

**INFLUENCE OF REGULATORY FRAMEWORK ON  
PERFORMANCE OF BUILDING CONSTRUCTION  
PROJECTS IN NAIROBI COUNTY, KENYA**

**BY**

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Planning and Management of the University of Nairobi**

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## **DECLARATION**

This research project report is my original work and has never been presented for academic award to this or any other institution.

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**L50/71566/2014**

This research project report has been presented for examination with my approval as the university supervisor.

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## **DEDICATION**

This work is dedicated to my loving wife Lucy Catherine Lupia and our unborn child, a blessing for which I am truly humbled; and to the Almighty God for the wisdom and gift of life that has made me realize and see the conclusion of this research.

## **ACKNOWLEDGEMENT**

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## **ABBREVIATION**

<b>AAK</b>	:	Architectural Association of Kenya
<b>BORAQS</b>	:	Board of Registration for Architect and Quantity Surveyors
<b>NCA</b>	:	National Construction Authority
<b>NCG</b>	:	Nairobi County Government
<b>NEMA</b>	:	National Environment Management Authority
<b>SPSS</b>	:	Statistical Package for Social Scientist
<b>GNP</b>	:	Gross National Product
<b>UK</b>	:	United Kingdom
<b>IQSK</b>	:	Institute of Quantity Surveyors of Kenya
<b>GOK</b>	:	Government of Kenya
<b>H&amp;S</b>	:	Health & Safety

## ABSTRACT

Construction is a large, dynamic, and complex industry sector that plays an important role in the Kenyan economy. Building regulations are statutory instruments that seek to ensure that the building policies set out in the relevant legislation are carried out. Building regulation involves registration of contractors, projects, skilled construction workers, construction site supervisors, training institutions, and provisions relating to collection and payment of the construction levy. This study aimed to establish the influence of regulatory framework on the performance of building construction projects in Nairobi City County, Kenya. The study was guided by the objectives; to establish the influence of the Board of Registration for Architects and Quantity Surveyors on performance of building construction projects in Nairobi County, to determine the influence of County Government of Nairobi regulations on performance of building construction projects in Nairobi County, to establish the influence of National Environmental Management Authority regulations on performance of building construction projects in Nairobi County and to determine the influence of National Construction Authority regulations on performance of building construction projects in Nairobi County. The study adopted a descriptive survey research design. The study used simple random sampling to select 19 licensed quantity surveyors, 28 licensed architects and 132 licensed building contractors operating in Nairobi. The study found out that Architects and Quantity Surveyors trained and licensed in the planning and designing of buildings, their work is to advise his clients and study their needs, Nairobi County had formulated a statutory and regulatory framework to embrace digital system for management of developments applications which involves the public and stakeholders in policy formulation, NEMA effectively implements environmental policies, proposes effective mitigation measures for significant negative impacts of building construction projects and NCA registers and certifies constructors, regularly publishes the code of conduct for the building construction industry. The study concludes that a 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 recommends 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 in Nairobi and NEMA could carry out environmental audit of all activities that are likely to have significant effect on the environment during the course of executing the project.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Construction is a large, dynamic, and complex industry sector that plays an important role in the Kenyan economy. Construction workers and employers build our roads, houses, and workplaces and repair and maintain our nation's physical infrastructure. Construction work can involve building of new structures, which may include activities involved with subdividing land for sale as building sites or preparation of sites for new construction. Construction work also includes renovations involving additions, alterations, or maintenance and repair of buildings or engineering projects such as highways or utility systems. When the construction industry is examined from a global context, its socio-economic significance becomes obvious. The industry is the world's largest industrial employer (111 million employees) and in most countries it accounts for more than half of capital investment and as much as 10 per cent of GNP (Du Plessis, 2001).

Construction work covers many activities, techniques, materials and hazards and it is this diversity that increases the probability of accidents' occurring. There is a commonality of accidents within the industry and the factors that can contribute indirectly to an accident. An accident may be defined as any unplanned event that resulted in injury or ill health of people, or damage or loss to property, plant, materials or the environment. A recurring theme is that people are killed during simple, routine work and in many cases a clear lack of planning contributed to the tragedy. However, safety and safeguard of life has been lacking in the Kenya real estate and construction industry (Ndirangu, 2009). An underlying belief is that the majority of accidents are not caused by careless workers but by failures in control which ultimately is the responsibility of management. Improved health and safety management systems are assumed to make good financial sense and should be part of the cost conscious culture of companies dedicated to efficiency and profitability. It has been recognized that a reduction in the level of accidents would be the principal quantifiable benefit of new construction design and management regulations. In the UK, it was also estimated that

on small to medium sized sites a reduction in accidents of 33% could be achieved and that the estimated benefit to the industry would be £220 million each year.

Building regulations are statutory instruments that seek to ensure that the building policies set out in the relevant legislation are carried out (Gelder, 2004). Building regulations approval is required for most building work in any given country. In building, regulation involves registration of contractors, projects, skilled construction workers, construction site supervisors, training institutions, and provisions relating to collection and payment of the construction levy (G.O.K, 2012). Generally in every country, construction regulation authorities are established to harmonize construction laws found in statutes which may contradict each other, curb uncontrolled and unchecked physical planning of buildings and construction, control and enforce the mechanisms on the application of the Building Code in the construction industry, prevent easy entry and penetration of unqualified contractors, and improve on the bureaucratic requirements and procedures in approval of building plans. Further, construction regulation authorities eliminate corruption cases in the building industry, emphasize on both material quality and contractor performance, and revise the Building Codes to ensure relevance (Nahinja, 2014).

Construction regulations are statutory instruments setting out the minimum legal requirements for construction works and relate primarily to the health, safety and welfare of the workforce which must be taken into account when planning construction operations and during the actual construction period (Chudley & Greeno, 2006). According to Mohammed (2010), construction regulations must incorporate a provision that the contractor who plans to perform any construction shall before carrying the work notify in writing the competent authority for construction planning. Traditionally, cost, quality and time have constituted the parameters within which projects have been managed. However, increasing awareness relative to the role of H&S in overall project performance and the inclusion of H&S as a project performance measure by, inter alia, petro-chemical organizations, has engendered focus on Health and Safety (H&S) by a range of stakeholders. The number of large-scale construction accidents in Kenya in the recent past has further raised the level of awareness.

Regulation of building construction in Kenya is done through a statutory authority known as the National Construction Authority (NCA), whose function is to establish and oversee the construction industry and coordinate its development. The NCA is mandated to encourage the standardization and improvement of construction techniques and materials, provide, promote, review and co-ordinate training programs for skilled construction workers and construction site supervisors, accredit and register contractors and regulate their professional undertakings, accredit and certify skilled construction workers and construction site supervisors, develop and publish a code of conduct for the construction industry (GOK, 2011).

Use of poor quality construction materials (such as quality of sand, aggregates or water) result in poor quality structures and may cause structures to fail leading to injuries, deaths and loss of investment for developers. Impurities in building sands contribute to reduced compressive strength. 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. Although many studies mentioned above have shown that use of poor quality materials is one of the major contributing factors to collapse of buildings, testing these materials has not been carried out to examine the impact of impurities in building sands to the overall performance of concrete. In addition, where tests have been carried out, testing of both clayey, silts and organic impurities has not been carried out to determine their combined effect on the concrete strength. To prevent buildings failure, careful selection of construction materials including building sands is paramount to ensure they meet the set construction standards. Impurities in sand impact negatively on compressive strength as well as bond strength between steel reinforcement and concrete and may cause buildings failure (Dimuna, 2010).

### **1.1.1 Regulation Framework in the Building Construction Industry in Kenya**

In Kenya, the construction process is executed by various professionals of diverse training and skills, 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 professional and regulatory bodies that govern the works of these professionals in the

Kenya construction industry include: Board of Registration of Architects and Quantity Surveyors (BORAQS), Architectural Association of Kenya (AAK), Institute of Quantity Surveyors of Kenya (IQSK), National Environmental Management Authority (NEMA), Nairobi County Government (NCG), Ministry of Public Works (MoPW) and Engineers Registration Board (ERB).

Even though the importance of professional and regulatory institutions has not changed, an apparent change in their effectiveness and efficiency has changed and deteriorated in recent past in property and construction industry in Kenya. Most of the laws in the Acts mentioned are outdated and no longer effective in guarding professionalism in Kenya. The penalties and fines proposed in these laws are too lenient for today's social and economic setting in Kenya. For instance, section 3 of the Architects and Quantity Surveyors Act recommend a fine not exceeding five thousand Kenya shillings for any person who contravenes the provisions of subsection 1 of this section, which include the unlawful use of protected names under this act by un-registered persons (Architect and Quantity Surveyors Act, 2011)

## **1.2 Statement of the Problem**

Recently, there have been numerous cases of buildings collapsing because of poor construction in Nairobi. According to Voice of America (2014), most of the cases are in poor neighbourhoods where there is little or no inspection. In many of these cases people have died. 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. Below are some of the incidences of poor regulatory framework on construction in Kenya.

In May 1996, 35 people were killed when a Nairobi supermarket collapsed during a heavy downpour. In March 1998, 26 students at the Bombolulu Girl's Secondary School in the Coast Province perished in a dormitory fire. In March 2001, 67 students at Kyanguli Secondary School in Machakos District perished in a similar incident. Both of these tragedies could have been minimized or prevented altogether had there been a sufficient effort to enforce building safety and fire preparedness regulations. In March 2004, the Planning Department at the Nairobi City Hall was completely destroyed in an overnight fire. Efforts to extinguish the fire were hampered by the

absence of fire hydrants in the vicinity. A survey later revealed that there are no fire hydrants anywhere in the city's central business district. In January 2006, 15 workers were killed in downtown Nairobi's Nyamakima area when a two-story building under construction collapsed. The tragedy was attributed to under-designed concrete columns and a failure to allow for appropriate curing. In July 2006, disaster visited Nairobi yet again when 10 factory workers died in an overnight inferno in the industrial area. Like the earlier dormitory fires, the victims had been locked inside the building (Daily Nation, July 2014).

Various related studies have been conducted. 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. Famakin and 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. Improved quality was discovered to have had the greatest impact of construction health and safety on project parameter.

In Kenya, 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. 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. In addition, there was lack of peer review among contractors leading to lack of better practice standards. Further results reveal that



engineers in the construction sector were not registered with the appropriate professional bodies.

Ngugi, Mutuku and Gariy (2014) investigated the effects of sand quality on compressive strength of concrete, a case of Nairobi County and its environs. Results showed that the sand samples tested exceeded the allowable limit of silt, clay and organic content limit. Of late, owing to the many cases of collapsed buildings especially in Nairobi and the loss of many lives, the government through the NCA has increased its effort in ensuring laws and regulations in the construction industry are observed. This is the same case for the Nairobi County government inspection unit.

However, these studies did not look at the influence of regulatory framework on the performance. There is need for an in-depth study on the influence of regulatory framework on the performance of building construction projects therefore this study seeks to establish the influence of regulatory framework on the performance of building construction projects in Nairobi County, Kenya.

### **1.3 Purpose of the Study**

The purpose of this study was to investigate the influence of regulatory framework on the performance of building construction projects in Nairobi County, Kenya.

### **1.4 Objectives of the study**

The study was guided by the following objectives:

- i. To establish how the Board of Registration for Architects and Quantity Surveyors regulatory practices influence the performance of building construction projects in Nairobi County.
- ii. To determine the extent to which Nairobi County Government regulatory practices influences the performance of building construction projects in Nairobi County.
- iii. To establish how National Environmental Management Authority regulatory practices influence the performance of building construction projects in Nairobi County.

- iv. To determine the extent to which National Construction Authority regulatory practices influence the performance of building construction projects in Nairobi County.

### **1.5 Research Questions**

- i. How do the Board of Registration for Architects and Quantity Surveyors regulatory practices influence the performance of building construction projects in Nairobi County?
- ii. To what extent does the County Government of Nairobi regulatory practices influence the performance of building construction projects in Nairobi County?
- iii. How do the National Environmental Management Authority regulatory practices influence the performance of building construction projects in Nairobi County?
- iv. To what extent do the National Construction Council regulatory practices influence the performance of building construction projects in Nairobi County?

### **1.6 Significance of the Study**

This study is hoped to benefit several stakeholders.

The study may benefit contractors, architects, engineers, quantity surveyors, sellers of property and other players in the construction industry. The study is hoped to further help them appreciate and acknowledge the importance of regulation in this industry and thus enable them embrace it for their own benefit in terms of reduction of costs and avoidance of liabilities.

For tenants and buyers of houses in Nairobi City and other areas of the country, the study may educate them on the aspects of regulation. It may enable them make good informed decisions when buying property or renting houses and avoid living in badly constructed buildings that can cause death and destruction of property in case of collapsing.

The study is hoped to help the National and Nairobi City County government and their agencies like the National Construction Authority come up with better policies in regulating the construction industry in order to ensure safety.

Finally, this study is hoped to benefit scholars as reference for thoughts and ideas on similar studies and research in future. This study also hopes to act as a bridge and add to the knowledge available for research.

### **1.7 Delimitations of the Study**

This study investigated the influence of regulatory framework on the performance of building construction projects only in Nairobi City County, Kenya. The other reason is that more cases have been reported of collapsed buildings in Nairobi than any other area of Kenya. The other delimitation was that the study mostly used closed-ended Likert scale responses rather than additional open-ended responses, which might have made some people more willing to take and complete the questionnaire.

### **1.8 Limitations of the Study**

The researcher expected some limitations in this study:

First, the respondents who the researcher managed to get may not have been truly a random sample. However, the study strived to avoid this by using the most appropriate sampling method. The researcher also expected some of the respondents to fear giving responses for fear that it will be used against them later. The researcher tried to reduce this by assuring the respondents that the findings are for academic purposes only and that confidentiality will be guaranteed

### **1.9 Basic Assumptions of the Study**

The study assumed that the respondents were true and honest when giving their responses. It further assumed that regulation of the construction industry continued being important in the present day and in the future.

The study was guided by the assumptions that all ethical considerations have been adhered and the findings of the study were correct. An assumption had also been made that the sample is representative of the population and that the data collection

instrument had validity and measured the desired constructs. The researcher also assumed that the respondents answered the questions correctly and truthfully.

### **1.10 Definition of Significant Terms used in the Study**

**BORAQS:** Is a Kenya government professional regulatory body established to regulate professionals in the fields of Architecture and Quantity Surveying towards a Sustainable Built and Natural Environment. The body executes its mandate through training, registration and enhancement of ethical practice.

**Nairobi County Government:** Is the governing body for Nairobi City. The county is mandated to provide and manage basic social and physical infrastructure services to the residents of Nairobi. These services include basic education, housing, health, water and sewerage, refuse and garbage collection, planning and development control, urban public transport and fire services among others. In the context of this study, the building regulatory and licensing department of the NCG is of particular interest.

**National Construction Authority:** Is a body mandated register constructors and prepare a new register for builders to clear the work in Kenya. NCA provides legal and regulatory requirements for registration as a contractor.

**National Environmental Management Authority:** Is a governing body mandated to coordinate the various environmental management activities being undertaken by the lead agencies. It promotes the integration of environmental considerations into development policies, plans, programmes and projects, with a view to ensuring the proper management and rational utilization of environmental resources, on sustainable yield basis, for the improvement of the quality of human life in Kenya.

**Performance of building construction projects:** Is simply the production of valid and the expected results. The accomplishment of construction projects or any other task measured against preset known standards of accuracy, completeness, cost, and speed. Health and safety of the workers and the surrounding community is also a parameter for measurement of the degree of success of achievement of expected outcome of a construction project.

**Quantity Surveyor:** Is a professional working within the construction industry concerned with construction costs and contracts. Services provided by a quantity surveyor may include: cost planning and commercial management throughout the entire life cycle of the project from inception to post-completion.

**Regulation:** a law, rule, or other order prescribed by an authority, especially to regulate conduct.

**Regulatory Framework:** A regulatory framework is a model people can use for reforming and enacting regulations in an effective and logical way. Regulatory framework is laws and regulations that outline the legal requirements to be met. They may also be complemented by policies, standards directives and guidelines. Regulatory framework is also the due process of regulation surrounding a single topic that entails all of the relevant legislative documents (acts, regulations, annexes) and describes the agency or body responsible for administering the framework.

In the context of the construction industry, the fundamental purposed of building control was originally the protection of the public interest with regard to health and safety. The scope has however been extended over the years to include the welfare of people in and around building and furthering the conservation of environment, fuel and power.

## **1.12 Organization of the Study**

This research project is organized into five chapters. Chapter one covers introduction to the study which highlights the background of the study by looking at the historical situation of restitution globally, regionally and locally. It also contains statement of the problem, purpose of the study, research objectives and research questions as well as the limitations of the study. It also states the significance, delimitations and limitations of the study. It states the assumptions, definitions of terms and the organization of the study. The second chapter contains theoretical and empirical literature review. It also provides a conceptual framework indicating relationships and variables that influence the performance. A brief summary of literature review is also tackled in this chapter. Chapter three describes the research methodology that will be

used to carry out the study including the research design, target population, sampling methodology, sample size, data collection methods, reliability and validity of research instruments, data collection procedures as well as data processing, analysis techniques and presentation. There is also reference and appendices in the annex. Chapter four presents findings from the analysis of the questionnaires as collected from the field and discusses the finding in line with the objectives. The discussion includes the demographic information of the respondents, discussion of the outcome and a summary of the chapter. Chapter five presents the demographic information of the respondents, the discussion of the study, conclusions of the study, the recommendations of the study and suggestions for further studies.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter presents a review of the literature related to the subject under study as presented by various researchers. The materials are drawn from several sources which are closely related to the theme and the objectives of the study. The chapter first presents the empirical and theoretical framework on which the study is founded and then the concept of regulation and performance.

#### **2.2 Regulatory Framework and Performance of Building Construction Projects**

Regulation is treated as synonymous with law. Regulations are rules or norms adopted by government and backed up by some threat of consequences, usually negative ones in the form of penalties while a regulatory framework on the other hand, refers to a system of regulations and the means used to enforce them. They are usually established by industry regulators to regulate the specific activities (Edinburgh, 2003). According to the Architectural Association of Kenya (AAK), regulatory framework is the due process of regulation surrounding a single topic that entails all of the relevant legislative documents (acts, regulations, annexes) and describes the agency or body responsible for administering the framework.

The Building Regulation find it necessary to identify the factors that promote and determine the future regulation process of the building and regulation process and associated standards and guidance in the next 20 years in relation to sustainable construction issues (Architect and Quantity Surveyors Act, 2010). The factors are based on emerging scenarios related to physical, social and economic changes that are taking place in the country and globally like international requirements, human needs and responsibilities and technological changes. Edinburgh (2003) indicated that the factors included climate changes, resource conservation, waste minimization, biodiversity and health and well-being of individuals and communities in and around building. The relationship between construction practices and regulations and a variety of economic growth, environmental quality and social prosperity factors is increasingly being recognized globally (Christensen, 2009).

The Current Regulatory Framework in developing countries like Kenya results in conflicts due to inadequacy at the boundaries of the responsibilities of its composite agencies and inevitably policy and development aspirations (Grimshaw, 2001). An ideal situation may be unachievable, but few would argue that no improvement is possible. The sustainable development agenda in particular has already brought many important issues and conflicts to the fore particular in respect of planning, land use and construction activities (Warren & Wilkinson, 2008). The effectiveness of the current regulatory frameworks in Kenya are therefore explored in this study and identify areas for expansion and integration that can result in closing those gaps that adversely affecting the ability to deliver sustainable construction.

### **2.3 BORAQS Regulatory Practices and Performance of Building Construction Projects**

BORAQS is a Kenya government professional regulatory body established to regulate professionals in the fields of Architecture and Quantity Surveying towards a Sustainable Built and Natural Environment. The body executes its mandate through training, registration and enhancement of ethical practice. According to Architects and Quantity Surveyors Act of the laws of Kenya, no person should practice under any name, title or style containing any of the words or phrases "architect", "architecture", "architectural", "quantity surveyor" or "quantity surveying" unless he is registered under the Act as an Architect or a Quantity Surveyor (Architect and Quantity Surveyors Act, 2010). An Architect is a person trained and licensed in the planning and designing of buildings, and participates in supervising the construction of a building (The Wikipedia Encyclopedia, 2010). The work of an architect is to advise his clients, study their needs, to prepare, direct and co-ordinate design and to supervise works executed under a building contract (Architect and Quantity Surveyors Act, 2010). Architects and Quantity Surveyors Act stipulates that a person registered to practice as an Architect in Kenya must have a minimum of five years of approved training followed by at least one year of practical experience in the work of an architect to the satisfaction of the registration Board, and has passed a prescribed examination. He must also have a minimum of one year of professional experience in Kenya to the satisfaction of the Registration Board or has satisfied the Board that he



has otherwise acquired an adequate knowledge of Kenya building contract procedures (Architect and Quantity Surveyors Act, 2010).

The Society of Chartered Surveyors (2006) identifies that upholding ethical principles is a key reason why people rely on professional bodies. Competence and trust are central elements in generating confidence in the professions (The Society of Chartered Surveyors, 2006). Cartlidge (2011) argues that professions can only survive if the public retains confidence in them. Transparency and ethical behaviour are particularly important for quantity surveyors who are involved daily with financial transactions such as procurement, contractual arrangements, payments and valuations (Cartlidge, 2011).

Ethics may be seen as being fair or not wronging or harming others. Business ethics are about the rightness and wrongness of business practice (Cartlidge, 2011). Ethics seeks higher than minimum standards which in turn guide individuals and enables them to justify their actions in resolving the inevitable conflicts between the interests of the professional, the client and the community at large (Society of Chartered Surveyors, 2006). Murdoch and Hughes (2008) stress the importance of the professions primary aim to serve the public. This commitment means that the true professional places the public good before mere financial reward. Acting in such a manner may, on occasion, conflict with an individual's or client's interest. This concept is embodied in many of the professions' codes of conduct. Upholding professional ethics underpins the primary objectives of professional codes of practice (Seeley, 1997). Providing a professional service may therefore be viewed as delivering technical skills competently and in a way society expects of professionals.

The work of the quantity surveyor has evolved rapidly since the 1970s. Ashworth and Hogg (2007) discussed the findings of a number of influential industry and institutional reports which identify changing client needs and their dissatisfaction with construction products and services. They identified key drivers of changes in the business environment, the industry, customer needs, and the professions and IT. The reports were highly critical of construction inefficiencies and called for urgent improvement in construction performance.

## **2.4 NCG Regulatory Practices and Performance of Building Construction**

### **Projects**

Nairobi City County is mandated to provide and manage basic social and physical infrastructure services to the residents of Nairobi. These services include basic education, 32 housing, health, water and sewerage, refuse and garbage collection, planning and development control, urban public transport and fire services among others.

On June 27, 2013 the Nairobi City County adopted the new Financial Act 2013 which became effective as of October 1, 2013. The Act modified the method of assessing the building permit fees and consolidated several costs into one. The building permit fee is now based on the size of the building. The Joint Building Council Rates provide the estimated cost per square meter which varies depending on the type of building (e.g. office block, residential building etc). One will first approach the City Development Department of Nairobi City County Government to get their architectural plans approved first. Before submitting the application, one must pay the relevant fees. Once the payment is made, you submit the receipt to the City Development Department. The application must contain the architectural drawings and plans, land title, copy of main architect's license (Nairobi City County Government, 2013).

The application then gets forwarded to various departments: Physical Planning, Road Department, Public Health, Fire Department, Water Authority, and Electricity Authority. Each department takes at least one week to clear the respective section of the plans and grants separate permits for the plumbing, sewerage, and electrical activities (Nairobi City County Government, 2013). After the building permit is obtained, you must submit its structural project separately. Since 2006, Nairobi City Council, now Nairobi City County Government has been reforming under Rapid Results Initiative (RRI), trying to reduce the number of days and eliminate the bottlenecks. Since 2008 the architectural project approval is done by the Technical Committee that convenes twice a week and issues the approvals. Previously, the approving body was the City Council itself. However, due to its busy schedule and backlog, it was decided to transfer the responsibility from the City Council to the

Technical Committee. Because of various reforms it takes on average 30 days to obtain this part of the approval, as opposed to 50 days before. However, approval time can vary depending on the diligence of the architect (Daily Nation, 2014).

Most city authorities experience various challenges in regulating construction. This is clearly a stylized depiction of the long gauntlet of regulatory approvals prior to initiation of major housing developments or rehabilitation projects. Further complicating the situation is the lack of a single approval process (Productivity Commission, 2005). Instead, developers must deal with multiple agencies and approval processes that relate to separate regulations governing land use, building safety, environmental considerations, and other regulations. In most instances, decision making for approvals is highly prescribed by relevant regulations with respect to the participation of different groups, locus of decision making, and appeal procedures (Testa, Iraldo, & Frey, 2011).

Regulatory approval processes typically entail discretion granted to regulatory agencies to make decisions that are subject to administrative law review (for example, by a hearing examiner), appeal to political authorities for variances (for example, a city council), and options for legal contests (for example, through civil courts). In some settings, separate appeals committees with quasi-judicial authority have been established to handle such topics as growth management disputes (for example, Washington State Growth Management Hearings Boards) and implementation of requirements for affordable housing set-asides (for example, Massachusetts Housing Appeals Committee). The delays associated with these processes are central concerns of the development community (Meacham, Bowen, Traw & Moore, 2005).

## **2.5 NEMA Regulatory Practices and Performance of Building Construction Projects**

The National Environment Management Authority (NEMA) is a body established under the Environmental Management and Coordination Act of the laws of Kenya to exercise general supervision and co-ordination over all matters relating to the environment and to be the principal instrument of Government in the implementation of all policies relating to the environment (Environmental Management and Coordination Act, 1999). NEMA has the primary responsibility of implementing

environmental safeguards, although many actors have responsibilities including civil society, private consulting firms, development banks which finance infrastructure and other government actors including local government and the court system. Currently, the system suffers from inadequate funding, corruption, a lack of engagement with important community stakeholders, gaps or duplications of regulations, and a misunderstanding by society at-large of the benefits of a sustainable project. These serious issues result in little oversight of development projects with potentially huge environmental impacts.

China's Environmental Impact Assessment Law (EIA Law) requires the assessment of construction projects affecting the environment. Article 17 specifically lists the required elements for this assessment. According to the State Environmental Protection Administration (SEPA), environmental assessments for construction sites exceeded 90% since 1998, and increased to 98.3% in 2002. If these statistics are accurate, and all environmental assessments have been conducted and approved by the appropriate departments, there would be substantially less environmental pollution.

While SEPA has addressed 82 serious violations, 80% of the 70 approved steel construction projects have yet to comply with the EIA Law. These statistics show that regulation of construction projects is superficial, reaching only as far as the environmental assessment. Those agencies responsible for drafting reports tend to falsify them in order to satisfy construction entities. For example, in one report, the real distance between a proposed plant and a residential district was 20 meters, while the EIA report stated the distance at 400 meters. Consequently, the construction project was approved and later caused severe pollution (Canfa, 2006).

## **2.6 NCA Regulatory Practices and Performance of Building Construction Projects**

Regulation of building construction in Kenya is done through a statutory authority known as the National Construction Authority (NCA), whose function is to establish and oversee the construction industry and coordinate its development. The NCA is mandated to encourage the standardization and improvement of construction techniques and materials, provide, promote, review and co-ordinate training programs

for skilled construction workers and construction site supervisors, accredit and register contractors and regulate their professional undertakings, accredit and certify skilled construction workers and construction site supervisors, develop and publish a code of conduct for the construction industry (GOK, 2011).

Delays in permitting and construction are clearly noteworthy concerns. In a study by Ben-Joseph (2003), developers who participated reported waiting an average of 17 months for relevant permits. One-fifth of the respondents reported waiting more than 2 years. In a study of motivations for building-code compliance by homebuilders in western Washington, May (2004) found that a primary motivation for compliance, cited by 76 percent of the respondents, is avoidance of delays in construction. Luger and Temkin (2000) provide insights about the sources of delay for residential development in their surveys of regulators in New Jersey and North Carolina.

Inconsistencies in regulatory requirements and inspections constitute another set of noteworthy concerns. More than three-quarters of the residential homebuilders surveyed by May (2004) cited these inconsistencies as a constraint on code compliance. Unnecessary delays and the impacts of local administrative discretion each were cited as the most burdensome aspect of regulation by approximately one-quarter of the respondents in both the 1976 and 2002 studies summarized by Ben-Joseph (2003). These are all different ways of communicating concerns about lack of coordination and inconsistencies in interpretation of rules

## **2.7 Theoretical Framework**

The theoretical foundation of this study is based on the public interest theory. The theory is discussed in details below:

### **2.7.1 Public Interest Theory**

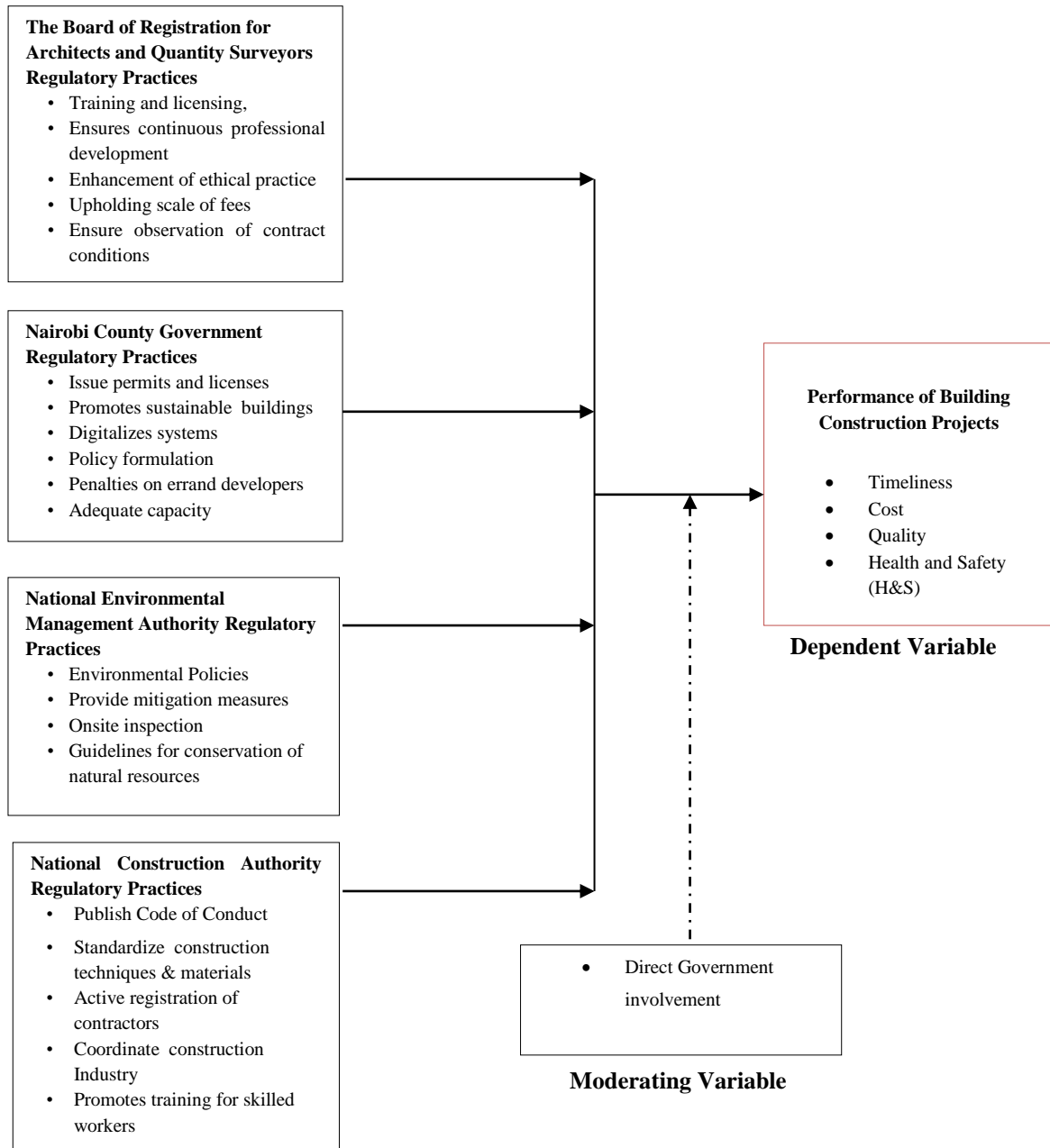
The Public Interest Theory of regulation explains that regulation seeks the protection and benefit of the public at large. In most societies there is a basic presumption that people should be able to go about their own business in their own interests. In the course of this they will interact with other people and influence and be influenced by their activities. However, there are further influences on people's activities: when governments, regulators and others seek to intervene in the public interest.

Becker (1986) 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. While the predator's strength is important, it is not always decisive. The public's interest can be and is maintained in many 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 protected, even when it is in direct conflict with the interests of an industry or professional group. What the evidence suggests is that it is not necessarily the benevolence of the legislator which yields this result. To the contrary, it is the self-interests of the legislator and the incentive to protect those self-interests which leads to this result, in particular when the public's awareness and voting participation are high (Becker, 1986).

## **2.8 Conceptual Framework**

The conceptual framework shows the relationship of the variables to be measured. The independent variables become the parameters that will be measured and their effect on the dependent variable determined. In this study, the researcher views the regulatory practices of The National Construction Authority, The Board of Registration for Architects and Quantity Surveyors, The County Government of Nairobi and The National Environmental Management Authority as subject to the factors that affect the Performance of Building Construction Projects. The moderating variable of the study is direct government involvement. This has been presented in Figure 1.



**Independent Variables**

**Figure 1: Conceptual Framework Source: (Author, 2015)**

**2.9 Knowledge Gap of the Study**

Various related studies have been conducted in relation to the regulatory frameworks and also on the performance of building construction projects. Umeokafor, Umeadi and Jones (2014) reviewed the compliance with occupational safety and health regulations in Nigeria’s construction industry. Famakin and Fawehinmi (2012)

investigated quantity surveyors' perception of construction health and safety regulation in Nigeria. In Kenya, Gacheru and Diang'a (2015) studied the regulation of building contractors in Kenya and challenges of enforcing the National Construction Authority mandate. Kuta and Nyaanga (2014) investigated the effect of competence of contractors on the construction of substandard buildings in Kenya. Ngugi, Mutuku and Gariy (2014) investigated the effects of sand quality on compressive strength of concrete, a case of Nairobi County and its environs.

## **2.10 Summary of Literature Review**

This chapter gives a review of the literature related to influence of regulatory framework on performance of building construction projects as presented by various researchers. The chapter discusses the influence of the Board of Registration for Architects and Quantity Surveyors on performance of building construction projects, influence of the County government of Nairobi, National Environmental Management Authority and National Construction Authority's regulations on the performance of building construction projects in Nairobi. Perspectives of different scholars and researchers were presented so as to establish what had already been done that was relevant for the study. Chapter three provides research methodology which outlines the methods that was used to collect that data, research design and how data was analyzed.



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter details the methodology that was employed in the study. Specifically, it discusses the research design, data collection and analysis and why they are the most preferred for the study.

#### **3.2 Research Design**

Research design refers to the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in the procedure (Yin, 2009). The study adopted a descriptive survey research design. According to Creswell (2008), a descriptive study is concerned with finding out the what, where and how of a phenomenon. Descriptive survey research design was chosen because it can enable the researcher to generalise the findings to a larger population. Surveys allow the collection of large amount of data from a sizable population in a highly economical way. It allows one to collect quantitative data which can be analyzed quantitatively using descriptive and inferential statistics. Therefore, the descriptive survey was deemed the best strategy to fulfill the objectives of this study (Creswell 2008).

#### **3.3 Target Population**

This study targeted all the licensed architectural and quantity surveyor firms and building contractors operating in Nairobi, as well as officers from the BORAQS, NCA, NEMA and the NCG building inspection unit. According to statistics from the Institute of Quantity Surveyors of Kenya (IQSK), there are 63 registered quantity surveyors firms operating in Nairobi. The Architectural Association of Kenya (AAK) has 94 registered architectural firms operating within the Nairobi Area. There are 436 building contractors licensed by the National Construction Authority and operating in Nairobi. The population included 1 official in a management position from BORAQS, NCA, NEMA and NCG building inspection unit. The target population therefore totals to 600.

### **3.4 Sample Size and Sampling Procedure**

This section describes the sample size and sampling procedures as shown in the sub sections below.

#### **3.4.1 Sampling Procedure**

Sampling is a procedure, where in a fraction of the data is taken from a large set of data, and the inference drawn from the sample is extended to whole group. The study used the probability sampling technique; this is because probability samples are the only type of samples where the results can be generalized from the sample to the population. In addition probability samples allow the researcher to calculate the precision of the estimates obtained from the sample and to specify the sampling error.

Ngechu (2004) acknowledges that in determining the purpose of the study and population size, three criteria should be specified to determine the appropriate sample size: the level of precision, the level of confidence or risk, and the degree of variability in the attributes being measured. The degree of variability in the attributes being measured refers to the distribution of attributes in the population. The more heterogeneous a population, the larger the sample size required to obtain a given level of precision.

#### **3.4.2 Sample Size**

According to Mugenda and Mugenda (2001) a sample of 10%-30% of the population is considered adequate provided the sample elements are more than 30 and are scientifically selected. The study used this sample selection criterion to determine the sample size to be investigated.

The study used simple random sampling to select 19 licensed quantity surveyors, 28 licensed civil engineers and 132 licensed building contractors operating in Nairobi. The study also randomly selected 1 officer in management position each from the BORAQS, NCA, NEMA and NCG in charge of building licensing and inspection. This gave a sample size of 183. This is tabulated in Table 3.1

**Table 3.1: Sample Size**

<b>Target Category</b>	<b>Population</b>	<b>Sample size</b>	<b>Percentage</b>
Quantity surveyors	63	19	10.38
Civil engineers	94	28	15.3
Building contractors	439	132	72.13
Representatives from Regulatory bodies		4	2.18
<b>Total</b>		<b>183</b>	<b>100.0</b>

### **3.5 Research Instruments**

The researcher used self-administered questionnaires as the main tool for data collection. The selection of these tools is guided by the nature of data that was collected, time available as well as the objectives of the study. It enabled the researcher to collect more data as much as possible over a short period of time (Fisher, 2004). The questionnaire comprised of both closed and open-ended questions drawn in accordance with the set objectives of the study. The questionnaire was organized in subsections: section A was on the demographic information of the respondents; section B was on the effects of the Board of Registration for Architects and Quantity Surveyors on the performance of building construction projects: section C was on the effects of NEMA regulations on the performance of building construction projects and section D was on the effects of NCA regulations on the performance of building construction projects. The questionnaires were administered to the respondents to enable the researcher to gain a complete and detailed understanding of the regulatory framework and also gain control of the interview.

#### **3.5.1 Pilot Study**

A pilot study was conducted to test the reliability and validity of the research. According to Orodho (2003), a pilot test helps to test the reliability and validity of data collection instruments. Validity refers to the extent to which an instrument measures what is supposed to measure data need not only to be reliable but also true and accurate. If a measurement is valid, it is also reliable (Joppe, 2000). The pilot test will comprise of 2 architects, building contractors and quantity surveyors. However,

to ensure that the study findings are not compromised, the respondents who take part in the pilot study was not included in the final study.

### **3.5.2 Validity of the Instruments**

Content validity focuses on how the questions in the questionnaire answer the research questions. The content validity of the data collection instruments will be determined through discussing the stated questions in the instruments with 2 civil engineers and 1 respondent from NEMA and NCG to test the validity of the research instrument. They were expected to tick the questionnaires and assist to establish to the influence of regulatory framework on performance of building construction of projects in Nairobi. Validity will be determined by the use of Content validity Index (C.V.I). Content validity Index of between 0.7 and 1 shows the instruments to be valid for the study (Orodho, 2003).

### **3.5.3 Reliability of Instruments**

Reliability is the consistency, stability or dependability of the data. Whenever an investigator measures a variable, he or she wants to be sure that the measurement provides dependable and consistent results (Cooper & Schindler, 2003). To measure the reliability of the data collection instruments an internal consistency technique using Cronbach's alpha was applied to the gathered data (Mugenda & Mugenda, 2003). Cronbach's alpha is a coefficient of reliability that gives an unbiased estimate of data generalizability and an alpha coefficient of 0.70 or higher indicates that the gathered data is reliable as it has a relatively high internal consistency and can be generalized to reflect opinions of all respondents in the target population (Zinbarg, Revelle, Yovel & Li, 2005).

Cronbach's alpha was above 0.7 this implies that the instruments were sufficiently reliable for the measurement. This is shown on Table 3.2

**Table 3.2: Reliability and Validity Test**

<b>Variable/Construct description</b>	<b>Item Means</b>	<b>Cronbach's Alpha Reliability</b>
BORAQS Regulatory Practices and Performance of Building Construction Projects	4	0.838
NCG Regulatory Practices and Performance of Building Construction Projects	6	0.732
NEMA Regulatory Practices and Performance of Building Construction Projects	4	0.824
NCA Regulatory Practices and Performance of Building Construction Projects	6	0.712

### **3.6 Data Collection Methods**

Data collection tools are the instruments which are used to collect the necessary information needed to serve or prove some facts (Mugenda and Mugenda, 2003). The study will collect primary data. The data was collected using a questionnaire. The questionnaire comprised of two sections. The first was designed to determine fundamental issues including the demographic characteristics of the respondent, while the second part consisted of questions where the four variables are focused. The questionnaire was designed in line with the objectives of the study. Structured questions were used in an effort to conserve time and money as well as to facilitate easier analysis as they are in immediate usable form; while the unstructured questions were so as to encourage the respondent to give an in-depth and felt response without feeling held back in revealing of any information (Mugenda and Mugenda, 2003).

### **3.6 Data Analysis Techniques**

In order to analyze collected data, Mugenda and Mugenda (2003) observed that a researcher needs to have the following information about the statistical data analysis tools namely: descriptive, inferential and test statistics. Before processing the responses, the completed questionnaires will be checked for completeness to ensure

consistency. The data will then be coded to enable the responses to be grouped into various categories.

Quantitative data were analyzed by descriptive analysis using SPSS (V. 20.0) to describe the influence of regulatory framework on the performance of building construction projects in Nairobi City County. Findings will be 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, the researcher conducted a multiple regression analysis in order to establish the influence of regulatory framework 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. Regression analysis is concerned with the study of the dependence of one variable, the dependent variable, on one or more other variables, the explanatory variables, with a view to estimating and/ or predicting the population mean. The multivariate regression equation is:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Whereby:

Y = Performance of building construction projects

X<sub>1</sub> = BORAQS regulatory practices

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

X<sub>3</sub> = NEMA regulatory practices

X<sub>4</sub> = NCA regulatory 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>.

### **3.7 Ethical Considerations**

Ethics in research requires personal integrity from the researcher. The goal of ethics in research is to ensure that no one is harmed or suffer adverse consequences from research activities (Cooper & Schindler, 2003). The researcher assured the respondents that the questionnaires are non-invasive and the information gathered solely for academic purposes only and not for any other purpose.

### **3.8 Operational Definition of Variables**

An operational definition is a result of the process of operationalization and is used to define something (e.g. a variable, term, or object) in terms of a process (or set of validation tests) needed to determine its existence, duration, and quantity. The definition of variables is shown on Table 3.3

**Table 3.3: Operational Definition of Variables**

Objectives	Variable	Type	Indicators	What measure to	Measurement Scale	Data Analysis Technique	Tools of Analysis
To establish how the Board of Registration for Architects and Quantity Surveyors regulatory practices influence the performance of building construction projects in Nairobi County	The Board of Registration for Architects and Quantity Surveyors	Independent	<ul style="list-style-type: none"> <li>• Training and licensing,</li> <li>• Ensures continuous professional development</li> <li>• Enhancement of ethical practice</li> <li>• Upholding scale of fees</li> <li>• Ensure observation of contract conditions</li> </ul>	Compliance to BORAQS regulations	Ordinal	Descriptive analysis	Regression
To determine the extent to which NCG regulatory practices influences the performance of building construction projects	County Council Nairobi	Independent	<ul style="list-style-type: none"> <li>• Issue permits and licenses</li> <li>• Promotes sustainable buildings</li> <li>• Digitalizes systems</li> <li>• Policy formulation</li> <li>• Penalties on errand developers</li> <li>• Adequate capacity</li> </ul>	Compliance to CGN policies	Ordinal	Descriptive analysis	Regression
To establish how NEMA regulatory practices influence the performance of building construction projects	National Environmental Management Authority	Independent	<ul style="list-style-type: none"> <li>• Environmental Policies</li> <li>• Provide mitigation measures</li> <li>• Onsite inspection</li> <li>• Guidelines for conservation of natural resources</li> </ul>	Compliance to NEMA regulations	Ordinal	Descriptive analysis	Regression
To determine the extent to which NCA regulatory practices influence the performance of building construction	National Construction Authority	Independent	<ul style="list-style-type: none"> <li>• Publish Code of Conduct</li> <li>• Standardize construction techniques &amp; materials</li> <li>• Active registration of contractors</li> <li>• Coordinate construction Industry</li> <li>• Promotes training for skilled workers</li> </ul>	-Compliance to NCA regulations	Ordinal	Descriptive analysis	Regression
	Performance of building construction projects	Dependent			Ordinal	Descriptive analysis	Regression



## **CHAPTER FOUR**

### **DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION**

#### **4.1 Introduction**

The study was conducted to investigate the influence of regulatory framework on the performance of building construction projects in Nairobi County Kenya. The chapter provides data analysis, presentation interpretation of findings and discussions of the results based on the research objectives in order to answer the research questions. To enhance quality, the collected data from all the respondents were analyzed using the Statistical Package for Social Sciences (SPSS). Results are presented in this section in form of frequency tables, percentages, mean and standard deviations.

##### **4.1.1 Questionnaire Return Rate**

A total of 183 questionnaires were distributed to the respondents. Out of these, 137 questionnaires were returned duly completed. This represents a response rate of 75%. This response was good enough and representative of the population and conforms to Mugenda and Mugenda (2003) stipulation that a response rate of 70% and above is excellent. This was therefore considered a representative sample for further analysis.

#### **4.2 Demographic Information**

This section sought to identify the demographic information of the respondents including gender, age group, period working in the organization and the level of education. These characteristics are important because they are known to influence the variables in a given study.

##### **4.2.1 Gender Distribution of the Respondent**

The study sought to establish the gender distribution of the respondents. The findings are shown on Table 4.2:

**Table 4.1: Gender Distribution of the Respondent**

<b>Gender</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Male	84	61
Female	53	39
<b>Total</b>	<b>137</b>	<b>100</b>

As shown in Table 4.2, majority 61% were male while 39% were female. This finding shows that females have been adequately included or they have been serious in matters of construction operations which is a desirable balance.

#### **4.2.2 Age Group Distribution of the Respondents**

The study sought to determine the age distribution of the respondents. The findings are shown in Table 4.3:

**Table 4.2: Age Group Distribution of the Respondents**

<b>Age</b>	<b>Frequency</b>	<b>Percentage (%)</b>
18-25 Years	22	16
26-34 Years	46	34
35-44 Years	30	22
45-54 Years	33	24
55 years and above	6	4
<b>Total</b>	<b>137</b>	<b>100</b>

According to the research findings presented in Table 4.3, majority of the respondents 34% were between 26-34 years followed by 24% who were between 45-54 years, 22% were between 35-44 years, 16% who were between 18-25 years while the least 4% were 55 years and above. This shows that most of the respondents were mature enough and had experience thus the data collected is relevant and reliable.

#### 4.2.3 Period they have Worked in the Organization

The respondents were asked to indicate the number of years they had worked with the organization. The findings are well illustrated in the Table 4.2:

**Table 4.3: Period they have worked in the Organization**

Years	Frequency	Percentage
Less than 5 years	15	11
5-10 Years	65	48
11-15 Years	32	23
16-20 Years	11	8
Over 20 Years	14	10
<b>Total</b>	<b>137</b>	<b>100</b>

As indicated in the Table 4.2, majority of the respondents 48% had worked with their organizations for a period of between 5-10 years followed by 23% who had worked for between 11-15 years, 11% were less than 5 years, 10% were over 20 years while the least proportion of respondents 8% had worked for a period of between 16-20 years. These findings show that majority of the respondents had worked with their current organizations for over 5 years hence were able to understand how these organizations operated.

#### 4.2.4 Highest Level Of Education of the Respondents

The study also sought to establish the level of education attained by the respondents. The findings are shown in Table 4.5:

**Table 4.4: Highest Level of Education of the Respondents**

	Frequency	Percentage (%)
College Diploma	22	16
Undergraduate	71	52
Masters degree	32	23
PhD	12	9
<b>Total</b>	<b>137</b>	<b>100</b>

From the findings in Table 4.5, high numbers of the respondents 52% were undergraduate, followed by 23% with Master’s degree, 16% with college diploma and the least 9% with PhD. This indicates that majority of the respondents are post-secondary graduates and therefore are equipped with necessary skills and knowledge to make right decisions hence the data is reliable.

### **4.3 BORAQS Regulatory Practices and the Performance of Building Construction Projects**

The respondents were asked to indicate the extent to which BORAQS regulatory practices influence the performance of Building Construction Projects. The means and standard deviations of the ratings were calculated and the findings are shown in Table 4.6.

**Table 4.5: BORAQS Regulatory Practices and Performance of Building Construction Projects**

<b>Statement</b>	<b>Mean</b>	<b>Stdev</b>
BORAQS ensures that Architects and Quantity Surveyors are trained and licensed in the planning, designing and costing of buildings	4.1	1.07
BORAQS promotes continuous professional development of Architect and Quantity Surveyors by organizing mandatory workshops and seminars for the professionals	3.8	1.03
BORAQS ensures enhancement of ethical practice by Architects and Quantity Surveyors in the construction industry through publishing and enforcing regulations on professional misconduct.	3.6	0.97
The Board eliminates unfair competition for work among Architect and Quantity Surveyors by enforcing a scale of fees chargeable.	3.9	1.05
BORAQS ensures Architect and Quantity Surveyors direct, co-ordinate, design and supervise works executed as per the building contract.	3.5	0.90

As indicated in Table 4.6, BORAQS ensures that Architects and Quantity Surveyors are trained and licensed in the planning, designing and costing of buildings had the highest mean of 4.1 with a standard deviation of 1.07 followed by BORAQS promotes continuous professional development of Architect and Quantity Surveyors by organizing mandatory workshops and seminars for the professionals which had a mean of 3.9 and standard deviation of 1.05. BORAQS ensures enhancement of ethical practice by Architects and Quantity Surveyors in the construction industry through publishing and enforcing regulations on professional misconduct had a mean of 3.8 with a standard deviation of 1.03. The Board eliminates unfair competition for work among Architect and Quantity Surveyors by enforcing a scale of fees chargeable had a mean of 3.6 with a standard deviation of 0.97 and BORAQS ensures Architect and Quantity Surveyors direct, co-ordinate, design and supervise works executed as per the building contract had a mean of 3.5 with a standard deviation of 0.90. This shows that the Board of Registration for Architects and Quantity Surveyors has executed its mandate through training, registration and enhancement of ethical practice thus enhancing performance in the building construction industry.

#### **4.3.1 Extent to which BORAQS Influence the Performance of Building Construction Projects**

The study sought to determine the extent to which BORAQS influence the performance of building construction projects in Nairobi County. The findings are shown in Table 4.7:

**Table 4.6: Extent to which BORAQS Influence the Performance of Building Construction Projects**

<b>Extent</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Very Great Extent	13	9
Great Extent	45	33
Moderate Extent	52	38
Little Extent	27	20
<b>Total</b>	<b>137</b>	<b>100</b>

As shown in Table 4.7, majority of the respondents 38% indicated a moderate extent that BORAQS influence the performance of building construction projects, 33% indicated a great extent, 20% indicated a little extent and the least 9% indicated it had influence performance to a great extent. Majority of the respondents were in agreement that Board of Registration for Architects and Quantity Surveyors had influence the performance of building construction projects in Nairobi County.

#### **4.4 NCG Regulatory Practices on the Performance of Building Construction Projects**

The study sought to determine the extent to which NCG regulatory practices influence the performance of Building Construction Projects. The means and standard deviations of the ratings were calculated and the findings are shown in Table 4.8.

**Table 4.7: NCG Regulatory Practices on the Performance of Building Construction Projects**

<b>Statement</b>	<b>Mean</b>	<b>Stdev</b>
Nairobi County Government building and licensing department issues construction and occupation permits on time	3.3	1.09
The County Government addresses alternative innovative approaches to building construction towards more sustainable of “green” buildings	2.5	0.93
Nairobi County Government has formulated a statutory and regulatory framework to embrace digital system for management of developments applications	3.2	1.03
The County Government involves the public and stakeholders in policy formulation	3.5	1.15
The County Government reviews and enhances enhances penalties on errand developers to increase compliance	3.6	1.12
Nairobi County Government has adequate institution capacity to enforce the building construction regulations	2.6	0.97

From the research finding in Table 4.8, Reviews enhances penalties on errand developers to increase compliance had the highest mean of 3.6 with a standard deviation followed by Involves the public and stakeholders in policy formulation had a mean of 3.5 with a standard deviation 1.15, Nairobi county government issues construction and occupation permits on time had a mean of 3.3 with a standard deviation of 1.09, the County has formulated a statutory and regulatory framework to embrace digital system for management of developments applications had a mean of 3.2 with standard deviation of 1.03, the county has adequate institution capacity to enforce the building construction regulations had a mean of 2.6 with standard deviation of 0.97 and addresses alternative innovative approaches to building construction towards more sustainable of “green” buildings had the least mean of 2.5 with standard deviation of 0.93.

This shows that the NCG has executed its mandate through licensing, promoting sustainable developments, digitalizing systems, stakeholder involvement in policy formulation, penalties imposition on errant developers and boosting institutional capacity to enforce regulations thus enhancing performance in the building construction industry with a considerable degree of success.

#### **4.4.1 Extent to which NCG Regulatory Practices Influence Performance of Building Construction Projects.**

The study sought to establish the extent to which Nairobi County Government regulatory practices influence the performance of building construction projects in Nairobi County. The findings are shown in Table 4.9:

**Table 4.8: Extent to which NCG Regulatory Practices Influence Performance of Building Construction Projects.**

<b>Extent</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Very Great Extent	26	19
Great Extent	60	44
Moderate Extent	45	33
Little Extent	6	4
<b>Total</b>	<b>137</b>	<b>100</b>

As indicated in Table 4.9, majority of the respondents 44% agreed to a great extent that NCG regulatory practices influence the performance of building construction projects in Nairobi County, 33% agreed to a moderate extent, 19% to a very great extent and the least 4% to a little extent. This shows that Nairobi County Government regulatory practices influence the performance of building construction projects in Nairobi County to a great extent.

#### **4.5 NEMA Regulatory Practices on the Performance of Building Construction Projects**

Several statements on the effects of National Environmental Management Authority regulations on the performance of building construction projects in Nairobi County were identified against which the respondents were requested to indicate the extent to which they applied to them. The means and standard deviations of the ratings were calculated and the findings are shown in Table 4.10.

**Table 4.9: NEMA Regulatory Practices on the Performance of Building Construction Projects**

<b>Statement</b>	<b>Mean</b>	<b>Stdev</b>
NEMA effectively implements environmental policies	3.7	1.03
NEMA proposes and enforces effective mitigation measures for significant negative impacts of building construction projects	3.5	0.94
NEMA carries out on-site inspection properly and on time	2.9	0.83
NEMA issue guidelines for the management and conservation of natural resources and the environment during construction	3.1	0.91

As indicated in Table 4.10, NEMA effectively implements environmental policies had the highest mean of 3.7 with a standard deviation 1.03, proposes effective mitigation measures for significant negative impacts of building construction projects had a mean of 3.5 with standard deviation of 0.94, Issue guidelines for the management and conservation of natural resources and the environment during



construction had a mean of 3.1 with a standard deviation of 0.91 and carries out onsite inspection properly and on time had the least mean of 0.83.

This shows that NEMA carries out environmental audit of all activities that are likely to have significant effect on the environment during the course of executing the project. This includes monitoring during the operation of the project or building with a view of determining its immediate and long-term effects on the environment project.

#### **4.5.1 Extent to which NEMA Regulatory Practices influence the Performance of Building Construction Projects**

The study sought to determine the extent to which NEMA influence the performance of building construction projects in Nairobi County. The findings are shown in Table 4.11.

**Table 4.10: Extent to which NEMA Regulatory Practices influence the Performance of Building Construction Projects**

<b>Extent</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Very Great Extent	30	22
Great Extent	53	39
Moderate Extent	43	31
Little Extent	11	8
<b>Total</b>	<b>137</b>	<b>100</b>

As shown in the research finding Table 4.11, 39% of the respondents indicated to a great extent NEMA influence the performance of building construction projects, 31% agreed to a moderate extent, 22% agreed to a very great extent and the least 8% indicated that it influence to a little extent. This shows that NEMA regulatory practices influence the performance of building construction projects in Nairobi County to a great extent.

#### **4.6 NCA Regulations on the Performance of Building Construction Projects**

Several statements on the effects of National Construction Authority regulations on the performance of building construction projects in Nairobi County were identified against which respondents were requested to indicate how they affect

them. The means and standard deviations of the ratings were calculated and the findings are shown in Table 4.12:

**Table 4.11: NCA Regulations on the Performance of Building Construction Projects**

Statement	Mean	Stdev
NCA regularly publishes and enforces the code of conduct for the building contractors in Kenya	3.9	1.09
NCA effectively standardizes construction techniques & materials	3.4	1.05
NCA actively registers and certifies constructors	4.2	1.14
NCA coordinates the construction industry players	3.7	1.07
NCA provides and coordinates training programs organized by the accredited centers for all construction industry workers	3.1	0.97
NCA ensures public and private institutions provide quality education and training to construction workers and supervisors.	3.3	1.02

As indicated in Table 4.6, NCA actively registers and certifies constructors had the highest mean of 4.2 with a standard deviation of 1.14 followed by NCA regularly publishes and enforces the code of conduct for the building contractors in Kenya which had a mean of 3.9 with a standard deviation of 1.09, NCA coordinates construction industry players had a mean of 3.7 with a standard deviation of 1.07, NCA effectively standardizes construction techniques & materials had a mean of 3.4 with a standard deviation of 1.05 and NCA provides and coordinates training programs organized by the accredited centers for all construction industry workers had the least mean of 3.1 with standard deviation of 0.97.

This shows that the NCG has executed its mandate through publishing the code of conduct, standardizing construction materials, registration of contractors and training initiatives thus enhancing performance in the building construction industry.

#### 4.6.1 Extent to which NCA Regulations Influence the Performance of Building Construction Projects

The study sought to determine the extent to which NCA regulations influence the performance of building construction projects. The findings are shown in Table 4.13.

**Table 4.12: Extent to which NCA Regulatory Practices Influence the Performance of Building Construction Projects**

<b>Extent</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Very Great Extent	25	18
Great Extent	56	41
Moderate Extent	45	33
Little Extent	11	8
<b>Total</b>	<b>137</b>	<b>100</b>

As shown in Table 4.13, 41% of the respondents agreed to a great extent that NCA regulations influence the performance of building construction projects, 33% agreed to a moderate extent, 18% agreed to a very great extent and the least 8% to a little extent.

#### 4.7 Performance of Building Construction Projects

Several statements on the performance of building construction projects in Nairobi County were identified against which respondents were requested to indicate how they affect them. The means and standard deviations of the ratings were calculated and the findings are shown in Table 4.14:

**Table 4.13: Performance of Building Construction Projects**

<b>Statement</b>	<b>Mean</b>	<b>Stdev</b>
Policies have been enhanced in building construction industry	3.4	1.21
Cost have been reduced due to adoption of regulatory frameworks	4.0	1.26
Quality has been improved	3.3	1.03
Health and Safety measures are in place	3.9	1.24

As indicated in Table 4.14, Cost have reduced due to adoption of regulatory frameworks had the highest mean of 4.0 with a standard deviation of 1.26, health and safety measures are in place had a mean 3.9 with standard deviation of 1.24, Policies have been enhanced in building construction industry had a mean of 3.4 with a standard deviation of 1.21 and Quality has been improved had the least mean of 3.3 with a standard deviation of 1.03.

This shows that a comprehensive and effective regulatory framework in the construction industry should be able to protect the citizens or the general public for social prosperity, ensure that markets are fair, quality, efficient and transparent and reduce the systemic environmental risk associated with the construction activities.

#### 4.8 Multiple Regression Analysis

A regression analysis was conducted to determine how BORAQS regulatory practices, NCG regulatory practices, NEMA regulatory practices and NCA regulatory practices related to performance of building construction projects in Nairobi County. The Statistical Package for Social Sciences (SPSS) was used to code, enter and compute the measurements of the multiple regressions for the study.

**Table 4.14: Regression Model**

Model	R	R Square	Adjusted R	
			Square	Std. Error of the Estimate
1	.929 <sup>a</sup>	.864	.782	.28

From the findings in Table 4.15, R was 0.929 meaning that there was a positive relationship between all the four regulatory practices while combined and performance of building construction projects.  $R^2$  was 0.864 implying that only 86.4% of the dependent variable variations could be explained by independent variables while only 13.6% of the variations were due to other factors. This implies that the regression model has very good explanatory and predictor grounds as only 13.6% of the variations in performance could not be explained.

**Table 4.15 ANOVA**

<b>Model</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	250	4	62.5	2.09	.013 <sup>b</sup>
Residual	3950	132	29.9		
<b>Total</b>	<b>4200</b>	<b>136</b>			

From the findings in Table 4.16 the results show that the model had an F ratio of 2.09 and the p value was 0.013<0.05, implying that the F ratio was statistically significant, therefore the overall regression model for all the four regulatory practices is statistically significant and can be used for prediction purposes at 5 % significance level, this further indicate that the variables used in this study are statistically significant.

**Table 4. 16 Coefficients**

<b>Model</b>		<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>t</b>	<b>Sig.</b>
		<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
1	(Constant)	2.286	.622		3.675	.014
	BORAQS regulatory practices	.696	.149	.995	4.661	.006
	NCG regulatory practices	.052	.161	.060	.323	.760
	NEMA regulatory practices	.384	.102	.738	3.783	.013
	NCA regulatory practices	.457	.356	0.338	1.283	.037

From the table 4.14, the regression model can be written as:

$$Y=2.286 + 0.696X_1 + 0.052X_2 + 0.384X_3 + 0.457X_4 + \varepsilon$$

The t and Sig (p) values give a rough indication of the impact of each predictor variable – a big absolute t value and small p value suggests that a predictor variable is having a large impact on the criterion variable. At 5% level of significance and 95% level of confidence system BORAQS regulatory practices

had a coefficient value of 0.696, NCG regulatory practices had a 0.052, NEMA regulatory practices had a coefficient of 0.384 and NCA regulatory practices had a coefficient of 0.457.

Based on the above, the predictor variables that are BORAQS, NCG, NEMA and NCA regulatory practices statistically significantly predict the criterion variable, which is the performance of building construction projects in Nairobi County, Kenya. All four variables added statistically significantly to the prediction.

# **CHAPTER FIVE**

## **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMEDATIONS**

### **5.1 Introduction**

This chapter presents the summary of the key data findings, discussion of the findings, conclusion drawn from the findings highlighted and recommendation made. The conclusions and recommendations drawn were focused on addressing the purpose of this study which was to investigate the influence of regulatory framework on the performance of building construction projects in Nairobi County, Kenya.

### **5.2 Summary of Findings**

This section presents a summary of the findings as per the research objectives and the research questions.

#### **5.2.1 BORAQS Regulatory Practices on the Performance of Building Construction Projects**

The study found out that BORAQS ensures that Architects and Quantity Surveyors are trained and licensed in the planning, designing and costing of buildings, promotes continuous professional development of Architect and Quantity Surveyors by organizing mandatory workshops and seminars for the, ensures enhancement of ethical practice by Architects and Quantity Surveyors in the construction industry through publishing and enforcing regulations on professional misconduct, eliminates unfair competition for work among Architect and Quantity Surveyors by enforcing a scale of fees chargeable and ensures Architect and Quantity Surveyors direct, co-ordinate, design and supervise works executed as per the building contract. The study established that BORAQS influence the performance of building construction projects in Nairobi County to a great extent.

### **5.2.2 NCG Regulatory Practices on the Performance of Building Construction Projects**

The study found out that Nairobi county government issues construction and occupation permits on time and reviews enhances penalties on errand developers to increase compliance. The County has formulated a statutory and regulatory framework to embrace digital system for management of developments applications which involves the public and stakeholders in policy formulation. The study further established that the county has adequate institution capacity to enforce the building construction regulations and addresses alternative innovative approaches to building construction towards more sustainable of “green” buildings.

### **5.2.3 NEMA Regulatory Practices on the Performance of Building Construction Projects**

The study found that NEMA effectively implements environmental policies, proposes effective mitigation measures for significant negative impacts of building construction projects, issues guidelines for the management and conservation of natural resources and the environment during construction and carries out onsite inspection properly and on time.

### **5.2.4 NCA Regulatory Practices on the Performance of Building Construction Projects**

The study established that NCA registers and certifies constructors, regularly publishes the code of conduct for the building construction industry, coordinates construction industry, effectively standardizes construction techniques & materials and NCA provides and coordinates training programs organized by the accredited centers for all construction industry workers.

## **5.3 Conclusion**

The study concludes that a 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. This is especially the case with respect to risk management and the need for regulators to have sufficient skills to oversee firms in the context of rapid economic disparities, environmental changes and growing social demands in the society. Ensuring adequacy of



supervisory resources and the embedding of skills in regulatory staffs in the key prudential areas where failures have occurred in the recent past need to be an important focus for the future of effectiveness of regulatory framework.

The study concludes that the Board of Registration for Architects and Quantity Surveyors had executed its mandate through training, registration and enhancement of ethical practice thus enhancing performance in the building construction industry.

The study further concluded that NEMA has also not been at the forefront in promoting the use of renewable sources of energy in the construction industry and regulation challenges include environmental management in the context of rapid population growth and urbanization.

#### **5.4 Recommendation**

From the findings and conclusions drawn from the analysed information, the following are the recommendations of the study;

1. The study recommends 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 in Nairobi.
2. The study also recommends that an 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.
3. The study further recommends that the regulatory framework governing the construction industry could seek legal capacity to prosecute errant developers who through unsustainable construction practices cause loss of life and depletion of non-renewable resources.
4. The study further recommends that NEMA could carry out environmental audit of all activities that are likely to have significant effect on the environment during the course of executing the project which includes

monitoring during the operation of the project or building with a view of determining its immediate and long-term effects on the environment project.

### **5.5 Areas for Further Research**

The researcher recommends that studies on the influence of regulatory framework on the performance of building construction projects could be done in other counties in Kenya in order to generalize the results. Since this study concentrated on influence of regulatory framework on the performance of building construction projects with special reference to Nairobi further studies could be done in other major towns and cities in Kenya for comparison purposes and allow for generalization of the findings.

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## **APPENDICES**

### **APPENDIX I: LETTER OF TRANSMITTAL OF INSTRUMENTS**

Simon Ndungu Ndumia,  
P.O. Box 2615-00200  
Nairobi

Dear Respondent,

#### **RE: REQUEST FOR PARTICIPATION IN DATA COLLECTION**

I am a student in the University of Nairobi pursuing Masters of Arts in project planning and management. To meet the requirements for the award of the degree, am undertaking a study on **INFLUENCE OF REGULATORY FRAMEWORK ON THE PERFORMANCE OF BUILDING CONSTRUCTION PROJECTS IN NAIROBI COUNTY, KENYA**

Kindly provide data that I require for this study through the provided research instruments.

The information you provide will be used for research purpose only and your identity will be held confidential.

Thank you

Yours faithfully,

Simon Ndungu Ndumia

University of Nairobi

0722367177

## APPENDIX II: QUESTIONNAIRE

### INFLUENCE OF REGULATORY FRAMEWORK ON THE PERFORMANCE OF BUILDING CONSTRUCTION PROJECTS IN NAIROBI COUNTY, KENYA

Date \_\_\_\_\_

Please take a few minutes to complete this questionnaire. Your honest option will be completely anonymous, but your views, in combination with those of others are extremely important in this research. All the information provided will be kept strictly confidential and will only be used for the purpose of this study. Your participation will be highly appreciated.

#### **PART A: Demographic Information**

*(Please tick one box for each of the questions)*

1. What is your gender?

Male  Female

2. What is your age group?

18-25  26-34

35-45  45-54

55 and Above

3. How long have you worked with your Organization?

Less than 5 years  5-10 years

11-15 years  16-20 years

More than 20 years

4. Please indicate your highest level of education

College Diploma  Undergraduate degree

Masters degree  PhD



**PART B: Influence of the Board of Registration for Architects and Quantity Surveyors Regulatory Practices on the Performance of Building Construction Projects in Nairobi County**

5. Below are some statements on Influence of the Board of Registration for Architects and Quantity Surveyors on the performance of building construction projects in Nairobi County. On a scale of 1- 5 (where 1= strongly disagree, 2= disagree, 3= Neutral, 4= agree and 5= strongly) kindly indicate the extent of agreement to the statements.

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
BORAQS ensures that Architects and Quantity Surveyors are trained and licensed in the planning, designing and costing of buildings					
BORAQS promotes continuous professional development of Architect and Quantity Surveyors by organizing mandatory workshops and seminars for the professionals					
BORAQS ensures enhancement of ethical practice by Architects and Quantity Surveyors in the construction industry through publishing and enforcing regulations on professional misconduct.					
The Board eliminates unfair competition for work among Architect and Quantity Surveyors by enforcing a scale of fees chargeable.					

6. In general, to what extent does the Board of Registration for Architects and Quantity Surveyors regulatory practices influence the performance of building construction projects in Nairobi County.

- i. To a very great extent [ ]
- ii. To a great extent [ ]
- iii. To a moderate extent [ ]
- iv. To a little extent [ ]
- v. To no extent [ ]

**PART C: Influence of Nairobi County Government’s Regulatory Practices on the Performance of Building Construction Projects in Nairobi County**

7. Below are some statements on the effects of Nairobi county government regulations on the performance of building construction projects in Nairobi County. On a scale of 1- 5 (where 1= strongly disagree, 2= disagree, 3= Neutral, 4= agree and 5= strongly) kindly indicate to what extent you agree with the statements.

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Nairobi County Government building and licensing department issues construction and occupation permits on time					
The County Government addresses alternative innovative approaches to building construction towards more sustainable of “green” buildings					
Nairobi County Government has formulated a statutory and regulatory framework to embrace digital system for management of developments applications					
The County Government involves the public and stakeholders in policy formulation					
The County Government reviews and enhances penalties on errand developers to increase compliance					
Nairobi County Government has adequate institution capacity to enforce the building construction regulations					

8. In general, to what extent does the county government of Nairobi regulatory practices influence the performance of building construction projects in Nairobi County.

- i. To a very great extent [ ]
- ii. To a great extent [ ]
- iii. To a moderate extent [ ]
- iv. To a little extent [ ]
- v. To no extent [ ]

**PART C: Influence of National Environmental Management Authority Regulatory Practices on the Performance of Building Construction Projects in Nairobi County**

9. Below are some statements on the effects of National Environmental Management Authority regulations on the performance of building construction projects in Nairobi County. On a scale of 1- 5 (where 1= strongly disagree, 2= disagree, 3= Neutral, 4= agree and 5= strongly) kindly indicate to what extent you agree with the statements.

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
NEMA effectively implements environmental policies					
NEMA proposes and enforces effective mitigation measures for significant negative impacts of building construction projects					
NEMA carries out on-site inspection properly and on time					
NEMA issue guidelines for the management and conservation of natural resources and the environment during construction					

10. In general, to what extent does the National Environmental Management Authority regulatory practices influence the performance of building construction projects in Nairobi County.

- i. To a very great extent [ ]
- ii. To a great extent [ ]
- iii. To a moderate extent [ ]
- iv. To a little extent [ ]
- v. To no extent [ ]

**PART D: Influence of National Construction Authority Regulations on the Performance of Building Construction Projects in Nairobi County**

11. Below are some statements on the effects of National Construction Authority regulations on the performance of building construction projects in Nairobi County. On a scale of 1- 5 (where 1= strongly disagree, 2= disagree, 3= Neutral, 4= agree and 5= strongly) kindly indicate to what extent you agree with the statements.

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
NCA regularly publishes and enforces the code of conduct for the building contractors in Kenya					
NCA effectively standardizes construction techniques & materials					
NCA actively registers and certifies constructors					
NCA coordinates the construction industry players					
NCA provides and coordinates training programs organized by the accredited centers for all construction industry workers					
NCA ensures public and private institutions provide quality education and training to construction workers and supervisors.					

12. In general, to what extent does the National Construction Authority regulatory practices influence the performance of building construction projects in Nairobi County.

- i. To a very great extent [ ]
- ii. To a great extent [ ]
- iii. To a moderate extent [ ]
- iv. To a little extent [ ]
- v. To no extent [ ]

### **PART E: Performance of Building Construction Projects**

13. Below are some statements on the performance of building construction projects in Nairobi County. On a scale of 1- 5 (where 1= strongly disagree, 2= disagree, 3= Neutral, 4= agree and 5= strongly) kindly indicate to what extent you agree with the statements.

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Policies have been enhanced in building construction industry					
Cost have been reduced due to adoption of regulatory frameworks					
Quality has been improved					
Health and Safety measures are in place					