housing construction projects	3.89	1.21
Construction site hazard controls influence performance of housing construction projects	4.17	0.86
Construction site project ongoing inspections influence performance of housing construction projects	4.30	0.82
Construction site emergency response planning influence performance of housing construction projects	4.28	0.68
Construction site health and safety program identification influence performance of housing construction projects	4.15	1.13
<b>Aggregate</b>	<b>4.16</b>	<b>0.94</b>

**Key:** **M** – Mean; **Sd.Dev**– Standard Deviation

**Source: Research Data (2018)**

The results in Table 4.5 indicates the aggregate mean score was 4.16 with a varied significance of 0.94 which implies that contractor supervision practices influences the performance of housing construction projects in National Construction Authority to a very great extent. Majority of the respondents strongly agreed that construction site project ongoing inspections influence performance of housing construction projects with a mean of 4.30 and a significance variance of 0.82 and that construction site emergency response planning influence performance of housing construction projects with a mean of 4.28 and a standard deviation of 0.68. These were followed by the statements that construction site hazard controls influence performance of housing construction projects (M=4.17, Sd,Dev=0.86), construction site health and safety program identification influence performance of housing construction projects (M=4.15, Sd.Dev=1.13) and that construction site hazard identification influence performance of housing construction projects (3.89, Sd.Dev=1.21).

These findings agree with the findings of Mutua, Waiganjo and Otayo (2015) who assessed the effect of contract management on performance of outsourced projects in Nairobi. They found out that essentially contract management had a positive relationship with project performance. Contract management and other factors led to 66percent difference in project performance and dispute resolution mechanism were rated as important contractual devices. The study

recommends the introduction of contract management training and certification for project managers and project team members to enhance project performance.

Camen, Gottfridsson and Rundh (2012) also studied operational factors influencing strategic partnerships social housing in the UK. They conclude that poor management of expectations between partners undermines trust and confidence in the process. As the authors suggest, contracts function as a basis in building relationships. In a study done by Ronnberg- Sijodin (2013) on life cycle viewpoint on buyer-supplier relationship in process the process of developing projects, it was concluded that close contact and training with end-users is essential for enhanced operational performance.

The respondents further indicated that it's the responsibility of the supervisor to make sure the workers he/she supervises not only understand the organization's health and safety expectations, but that they live up to them. The supervisor helps the people he/she supervises understand the organizations expectations by planning their work and provide support to help them succeed. The supervisor monitors their individual employee performance to ensure they deliver, and provides feedback to the management with results and/or any concerns.

#### **4.4.4 Sub-contracting Practices**

The fourth research objective sought to determine the effects of sub- contracting practices on the performance of housing construction projects in National Construction Authority. The findings are shown in Table 4.6.

**Table 4.6: Sub-contracting Practices**

<b>Statement</b>	<b>M</b>	<b>Sd.Dev</b>
Rigorous analysis is carried out to identify the best sub-contractor	4.17	1.05
Once the contractor is selected, the organization enters into legal contract with the contractor	3.94	1.20
There is a well defined and implemented structures and reporting lines for sub-contracting	3.61	1.66
Legal agreement regulatory controls are clearly specified when sub-contracting	3.80	1.31
Standards and procedures are clearly specified when sub-contracting	4.01	1.24
<b>Aggregate</b>	<b>3.87</b>	<b>1.29</b>

**Key:** M – Mean; Sd.Dev– Standard Deviation

**Source: Research Data (2018)**

The findings in Table 4.6 shows that sub-contracting practices influences the performance of housing construction projects in National Construction Authority as shown by aggregate mean score of 3.87 and a standard deviation of 1.29. The findings also indicated that majority of the respondents agreed that rigorous analysis is carried out to identify the best sub-contractor with a mean of 4.17 and a significance variance of 1.05 and that standards and procedures are clearly specified when sub-contracting with a mean of 4.01 and a standard deviation of 1.24. These were followed by the statements indicating that Once the contractor is selected, the organization enters into legal contract with the contractor (M=3.94, Sd.Dev=1.20), legal agreement regulatory controls are clearly specified when sub-contracting (M=3.80, Sd.Dev=1.31) and There is a well defined and implemented structures and reporting lines for sub-contracting (M=3.61, Sd.Dev=1.66).

These findings concur with the findings of Rafik, Hinze, Arshad and Hamza (2016) who investigated the reasons and challenges embedded to sub-contracting practices in the construction industry. They found out that the main reasons for subcontracting include obtaining value discounts, securing admission to specialised services, and chance sharing. The study additionally found out that the usage of direct exertions was observed to be an unprofitable proposition due to the high level of uncertainty, fluctuations in production workload, and better administrative overhead costs.

Hatami and Behsan (2012) observed that contractors are more compliant of dangers which are stated in contracts than of different kinds of threat. Contractor performance is focusing at the traits of each assignment, the contractor's level of participation, and how that impacts contractor performance. Abbasnejad and Moud (2013) discovered that most tasks writhed from delays, implementing foremost damage on contractors, and that these damages had been insupportable and deeply motivated the contractor performance.

The respondents further indicated that subcontractors are very important to the successful completion of most construction projects. The contractual relationship between the general contractor and the subcontractor is normally limited to the scope of work within the construction project. It enables the organization to take projects that are much large than they can tackle, acquire professionals skills and expertise and reduce their cost of operations.

#### 4.4.5 Performance of Housing Construction Projects

The dependent variable was to measure the performance of housing construction projects in National Construction Authority due to contract management practices. The findings are shown in Table 4.7.

**Table 4.7: Performance of Construction Housing Projects**

<b>Statement</b>	<b>M</b>	<b>Sd.Dev</b>
Contract management practices has improved the quality of construction housing projects	4.08	1.39
Contract management practices has improved the standards of construction housing projects	4.43	1.14
Contract management practices has made construction housing projects to be cost effective	4.21	1.89
Contract management practices makes it possible for user requirements to be addressed in construction housing projects	3.91	1.49
<b>Aggregate</b>	<b>4.16</b>	<b>1.48</b>

**Key:** **M** – Mean; **Sd.Dev**– Standard Deviation

**Source: Research Data (2018)**

The results in Table 4.7 indicates that the respondents agreed that contract management practices have to a very great extent influenced that performance of construction projects as shown by the aggregate score of 4.16 and a standard deviation of 1.48. Majority of the respondents strongly agreed on the statement that contract management practices has improved the standards of construction housing projects with a mean of 4.43 and a significance variance of 1.14. These were followed by the statements that contract management practices has made construction housing projects to be cost effective (M=4.21, Sd.Dev=1.89), contract management practices has improved the quality of construction housing projects (M=4.08, Sd.Dev=1.39) and Contract management practices makes it possible for user requirements to be addressed in construction housing projects (M=3.91, Sd.Dev=1.49). The success of any project according to Ashley et al (2012) is fairly depending on its finishing time from start to the delivery of results. This has a proper way referring to management selections which include budgets, goals and standards. The whole project is made from complex series of movements that combine capabilities and know-how to produce a precious end result.

The reasons for contract management are many, varied and sometimes inevitable especially in the construction industry. It is a regular practice for corporations to involve contractors or suppliers in a single manner or some other to help in presenting service or product to satisfy its supposed requirements in some form of contracts that require being controlled. Adoption of outsourcing and subsequent contract control events were intended to permit effective service delivery which refers to generating work that is of excessive great and diagnosed as proficient (Akintoye & MacLeod, 2014).

## 4.5 Inferential Statistics

### 4.5.1 Correlation Analysis

Correlation analysis was carried out to establish if there are possible connections between variables. The findings are presented in Table 4.8.

**Table 4.8: Correlation Analysis**

		Contractor prequalification practices	Contractor regulation practices	Contractor supervision practices	Sub-contracting practices
Contractor prequalification practices	Pearson Correlation	1	.739**	.009	-.011
	Sig. (2-tailed)		.001	.946	.936
	N	58	58	58	58
Contractor regulation practices	Pearson Correlation	.739**	1	.307*	.273*
	Sig. (2-tailed)	.001		.019	.038
	N	58	58	58	58
Contractor supervision practices	Pearson Correlation	.009	.307*	1	.622**
	Sig. (2-tailed)	.946	.019		.000
	N	58	58	58	58
Sub-contracting practices	Pearson Correlation	-.011	.273*	.622**	1
	Sig. (2-tailed)	.936	.038	.000	
	N	58	58	58	58

Source: Researcher (2018)

Table 4.8 shows the correlation analysis which revealed that the data sets were highly correlated with each other. For example, The Pearson correlation for contractor pre-qualification practices was found to be  $r=0.739$  ( $p<0.05$ ) which showed a strong correlation and a positive significance with contractor regulation practices as compared with the rest of the variables at 0.05 level of significance. Contractor supervision practices had a good positive relationship with contractor sub-contracting practices (0.622) at the 0.01 significance level. That means that the better the contractor supervision practices the better the contractor sub-contracting practices hence better performance of housing construction projects.

#### 4.5.2 Regression Analysis

In addition, multiple regression analysis was conducted so as to test relationship among variables. Statistical Package for Social Sciences (SPSS) version 17.0 was used to code, enter and compute the measurements of the multiple regressions for the study. This was important in measuring the extent to which changes in one or more variables jointly affected changes in another variable.

**Table 4.9: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.418 <sup>a</sup>	.561	.752	1.356	.022	.297	4	53	.001 <sup>a</sup>

a. Predictors: (Constant), Sub-contracting practices, Contractor prequalification practices, Contractor regulation practices, Contractor supervision practices

**Source: Research Data (2018)**

Adjusted R square is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable. From the findings in Table 4.9 the value of adjusted r squared was 0.752 (75.2percent) an indication that there was variation of 75.2percent of the variations in performance of housing projects can be explained by the contract management practices at 95percent confidence interval. Additionally, this therefore means that factors not studied in this research contribute 24.8percent of the performance of housing construction projects and a further research should be conducted to investigate the other factors that contribute to this gap.

### 4.5.3 Analysis of Variance (ANOVA)

**Table 4.10: Analysis of Variance**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	2.185	4	.546	.897	.001 <sup>a</sup>
Residual	97.418	53	1.838		
Total	99.603	57			

a. Predictors: (Constant), Sub-contracting practices, Contractor prequalification practices, Contractor regulation practices, Contractor supervision practices

b. Dependent Variable: Performance of housing construction projects

**Source: Research Data (2018)**

The significance value is 0.001<sup>a</sup> which is less than 0.05 thus the model is statistically significance in predicting how various factors affect performance of housing construction projects in Kenya. The F critical at 5percent level of significance was 0.546. Since F calculated is greater than the F critical (value = 0.897), this shows that the overall model was significant. The relationship ( $p < 0.05$ ) indicated a linear relationship among the variables under the study meaning there was 95percent chance that the relationship among the variables was not due to chance.

#### 4.5.4 Coefficient Determination

**Table 4.11: Regression Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0percent Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	0.5050	1.278		3.951	.000	2.486	7.614
Contractor prequalification practices	.680	.207	1.050	5.326	.745	.484	.348
Contractor regulation practices	.502	.325	4.001	2.006	.995	.650	.654
Contractor supervision practices	.493	.213	2.160	4.906	.369	.621	.234
Sub-contracting practices	.400	.176	3.040	1.226	.822	.313	.392

a. Dependent Variable: Performance of housing construction projects

**Source: Research Data (2018)**

As per the SPSS generated Table 4.11, the equation  $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$  becomes:  $Y = 0.505 + 0.680 X_1 + 0.502 X_2 + 0.493 X_3 + 0.400 X_4$

Where Y= Performance of Housing Construction Projects

X<sub>1</sub>= Contractor prequalification practices

X<sub>2</sub>= Contractor regulation practices

X<sub>3</sub>= Contractor supervision practices

X<sub>4</sub>= Sub-contracting practices

According to the regression equation established, taking all the independent variables into constant at zero, Performance of Housing Construction Projects will be 50.5percent. The data findings analyzed also showed that all the independent variables had a positive and significant effect on the Performance of Housing Construction Projects in Kenya as indicated by t-values.

The study revealed that contractor prequalification practices had a positive and significant effect on the implementation of the project as indicated by t-values ( $t= 5.326, p < 0.05$ ). Badiru (2011) observe that contractor prequalification process assumes that implementing best practices and a standardized process will lead to improved identification of qualified contractors for specific work, and reduced costs, resources and time to complete each prequalification.

The study revealed that contractor regulation practices had a positive and significant effect on the implementation of the project as indicated by t-values ( $t= 2.006, p < 0.05$ ). Simon (2015) observe that regulatory framework in which regulators challenge firms to improve based on constructive and active engagement can be effective in ensuring compliance before a serious problem emerges and regulatory framework governing the construction industry could seek legal capacity to prosecute errant developers.

The study revealed that contractor supervision practices had a positive and significant effect on the implementation of the project as indicated by t-values ( $t= 2.006, p < 0.05$ ). According to Mastrandera (2016) construction supervision is therefore a continuous, participatory process as opposite to traditional supervisory visits which focus more on inspection and fault finding rather than on problem solving to improve performance.

The study revealed that sub-contracting practices had a positive and significant effect on the implementation of the project as indicated by t-values ( $t= 2.006, p < 0.05$ ). Sturts and Schunk (2017) indicates that contractor subcontracting allow the subcontractor to be less vulnerable to fluctuation in business, have more flexibility in workforce coordination, and be able to reduce cost of management.

## **CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

The chapter provides the summary of findings, gives the conclusions and recommendations of the study based on the objectives of the study.

### **5.2 Summary of Findings**

The first research objective sought to investigate the effects of contractor pre-qualification practices on the performance of housing construction projects in National Construction Authority. The study revealed that contractor pre-qualification practices had a positive and significant effect on the performance of housing construction projects in Kenya. Contractor pre-qualification practice was found to have a great influence on the performance of housing construction projects. Most of the respondents agreed that contractor reputation, contractor financial ability influence the performance of housing construction projects

The second research objective sought to assess the effect of contractor regulations practices on the performance of housing construction projects in National Construction Authority. The study established that contractor regulation practices had a positive and significant effect on the performance of housing construction projects in Kenya. Contractor regulation practices influence the performance of housing construction projects to a very great extent. Most of the respondents agreed that contractor quality management practices, regulatory surveillance of the control of contractors and the evaluation of contractors by the regulatory body or operating organization, and their licensing, authorization or registration of approval influence performance of housing construction projects.

The third research objective sought to find out the effect of contract supervision practices on the performance of housing construction projects in National Construction Authority. The study identified that contractor supervision practices had a positive and significant effect on the performance of housing construction projects in Kenya. Contractor supervision practice was found to have a great influence on the performance of housing construction projects in Kenya. Majority of the respondents strongly agreed that construction site project ongoing inspections and construction site emergency response planning influence performance of housing construction projects.

The fourth research objective sought to determine the effects of sub- contracting practices on the performance of housing construction projects in National Construction Authority. The study examined that contractor sub-contracting practices had a positive and significant effect on the performance of housing construction projects in Kenya. Contractor sub-contracting practices highly influenced the performance of housing construction projects in Kenya. Majority of the respondents agreed that rigorous analysis is carried out to identify the best sub-contractor and that standards and procedures are clearly specified when sub-contracting.

### **5.3 Conclusions**

This study concludes that:

Contractor pre-qualification practices have big influences upon projects and their successes. The information gathered and assessed to determine a contractor's capability, capacity, resources, management processes, and performance based on their work that they have carried out during their previous years highly affects the performance of housing construction projects. This emanates due to the fact that the respondents strongly agreed that contractor experience, reputation and their management capabilities to a very great extent affects the performance housing construction projects.

Contractor regulation practices such as quality management practices, regulatory surveillance of the control of contractors and the evaluation of contractors by the regulatory body or operating organization, and their licensing, authorization or registration of approval are factors that highly influences the performance of housing construction projects. The regulatory practices challenges the contractors to improve on constructive and active engagement can be effective in ensuring compliance before a serious problem emerges.

Contractor supervision practices such as daily site inspections, emergency response plan control of hazards that might arise and having health and safety programs in the site will improve the performance of housing construction projects. Coordination between project managers and other line managers or supervisors is imperative for project success. Supervision has a key role to play in preventing accidents.

Sub contracting practices such carrying out a rigorous analysis, specifying a clear agreement on regulatory controls and putting clear standards and procedures before sub-contracting influence

the performance of housing construction projects to a very great extent. The main reasons contractors engaged subcontractors were to provide skilled labour, reduce overhead costs and minimise work and financial pressure on the contractors. Sub-contractors are sometimes unable to perform in their full capacity due to unfavourable project environment and poor quality of management by the main contractor.

#### **5.4 Recommendations**

The study recommends that:

Contractor pre-qualification practices should be based on contractors work experience, reputation, strong management team and financial ability of their company. These should be taken to ensure project success through selecting only those contractors who are fully qualified by virtue of their safety programs and performance. By assessing the capability and capacity of a potential contractor through a methodical evaluation process, potential issues that could cause trouble on a project can be identified or eliminated. Comprehensive contractor evaluations conducted prior to selection can significantly reduce the risks faced by a construction project.

Contractor regulation practices should much focus on contractor accreditation and contractor safety management practices to improve on the performance of housing construction projects. The composition of the regulatory framework that governs the Kenyan construction industry should include specialized bodies mandated to champion for regulations in order to streamline the building industry. Independent regulatory committee with members drawn from the various stakeholders of the construction industry should be constituted to carry out random and routine inspections of ongoing and existing structures to ensure compliance with the health and safety requirements as stipulated by the relevant authorities.

Contractor supervision practices should focus on hazards that might result in the construction site. Contractors should involve workers, who often have the best understanding of the conditions that create hazards and insights into how they can be controlled. Use a hazard control plan to guide the selection and implementation of controls, and implement controls according to the plan and develop plans with measures to protect workers during emergencies and nonroutine activities

Sub-contracting practices should be based on creating a detailed contract that allows proper communication about expectations, which saves time, improves efficiency, and avoids

ambiguity. Understand subcontractor's rights and responsibilities. There should be a cooperative relationships and mainly integration of subcontractors into partnering approach in order to reduce adversarial relationships. In addition, simplified and comprehensive subcontracts would improve relationship between main contractors and subcontractors for effective performance housing construction project performance.

### **5.5 Suggestion for Further Research**

This study recommends that further studies should be carried out on how contract management practices influences the performance of roads construction projects.

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## APPENDICES

### Appendix I: Letter of Introduction

#### **RE: EMPLOYEES IN CONSTRUCTION PROJECTS IN NAIROBI COUNTY**

I am an **MBA (Project Management Option)** student at Kenyatta University conducting a research on: **Contract Management Practices and Performance of Housing Construction Projects in Nairobi County, Kenya: A case of National Construction Authority.** I hereby request you for the below said data required for me to attain my studies objectives as a part of requirement for MBA degree.

Any statistics offered will be handled confidentially and used for the motive of this research. A duplicate of the research may be availed to you on request to assist enhance on the overall performance of production projects.

Appreciation is obtainable as you aid the introduction of latest know-how to useful resource both the academy and the enterprise.

Regards,

.....

Loy Ochola

The Researcher/ Student

## Appendix II: Questionnaire

### Section A: Demographic Data

1. Gender: Male  Female
2. How long have you worked in the current station?  
 Less than 2 years  2 – 5 years   
 6– 9 years  10 and above
3. What is your level of education?  
 Diploma/College  University Degree   
 MBA/MA  Post-graduate Diploma
4. Do you have any certification on project management? Yes  No

### Section B: Contractor Pre-qualification Practices

The statements below relate to contractor pre-qualification practices Performance of Housing Construction Projects in Nairobi County, Kenya. Supplied also are five options corresponding to these statements:

**Key:** Strongly agree(SA)=5, Agree(A)=4, Undecided(U)=3, Disagree(D)=2, and Strongly Disagree(SD)=1.

Statement	1	2	3	4	5
Contractor experience influence the performance of housingconstruction projects					
Contractor financial ability influence the performance of housing construction projects					
Contractor management ability influence the performance of housing construction projects					
Contractor reputation influence the performance of housing construction projects					
Combination of pooled knowledge and technical capacities that allow an organization to be competitive in the marketplace is considered before contracting					

Measurement of the quality of an organization's policies, products, programs, strategies is carried out before contracting					
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5. In your own opinion, to what extent does contractor pre-qualification practices Performance of Housing Construction Projects in Nairobi County, Kenya?

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**Section C: Contractor Regulation Practices**

The statements below relate to contractor regulation practices Performance of Housing Construction Projects in Nairobi County, Kenya. Supplied also are five options corresponding to these statements:

Statement	1	2	3	4	5
Contractor quality management practices influence performance of housing construction projects					
Contractor safety management practices influence performance of housing construction projects					
Contractor staffing structure influence performance of housing construction projects					
Contractor accreditation practices influence performance of housing construction projects					
Regulatory surveillance of the control of contractors influence performance of housing construction projects					
The evaluation of contractors by the regulatory body or operating organization, and their licensing, authorization or registration of approval influence performance of housing construction projects					

6. In your own opinion, to what extent does contractor regulation practices Performance of Housing Construction Projects in Nairobi County, Kenya?

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**Section D: Contractor Supervision Practices**

The statements below relate to contractor supervision practices Performance of Housing Construction Projects in Nairobi County, Kenya. Supplied also are five options corresponding to these statements:

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Construction site hazard identification influence performance of housing construction projects					
Construction site hazard controls influence performance of housing construction projects					
Construction site project ongoing inspections influence performance of housing construction projects					
Construction site emergency response planning influence performance of housing construction projects					
Construction site health and safety program identification influence performance of housing construction projects					

7. In your own opinion, to what extent does contractor supervisory practices Performance of Housing Construction Projects in Nairobi County, Kenya?

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**Section E: Contractor Sub-contracting Practices**

The statements below relate to contractor sub-contracting practices Performance of Housing Construction Projects in Nairobi County, Kenya. Supplied also are five options corresponding to these statements:

Statement	1	2	3	4	5
Rigorous analysis is carried out to identify the best sub-contractor					
Once the contractor is selected, the organization enters into legal contract with the contractor					
There is a well defined and implemented structures and reporting lines for sub-contracting					
Legal agreement regulatory controls are clearly specified when sub-contracting					
Standards and procedures are clearly specified when sub-contracting					

8. In your own opinion, to what extent does sub-contracting practices Performance of Housing Construction Projects in Nairobi County, Kenya?

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**Section F: Performance of Housing Construction Projects**

To what extent will you concur with the following statements concerning the following indicators of performance of housing construction projects in Nairobi County?

Statement	1	2	3	4	5
It leads to improved quality of services					
There is timely delivery of services					
Decline in cost between the principal and agent					
Projects commissioned meet clients specification					

### Appendix III: University Approval Letter



KENYATTA UNIVERSITY  
GRADUATE SCHOOL

E-mail: [dean-graduate@ku.ac.ke](mailto:dean-graduate@ku.ac.ke)

Website: [www.ku.ac.ke](http://www.ku.ac.ke)

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

Our Ref: D53/ CTY/OL/24472/2014

DATE: 12<sup>th</sup> February, 2018

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

Dear Sir/Madam,


**RE: RESEARCH AUTHORIZATION FOR OCHOLA LOY SALOME – REG. NO. D53/  
CTY/OL/24472/2014.**

I write to introduce Ms. Ochola Loy Salome who is a Postgraduate Student of this University. She is registered for M.B.A degree programme in the Department of Management Science.

Ms. Ochola Loy intends to conduct research for a M.B.A Project Proposal entitled, “Contract Management Practices and Performance of Housing Construction Projects in Nairobi City County, Kenya: A Case of National Construction Authority”.

Any assistance given will be highly appreciated.

Yours faithfully,

  
MRS. LUCY N. MBAABU  
FOR: DEAN, GRADUATE SCHOOL

HL/lnn

## Appendix IV: Research Permit

THIS IS TO CERTIFY THAT:  
**MISS. LOY ACHIENG OCHOLA**  
of **KENYATTA UNIVERSITY, 43844-100**  
Nairobi, has been permitted to conduct  
research in *Nairobi County*

Permit No : NACOSTI/P/18/18534/21721  
Date Of Issue : 24th May, 2018  
Fee Recieved : Ksh 1000

on the topic: **CONTRACT MANAGEMENT  
PRACTICES AND PERFORMANCE OF  
HOUSING CONSTRUCTION PROJECTS IN  
NAIROBI CITY COUNTY, KENYA: A CASE  
OF NATIONAL CONSTRUCTION  
AUTHORITY**

for the period ending:  
**14th March, 2019**

  
.....  
**Applicant's  
Signature**



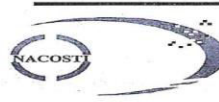
  
.....  
**Director General  
National Commission for Science,  
Technology & Innovation**

**CONDITIONS**

1. The License is valid for the proposed research, research site specified period.
2. Both the Licence and any rights thereunder are non-transferable.
3. Upon request of the Commission, the Licensee shall submit a progress report.
4. The Licensee shall report to the County Director of Education and County Governor in the area of research before commencement of the research.
5. Excavation, filming and collection of specimens are subject to further permissions from relevant Government agencies.
6. This Licence does not give authority to transfer research materials.
7. The Licensee shall submit two (2) hard copies and upload a soft copy of their final report.
8. The Commission reserves the right to modify the conditions of this Licence including its cancellation without prior notice.



**REPUBLIC OF KENYA**



**National Commission for Science,  
Technology and Innovation**

**RESEARCH CLEARANCE  
PERMIT**

Serial No.A 18591

**CONDITIONS: see back page**

## Appendix V: Research Authorization



### NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471,  
2241349,3310571,2219420  
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Email: dg@nacosti.go.ke  
Website : www.nacosti.go.ke  
When replying please quote

NACOSTI, Upper Kabete  
Off Waiyaki Way  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref. No. **NACOSTI/P/18/18534/21721**

Date: **24<sup>th</sup> May, 2018**

Loy Achieng Ochola  
Kenyatta University  
P.O. Box 43844-00100  
**NAIROBI.**

#### **RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on ***“Contract management practices and performance of housing construction projects in Nairobi City County, Kenya: A case of National Construction Authority,”*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **14<sup>th</sup> March, 2019.**

You are advised to report to **the Executive Director, National Construction Authority, the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

**GODFREY P. KALERWA MSc., MBA, MKIM**  
**FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The Executive Director  
National Construction Authority.

The County Commissioner  
Nairobi County.

*National Commission for Science, Technology and Innovation is ISO9001:2008 Certified*