PRIVATE CONSTRUCTION DEVELOPERS' CAPACITY AND COMPLIANCE TO NATIONAL CONSTRUCTION AUTHORITY REGULATIONS: A CASE OF NAIROBI COUNTY

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DECLARATION

This research project is my original work and has never been submitted for an award of a degree in any other university.

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This research project has been submitted for examination with my approval as the University of Nairobi supervisor.

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DEDICATION

I would like to dedicate this research project to my parents Paul and Margaret Gichuke and siblings Patrick Mwangi and Claire Wambui for their unconditional love, support and encouragement throughout the course of this work.

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LIST OF ABBREVIATIONS AND ACRONYMS

CIDB	Construction Industry Development Board
FAR	Floor Area Ratio
GDP	Gross Domestic Product
GoK	Government of Kenya
ICT	Information and Communications Technology
KENHA	Kenya National Highways Authority
KERRA	Kenya Rural Roads Authority
KRA	Kenya Revenue Authority
KURA	Kenya Urban Roads Authority
NCA	National Construction Authority
NEMA	National Environment Management Authority
NHC	National Housing Corporation
SPSS	Statistical Package for the Social Sciences
UK	United Kingdom
USA	United States of America

ABSTRACT

There are myriad of regulations that construction developers have to comply with including regulations concerning the environment, professional codes of practice, health and safety regulations, permits, tax and insurance laws. Due to these numerous regulations, construction developers may comply with some regulations and ignore others, for instance tax evasion, which is very common. The purpose of this study was to examine the influence of private construction developers' capacity on compliance to National Construction Authority's regulations in Nairobi County. The study sought to determine how financial capacity influence private construction developers' compliance to National Construction Authority regulations, to assess the level at which technological capacity influence private construction developers' compliance to National Construction Authority regulations, to examine the extent to which human capacity influence private construction developers' compliance to National Construction Authority regulations, to establish how culture influence private construction developers' compliance to National Construction Authority regulations and to examine how combined capacity influence private construction developers' compliance to National Construction Authority regulations. Research design that was used was descriptive survey. The target population was 3, 641 developers in Nairobi County. The sample size was computed using the Yamane formula. The study sample size was 360 respondents. Selection of the sample was done using systematic sampling method. A list of private construction developers in Nairobi County were retrieved from National Construction Authority records. This list was used to form a sampling frame and from the list developers were picked based on systematic sampling technique until sample size was reached. Collection of primary data was by use of semi structured questionnaires. Gathered quantitative information was analyzed using descriptive analysis like the mean, frequency and percentages. Presentation of the findings was by use of tables. The study determined the association between response and predictor variables by computing multiple regression analysis. The study found that financial capacity has a positive significant influence on compliance to National Construction Authority Regulations (β=0.303); technological capacity positively and significantly influences compliance to National Construction Authority Regulations β=0.291); human capacity positively and significantly influences compliance to National Construction Authority Regulations (β=0.375); and culture positively and significantly influences compliance to National Construction Authority Regulations (β=0.304). The study therefore recommends the need to ensure there is sufficient financial capacity to ensure that activities in construction site are implemented successfully and work progresses smoothly. Construction developers' should embrace new technology, and ensure that they have knowledge regarding modern management and understand construction process and design; this will enhance management of construction projects. It is the responsibility of the government of Kenya to ensure that all registered constructors and construction workers are qualified which will enhance the quality of construction activities.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Globally, any country whether developed or developing, considers the construction sector to play a very crucial role towards development of the economy and creation of infrastructure that enables the development of social economy (Oladinrin, Ogunsemi, & Aje, 2012). The greatest source of employment has been found to be the construction industry and it is approximated that every 10 construction jobs create another 10 jobs in the economy. In any country, the development of social economy is boosted significantly by the construction sector. Kenya is no exemption because aside from contributing towards socio economic growth, it also contributes greatly toward the country's GDP and creates employment opportunities and in addition it links sectors that require infrastructural services. The construction sector is considered to be the key sector driving the country towards the goal of being a competitive nation in the globe and enable prosperity of the country and have quality life by the year 2030 (Odhiambo & Kamau, 2013). Therefore the construction sector is important towards development of the country and its effects is felt both locally and regionally.

The construction industry is regulated by national construction authorities in different countries (Peprah, 2015). Regulation in general is considered to be orders and laws that are put in place by authorities to ensure that conduct is regulated (Obicci, 2015). In the construction industry, regulations are considered to be instruments that are out in place to ensure that the various policies in construction are adhered to. In almost all countries before any construction work is undertaken, approval from construction regulators is required. Some of these regulations needed are contractors registration, construction workers who are skilled, projects, supervisors of the construction site, training institutions and other provisions that relate with construction levies i.e. its collection and payment (GoK, 2012). In general, any country usually develops regulatory for supervision of construction with the main purpose being to harmonize the laws on construction that tend to contradict each other, and deal with physical planning that lacks control and is unchecked, controlling and enforcing building code application mechanism in construction

sector, preventing easy penetration and entry of developers who are not qualified, and improving on required bureaucracies as well as procedures in approving of construction plans. Furthermore, these authorities have curbed against cases of corruption in construction, have ensured that materials used are checked for quality and checks on proficiency of the contractor and ensure building codes are revised to make sure of their relevance (Obicci, 2015).

In Malaysia, all construction activities are regulated by the ministry of works through Construction Industry Development Board (CIDB) (2004) which was created in 1994. This statutory body (CIDB) was created with the sole purpose of developing capacity as well as capability of the country's construction industry by enhancing quality and productivity and this was to be achieved by insisting on professionalism, knowledge and innovation and all these was directed to better life's quality. CIDB statutory board was developed under the CIDB Act (520) with e sole duty of performing functions of construction sector and this is inclusive of initiation and maintenance of information systems used in the construction industry, push for construction methods and materials to be improved, provision of consultancy as well as advisory services and accredit and regulate constructors, siting construction employees and their supervisors.

CIDB in South Africa was developed in 2000 under the Construction Industry Development Board Act (38) of 2000. This board is mandated with the role of leading stakeholders of the construction industry and facilitating development as well as regulation of the construction sector in the country. The CIDB act required the board to ensure that all the constructors are registered. Registration of the constructors is categorized based on the constructors' ability and capacity to conduct a construction project. Any constructor that is interested in taking part in any public construction must be registered by CIDB. The objectives of the CIDB are expansive and aimed at both promoting the growth and development of the sector and provision of a regulatory framework within which the sector should operate.

In Kenya, building regulation is done by the National Construction Authority (NCA), and its main role is establishing and overseeing construction and coordinating sectors

development. NCA has been given the mandate of encouraging construction methods and materials to be standardized and improved, providing, promoting, reviewing and coordinating training of construction workers and site supervisors, accrediting and registering constructors and regulating any of their professional activities, accrediting and certifying construction workers and site supervisors, developing a code of conduct to be observed in the sector and punishing lack of adherence to the code (GoK, 2012). Aside from NCA, Kenya has other bodies that are involved in regulation of construction industry. The institution are National Housing Corporation (NHC), Kenya Urban Roads Authority (KURA), Kenya Rural Roads Authority (KERRA), and Kenya National Highways Authority (KENHA) (GoK, 2012). The institutions have been given the role of managing, developing, rehabilitating and maintaining public infrastructure which includes buildings and houses.

However, the level of compliance of the construction regulations is low. Sarkheyli, Sharifi, Rafiyan, Reza, & Murayama (2012) outlined factors such as income level of developers, awareness level, and economic (profit) motives as the most significant factors responsible for non-compliance. McCarthy (2012) argue that lacking public awareness or ignoring standards of development for residential determine compliance rate with standards of development. In China's construction industry, a lack of professionalism affected compliance with regulatory frameworks Deng. Wang, Zhang, Huang & Cui (2014) and in Malaysia; reports showed a lack of professionalism affected public construction projects (McCarthy, 2012). Bowen, Edwards and Cattell (2012) noted that an absence of sanctions in the construction industry affects compliance. This notion is supported by (Okeahalam, 2014) who note that weak sanctions enforcement mechanisms have affected compliance with regulatory frameworks and hampering Government objectives. Styhre (2011) argued that a lack of compliance in the construction industry is attributed to perceived inefficiency of regulatory frameworks.

Promulgation and maintenance of regulations is done mainly because of the expectation of achieving concrete policy objective for the purpose of increasing life's quality in the entire society; this can be achieved by improving environmental quality, human safety and health and protecting the customer (Okeahalam, 2014). For any constructor to operate or conduct

construction practices in Kenya, the law requires them to be registered through National Construction Authority (NCA), whose constitution is by the Kenya's law under the Act No. 41 (GoK, 2012). The NCA has published the National Construction Authority Regulations 2014, the Code of Conduct and Ethics for the Construction Industry, and the NCA Strategic Plan (2015-2020) to effectively regulate the construction industry in Kenya.

1.2 Statement of the Problem

Compliance refers to pursuing Government objectives through appropriate regulatory frameworks (Windapo & Oladapo 2012). It is difficult for construction developers to operate without encountering various regulations affecting every aspect of the sector. However, the time taken for evaluation of development application and subsequent approval is deemed to be too long discouraging developers from submitting applications for development permission and corruption of responsible officers to speed up the process. This has resulted to non-compliance or partial compliance of the set development control regulations. Many developers find the professional fee that is charged by professionals like Architects, Planners, Engineers and land Surveyors to be too high and therefore discourages them from engaging them and this creates a room for unprofessionalism to destroy the built environment (Windapo & Cattel, 2015). A great number of developers are unaware of construction regulations. A relatively high number of developers get to know of the existence of the development control regulations during the submission of the development proposals as majority of the members of the public are "illiterate "on physical planning programmes (Windapo & Oladapo 2012)

Non-compliance leads to informal construction which is risky to the public. If there are no clear rules, it becomes very difficult to even enforce basic standards. It is not possible to over emphasize the regulation of construction considering their responsibility in constructing structures to be used by millions of citizens. Those lives that are lost in Kenya because of buildings collapsing can be attributed to failures due to poor workmanship and construction, substandard materials, structural designs that are poor, lack of approvals from the government, lack of qualified supervisors or development enforcement officers and this

has forced the government to develop strengthened policies against constructors (Nyaanga, 2014).

Over the past years, NCA has suspended various construction projects due to lack of compliance to their regulations. During the last year alone the authority stopped works on 2,024 construction sites. The projects belonging to parastatals and senior politicians are among the 2,024 construction projects that were stopped for violating the law (Nyaanga, 2014). NCA suspended the projects for failure to observe a number of conditions including: Project compliance certificate, Protection gear for workers, Erection of safety signs on site, the fencing of the project site.

Empirical studies include; Windapo and Cattell (2015) studied compliance of building contractors' with national building regulations in Cape Town. Alnsour and Meaton (2011) reviewed the factors that affect the compliance with residential standards in the city of Old Salt, Jordan. Windapo and Oladapo (2012) reviewed the factors that determine the compliance of construction companies with health and safety regulations in South Africa. From the empirical literature, it is evident that there is minimal literature on construction developers' capacity with regard to compliance to National Construction Authority Regulations. The current study sought to investigate the determinants of private construction developers' capacity on compliance to National Construction Authority's regulations.

1.3 Purpose of the Study

The purpose of this study was to examine the influence of private construction developers' capacity on compliance to National Construction Authority's regulations in Nairobi County.

1.4 Objectives of the Study

This study sought to meet the following objectives.

i. To determine how private construction developers' financial capacity influence compliance to National Construction Authority regulations in Nairobi County.

ii. To assess the level at which private construction developers' technological capacity influence compliance to National Construction Authority regulations in Nairobi County.
iii. To examine the extent to which private construction developers' human capacity influence compliance to National Construction Authority regulations in Nairobi County.
iv. To establish how private construction developers' culture influence compliance to National Construction Authority regulations in Nairobi County.
v. To examine how private construction developers' combined capacity influence compliance to National Construction Authority regulations in Nairobi County.

1.5 Research Questions

The study sought after answering the following research questions:

i. How does private construction developers' financial capacity influence compliance to National Construction Authority regulations in Nairobi County?
ii. What level of influence does private construction developers' technological capacity have on compliance to National Construction Authority regulations in Nairobi County?
iii. To what extent does private construction developers' human capacity influence compliance to National Construction Authority regulations in Nairobi County?
iv. How does private construction developers' culture influence compliance to National Construction Authority regulations in Nairobi County?
v. How does private construction developers' combined capacity influence compliance to National Construction Authority regulations in Nairobi County?

1.6 Research Hypothesis

The study was guided by the following null hypotheses:

i. H_0: There is no significant relationship between private construction developers' financial capacity and compliance to National Construction Authority Regulations in Nairobi County.

ii. H_0: There is no significant relationship between private construction developers' technological capacity and compliance to National Construction Authority Regulations in Nairobi County.

iii. H_0: there is no significant relationship between private construction developers' human capacity and compliance to National Construction Authority Regulations in Nairobi County.

iv. H_0: there is no significant relationship between private construction developers' culture and compliance to National Construction Authority Regulations in Nairobi County.

v. H_0: there is no significant relationship between private construction developers' combined capacity and compliance to National Construction Authority Regulations in Nairobi County.

1.7 Significance of the Study

The findings of the study were hoped to be beneficial to private construction developers as it may provide the basis for various recommendations that may ultimately promote compliance to NCA regulations by these developers. It is hoped that the findings of this study will be important to the National Construction Authority as NCA may come up with strategies and policies to improve compliance of private construction developers. Researchers and academicians may use the findings of this study to enhance their understanding on determinants of private construction developers' capacity with regard to compliance to National Construction Authority Regulations. It may be used as a source of reference for future studies.

1.8 Delimitation of the Study

This study was restricted to four variables only, namely: financial capacity, technological capacity, human capacity and culture. Additionally, the study focused on construction developers' located in Nairobi County, although the problem of compliance is also occurring in other parts of the country. Setting these boundaries ensured that the study was not extend beyond the intended scope.

1.9 Limitations of the Study

The study expected that some of the respondents to be hesitant in giving some information for the fear that it might be used against them. To support the researcher's point that the information they gave was for academic purpose, an introductory letter was obtained from the learning institution and assured respondents of confidentiality of information they provide.

1.10 Basic Assumptions of the Study

The study assumed that financial capacity, technological capacity, human capacity and culture have an influence on compliance to National Construction Authority regulations. The study also assumed that the respondents gave true and honest information and that they were available to cooperate and diligently fill out the questionnaires. In addition, the study assumed that the ethical considerations were adhered to and that the study findings were reliable. The study sample represented the population being investigated and that the data collection is accurate.

1.11 Definition of Significant Terms

Compliance to NCA regulations: Conformance to the regulations set by the Government of Kenya though the NCA Act 2011.

Construction developers: These are individuals purchasing land either creating or renovating property and risk their resources and capital with the hope of getting rewards from their investments.

Construction Industry This is an industry concerning construction works. In this study, construction works entailed construction of private residential and commercial buildings.

Culture: Social norms and behaviors found in human societies.

Financial capacity: The capability of a private construction developer to manage and adequately distribute his finances to his construction works.

Human capacity: The capability of a private construction developer to adequately have access and utilize competent professionals in the construction industry.

Technological capacity: The capability of a private construction developer to adequately understand, access and utilize technological developments and innovations with regard to construction.

1.12 Organization of the study

The study is organized in five chapters. Chapter one covers introduction to the study which includes the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, delimitations of the study, limitations of the study, basic assumptions of the study, definition of significant terms and organization of the study. Chapter two is the literature review which includes; review literature on Compliance to National Construction Authority Regulations, as well as the themes developed from the study objectives which include financial capacity and compliance to National Construction Authority Regulations, technological capacity and compliance to National Construction Authority Regulations, human capacity and compliance to National Construction Authority Regulations, culture and compliance to National Construction Authority Regulations. Chapter two also covers theoretical framework, conceptual framework and summary of literature. Chapter three is the research methodology, it covers, the research design, target population, sample size and sampling procedure, data collection instruments, data collection procedure, data analysis techniques, operationalization of variables and ethical considerations. Chapter four covers data collection analysis, presentation and interpretation of results and key summary tables. Chapter five focuses the summary of the research findings, discussions, conclusions, recommendations and areas for further research. References and appendices follow after chapter 5 which have been exhaustively covered.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature related to private construction developers' capacity and compliance to National Construction Authority Regulations. The chapter reviewed literature on financial capacity, technological capacity, human capacity, culture, theoretical framework, conceptual framework and summary of literature.

2.2 Compliance to National Construction Authority Regulations

The State is a potential resource or threat to every industry in the society, the construction industry being no exception (Spence, 2014). As a regulator, the state establishes technical standards and social norms, permits construction activities and establishes liabilities (Meacham, Bowen, Traw & Moore, 2015). Ang, Groosman and Scholten (2015) observed that state regulations are the outcome of technical, legal and scientific efforts, strongly influenced by political, governmental and social forces, and evaluated against the consequences of the construction process, the construction cost and the costs-in-use.

Compliance is tested in terms of the principal goal of any building regulation, which is to establish a baseline standard with respect to a particular aspect of design or construction (Konisky, 2007). However, Enforcers frequently face extreme difficulties in detecting errant behaviour when the regulated community is extensive and where breaching rules is cheap and easily carried out in a clandestine manner (Konisky, 2007). Resourcing realities often mean that enforcers have to rely on tip-offs from the public or hotlines and whistleblowing processes (Oded, 2013).

According to Mrope, Namusonge, Iravo (2017) compliance is critical to the achievement of the objectives and its attendant regulations such as transparency, competition, and value for money, accountability and the efficient use of resources. Compliance occurs when the target performs a requested action, but is apathetic about it, rather than enthusiastic, and puts in only a minimal or average effort. However, as an organizational outcome, compliance has traditionally been understood as conformity or obedience to regulations and legislation (Zadawa, 2015). The three pillars of institutions as regulatory, normative

and cultural cognitive. The regulatory pillar emphasizes the use of rules, laws and sanctions as enforcement mechanism, with expedience as basis for compliance (Zadawa, 2015).

Legal aspects are an indispensable part in the construction industry. Legal aspects ensure that projects are functioning as per the statutory framework. Every construction project must take into account the legal set up while framing the basic aims and objectives of the project (Arjoon, 2017). Rakodi (2014) asserted that even though there are other actors whose role is required towards a successful compliance with construction standards such as public awareness, commitment and personnel training, but the most important factor that ensures compliance with standards is good governance. This will ensure an effective and efficient urban development control and management.

In Hong Kong the 1997 Construction Ordinance provided for the establishment of a Contractors Registration Committee. Among its main functions, the committee was to examine the qualifications of applicants and, if it considers it necessary, inquires whether an applicant has the relevant experience (Lo *et al.*, 2012). In European construction regulations Visscher and Meijer (2007), indicated that a final inspection certificate or certificate of occupancy is required prior to occupation in most countries to declare that the structure has been built in accordance with the regulations. Baiche, Walliman and Ogden (2006) indicated that compliance with the mandatory clauses of the New Zealand Construction Code is tested through a performance-based process. However, an alternative route to proving compliance with the mandatory clauses is provided, through the 'verification method' (calculations or test methods) and the 'acceptable solution' (cookbook method), which two additional tiers are collectively called the 'Approved Documents'.

Ang, Groosman and Scholten (2015) report that users continue to complain about the difficulty of determining the applicable regulation in a given situation. They note that regulatory information remains a problem in the Netherlands as a result of the complexity of performance-based regulations and the lack of time available for practitioners to study and internalize them. Petersen (2010) describes a similar situation in the UK. In his review of the UK construction regulations he notes that, although the interpretation and

application are guided by an ‘approved document’, building inspectors view it as very limited and woolly.

In South Africa, Smallwood & Haupt (2005) stated that the Construction Regulations 2003 was introduced in the construction industry due to continuing poor construction records. Naoum (2007) further elaborate that the Construction Regulations was produced with the intention to have a set of legislations specifically directed at and applicable to the construction industry. The Construction Regulations 2003 acknowledges every individual including clients, designers and quantity surveyors of their responsibilities with regard to Occupational Health and Safety in the construction Industry. Clients are required to –inter alia-provide the principal contractor with the Health and Safety specification and ensure that the principal contractor have made adequate allowance for Health and Safety. Designers are required to –inter alia –provide the client with all relevant information about the design, which will affect the pricing of the works, inform the contractor of any known or anticipated dangers or hazards, provide the contractor with a geo-science technical report, and the methods and sequence of construction, and modify design where dangerous procedures would be necessary, or substitute hazardous materials (Smallwood & Haupt, 2007).

In Kenya, the National Construction Authority (NCA) regulations allow a contractor to register in one or more categories according to class of construction works to be undertaken. The NCA is mandated to clear Kenya builders and contractors as a way of eliminating rogue contractors and malpractices in building and construction. It is also mandated to promote and ensure quality assurance, initiate and maintain an information system in the construction industry. Statutory roles include providing, promoting, reviewing and coordinating construction industry training and accrediting skilled construction workers. The authority, which has recently started inspecting construction and building projects around the country to ensure high quality of work and close projects posing health risks and collapse hazards, is expected to provide the regulatory framework for registration and renewal of contractors (GoK, 2012).

2.3 Financial Capacity and Compliance to National Construction Authority Regulations

According to Kihara (2012) developers' financial capacity refers to the resources that are required to ensure that activities in construction site are implemented successfully and work progresses smoothly. It's inclusive of cash at hand, overdraft, bank credit, credit purchase and invoiced and work-in-progress amount. Financial capacity can be inclusive of resources that are required for greasing of everyday construction business. Bank loans are the main source for developers (Han, 2008). Developers seek finance from financial systems and markets that comprise of institutions that facilitate financial intermediation between different economic units in the society. However, not all developers qualify to access funds from the financial market and banks. Financial markets finance only projects that are viable and with rates of returns well above the cost of funds (Harris & McCaffer, 2013).

In Kenya, financing options are limited and therefore developers are characterized by rigid financial conditions and interest rates that are relatively high. The main challenge that developers face is sourcing of funds for development investment. The main reasons for this challenge are because most of the financial institutions have imposed strengthened policies and there is lack of stability in the economy. Another contributing factor is that funding is negatively affected by the structure of interest rates. The interest rate that is charged on funds for construction development is high because of the fact that these projects are long term (Flaman & Gallagher 2012).

In Zambia, a study by Kaliba, Muya & Mumba (2009) found out that poor management of finances by developers and lack of adequate and consistent funds release by clients are the main factors affecting compliance. The factors that influence construction quality implementation and compliance to construction rules at the execution phase in Indian construction industry include financial limitation (Ashokkumar, 2014).

In Kenyan Financial sector, any construction lending requires that the borrower issues collateral in terms of title deed to be charged to the lending institutions, whose value as at the time of issuing the facility should be greater than that of the loan advanced at that time,

without regard to the value appreciation over time (Ndung'u, 2011). Furthermore, Kenyan financing institutions are considered to be very conservative when conducting appraisals for loan application and in other cases the use of credit guarantee by directors is questioned (Kituuka, 2012). Another challenge is caused by procedures such as the ones for loan appraisals which take long periods of time usually months instead of weeks; and with developers being continuously asked to provide additional documents keep them a bay. In addition the close relationship that exists between the key players in the economy and large companies create the idea that there are some few individuals that funds go to.

In Kenya developers struggle to meet financial costs which most of the time is characterized by high rates on interest which is as a result of tightened monetary policies to deal with weakening shilling and increased rates of inflation. Capital in real estate is needed for: land acquisition, development, funding soft costs and in-site infrastructure. One of the key challenges in real estate development is limited financial accessibility which is characterized by few sources of funds whereas the existing lending institutions have not been in a position to reach majority of middle income earners. The stringent qualifications demands for mortgage has impacted in low developments hence low housing supply against the demand. Availability of capital is an important consideration for any investor to avoid delays and incomplete projects usually witnessed when projects have already started. Lack of capital is a challenge that the real estate investors faces; this is because most of the individuals are not willing to put their funds in such businesses. Because of this situation, the fund present in the sector is limited and therefore cannot facilitate growth (Danny, 2012).

2.4 Technological Capacity and Compliance to National Construction Authority Regulations

Technology is very important in any construction because it significantly influences its performance; therefore those companies that are not at par with technology will not be able to compete with technologically advanced ones. Those firms that lack technological advancement especially the small construction companies that lack the financial abilities of

purchasing equipment for facilitating completion of some projects won't be able to undertake some technologies (Malik, 2012).

There are some objectives and constraints for each construction projects and this includes time set for project completion. Despite the fact that the technology, arrangements of institution and processes for projects might be different, there is a close resemblance in their management like in projects revolving around the development of aerospace, energy and pharmaceutical. Knowledge regarding modern management and comprehension of the process of construction and design is very important in managing construction projects (Chai & Yusuf, 2013). Availability of better information regarding operations is beneficial to developers because it lowers the cost of labor, reduces waste, lower the cost of inventory and allow for better utilization of resources. This is possible due to information communication technology which helps to provide information that is relevant, complete and accurate. This helps to improve efficiency of organization and controlling of costs of products (Fortune & White, 2014).

ICT supports decision making in an organization. Therefore, it can be adopted to be used by Project Managers and engineers in software for estimations (Adriaanse & Voordijk, 2014). Construction developers' communication involves exchanging information, other deals revolving around drawings, cost data, specifications, programmes and other management and design information. Therefore, ICT is essential in enhancing communication by the developers to the intended users (Emmit & Gorse, 2003).

Construction technology that is appropriate is evaluated based on locally available resources including plant and machinery, skilled labour resources, availability of local material resources and the extent to which locally available resources are put to use. Inadequate technological capacity and lack of management manpower constrain the development of the construction sector (Oladapo & Olotuah, 2007). Similar observations reported by Oladapo and Olotuah (2007) are reported in Kenya. Based on a report by NCA (2014), the industry is inadequately equipped with construction equipment, especially road construction equipment such as bulldozers and graders. The report also documented that other equipment such as concrete mixers, cranes, vibrators and concrete pumps are

similarly in shortage. This has potential limitation on the scale of growth of construction organizations in Kenya.

One of the crucial strategies for the development of competitive advantage in a company is through technology capabilities because they are unique and it's not easy one copied by other companies (Baerz, Abbasnejad, Rostamy & Azar, 2010). Technology is considered very powerful source of innovation which can help construction companies to develop new technology which can guide in transforming and complementing already existing technologies ensuring that performance levels are improved and are sustainable (Kumaraswamy, 2013). The transfer of technology is considered to be knowledge and technology movement from one company or individual to another through a channel (Malik, 2012). Ganesan & Kelsey (2013) explained that a company can ensure there is consistent success if activities of transferring technology are clearly understood and managed. Despite the fact that diffusion of innovative technologies in the market is complicated and not easy, there is variation in success levels and there could be lack of balance in the effects of the diffused innovation. Yet, many technological opportunities remain under-utilized and the diffusion of innovative technologies appears to be quite slow. It has been recommended for local and foreign constructors to have joint ventures because this will facilitate the diffusion of construction technology.

Simkoko (2012) explained that the transfer of technology in industrial projects is different from the ones in construction; nonetheless the realization phases in both sectors are similar. The similarity is clearly observed in the industry's life cycle and it's observed that construction projects follow construction project grouping phases: conceptualization (it is conception, feasibility researches and inception); implementation (it's to design engineer and construct); and operation or utilization. During the process of construction delivery, provision of capacities as well as capabilities is provided in line with the construction methods used in executing the project while the know- how, managerial skills and experience are the required inputs for the various construction methods. Therefore the transfer of technological capabilities in developing countries can be facilitated by integration of local as well as foreign managerial and technological capabilities.

The National Construction Authority in Kenya has digitized its services. The application process is now done online through the NCA. Developers can do their registration and also the accreditation is made online. However, many developers are still using the manual system of registration hence poor absorption rate of the new technology. Some developers argue poor network systems in some of the regions they operate are one of the reasons of not sing the new technology. However Rahman (2013) noted that most developers are not conversant with the online system.

2.5 Human Capacity and Compliance to National Construction Authority Regulations

Workmanship will determine the timely, quality and cost of products delivered in the construction industry. Effectiveness and efficiency can be determined by quality of workmen and their quality depends on their skills, personal ability and experience. The occupational skill or different workmen trade depends on their profession or training (Adebayo, 2015). The most important element in production is workforce because it's the only factor responsible for the creation of value and sets overall productivity levels (Ogunsemi, 2012). Labor could be explained to comprise of main contractor, sub-contractors and all the employees below them who are responsible for undertaking all site activities. Workers performing all forms of activities that require no training, main craftsmen and different apprentices under qualified tradesman form the laborers. Substandard building construction is influenced by competence levels and qualification of constructors.

Rojas & Aramvareekul (2013) reviewed factors affecting labor productivity in construction industry in United State of America. The finding revealed that systems and strategies of management and issues of manpower were the most significant factors affecting productivity of labor. Based on Rojas & Aramvareekul (2013) research it can be said in developing countries, labor productivity greatly differs from that of developed countries. In developed countries, the ranking of management factors is high but in developing countries factors ranked high in their effects on productivity of labor is lack of training/skills. Schwarzkopf (2014) carried out a study in USA on factors, such as motivation, rework and

work performance, that affect productivity. The researcher emphasized on the importance of productivity of labour in construction since its labour units of accomplished work for each unit of labour. It is important to measure productivity in construction since it ensures accuracy in determining the quality of work performed and labour cost per hour. If the level of productivity is high, then it suggests that there is a greater output for similar levels of input.

Every time a new project is started new terms should be developed because of the dynamic nature of the environment and the demands that keep on changing (Olatunji, 2010). It is a common phenomenon in big construction companies whose focus is management of phases and processes of construction with a few employed managers and professional employees who will be responsible for outsourcing of teams. In construction industry, outside sources of employees is common (Chai &Yusuf, 2013). Through the increased use of external sources of labour managing contractors have been able to pass on risks allowing the achievement of greater flexibility, also, it has complicated employee development and project co-ordination, and therefore calls for the need of more skilled and experienced management (Chai &Yusuf, 2013).

Nyaanga (2014) carried out a research study which revealed that majority of the contractors lack professional qualification in the fields of engineering and building and construction. Therefore, any projects that are undertaken by these contractors lack professionalism. The main role of registering contractors is to ensure that only qualified individuals are issued with licenses to undertake any construction project. It doesn't stop at their registration but there is also regulation whereby the registered constructors are regulated to make sure that at all the time they adhere to the construction professionalism. Regulatory authorities make sure that each registered contractor adhered to the code of conduct at all times. By doing so, all construction processes are followed and therefore quality, efficiency and competency are met. In Kenya construction sector plays a key role towards socioeconomic development and this led towards the formulation of NCA Act 2011 and the development of NCA that is mandated to oversee the sector and coordinate its development. In addition it encourages industry development through training and capacity

building of constructors and construction workers, registering contractors and regulating them to ensure the performance of the construction sector is improved.

The construction sectors distinguished by the informal nature of the way hiring is conducted at lower levels, and the hiring of staff who are more loyal to their boss than the organization (Serpell & Rodriguez, 2002). This practice is counterproductive to construction organizations. In Kenya, recruitment is typically characterized by casual labour force. Nahir & Mohan (2017) argued that for a construction organization seeking to achieve sustainable growth in the new business environment, workforce diversity should be embraced. They however caution that conflict can also result from diverse workforce due to cultural differences. To overcome this, they recommend structural flexibility and innovative organization structures that are responsive to emerging environmental demands. Such a structure should allow for functional freedom to its divisions to match the cultural context in which the organization operates.

According to Kenya's National Construction Authority Regulations of 2014, in any construction that is in a form of joint adventure, it is mandatory that employees to be recruited must be local and in cases where a professional skill is required and is not available locally then NCA approval is required. Despite the fact that NCA is given the power to provide some exemptions in the regulations, the power tends to be discretionary since the criteria to be followed in providing the exemptions is not provided in the regulations. It is possible for NCA to register joint adventure with a foreigner when they enter with a local company. The regulations also clearly indicate that in a case of joint adventure all the employees must be sourced locally. In cases where there is need for foreign sourcing of professional skills, then NCA must approve and this is only if the skill is not available locally. One important thing to note is that NCA can exempt constructors from this provision.

2.6 Culture and Compliance to National Construction Authority Regulations

Culture is considered to be an unconscious force that is very powerful and tacit and it is responsible for individual and group's behavior, their perception towards things, their pattern of thoughts and values (Schein, 2004). Orgen (2010) conducted an investigation in

Ghana that pertains the use of building plans and revealed that less than 10% of constructors used approved construction plans and therefore majority, more than 90% of the constructors flaunted the required standards for physical planning. Because of this trend, Elnaz, Ayyoob, Mojtaba, Mohammad & Akito (2012) was determined to establish the reasons why developers failed to comply with the recommended floor area ratio (FAR) in Tehran Municipality, Iran. The findings showed that the main reason why contractors failed to meet the construction requirements was because they were not aware of the standards that are required. Sarkheyli, Sharifi, Rafiyan, Reza, & Murayama (2012) in their study, examined factors affecting the compliance or reasons for noncompliance to building/housing standards using floor area ratio as a yardstick for measuring compliance in Tehran. The study outlined factors such as income level of developers, awareness level, economic (profit) motives, and compared their significant level with compliance with building standards.

Sarkheyli, Sharifi, Rafiyan, Reza, & Murayama (2012) observed that the main reason why developers' constantly compromise the quality of design in Iran is for the purpose of achieving more profit in a short period of time. Because of the little financial impact they incur, developers are always willing to pay fines for violating rules and building codes (Pahl-Weber, Seelig, Ohlenburg, & Bergmann 2013). In Kuwait, the main factors that contribute to non-compliance in building sector is social and technical factors and administrative systems and the effect is construction of unauthorized buildings, conversion of buildings illegally, substandard buildings especially among low and middle households (Al-Fahad, 2012). According to Padeiro (2016) likelihood of deviations from the construction plans tend to increase when the time from plan approval increases.

Developers have indicated that the main reason why they decide to undertake projects without being approved is because of the challenges in adhering to the requirements. Their main complaint is with the time and cost incurred before approval of plans, a developer is required to follow with application of paper chase from an office to the next and in the process corruption makes the process even more costly. As a result there are numerous cases of regulation disregard and this leads to emergence of unplanned settlement, misappropriation of road reserves, service and infrastructure strain (Padeiro, 2016).

According to Draft Physical Planning Bill 2015 and the Urban Areas and Cities Act 2011, developers are mandated to submit their proposals for to be approved by planning authorities. In some cases, the development applications processing have been said to take long periods of time (more than the thirty days as provided by the Physical Planning Bill 2015) therefore causing delays in many areas of development. This has forced many developers to proceed with their projects disregarding submitted proposals for development.

Developer's level of awareness is very important; this because it contributes to some extent to the level in which individuals are complying with standards and regulations. A greater percentage of developers are not aware of the development standards/regulations. This results to non-compliance of the set development control regulations negatively affecting policies as well as the process of implementing development plans. Lack of awareness to these planning regulations can be attributed partially to lack of policy guidelines like current plans for development, planning standards and comprehensive zoning plans.

The approval of land subdivision is lengthy and complicated because of the many statutes controlling and regulating the process. Majority of the Kenya population cannot afford the cost of transferring, documentation, stamp duty, and processing fee. The proposed building plans must undergo the approval process by the local authority. This forces developer to start construction without certification (Owiri, 2011)

Investments are subject to taxation as opposed to some investments that have tax exemptions. In Kenya construction is affected by various taxes and these includes: Income tax on profits, value added tax on construction and management costs, stamp duties on transfer or lease transaction and land rates. For those developers who are liable to high income rates might consider carefully the options that can help them reduce the burden on income tax. Developers will tend to avoid the highly taxed investments or properties (Murigu, 2005).

2.7 Theoretical Framework

Kombo and Tromp (2006) assert that theoretical framework is a collection and discussion of connected theories and principles advanced to forecast an observable fact. This study was grounded on System theory, institutional theory and Legitimacy theory in an attempt to explain private construction developers' capacity and compliance to National Construction Authority Regulations in Nairobi County.

2.7.1 System Theory

This theory was developed in the 1940's by von Bertalanffy (1948) and later in 1956 it was advanced by Ashby, (1964). This theory insists that a real system can interact with and is open to the environment which allows it to acquire new properties quantitatively which leads to continuous evaluation. Instead of system theory focusing on reduction of entry of properties to its elements or parts, its focus is on arranging of and relations between the pat that forms the connection between it as a whole. The arrangement result in a system that is free of elements concrete substance. Therefore, similar principles and concepts of organization are used in various disciplines and provide a foundation for their unification. There are a number of concepts for systems and they include: system-environment boundary, goal-directedness, input, process, output, hierarchy, state, and information.

Systems can be considered to be either open or closed. In an open system, there is exchange of information, resources and energy with the environment but in a closed system that's not the case. Because in reality a system cannot be completely open or closed they are referred to as relatively open or relatively closed. The extent to which a system is sensitive to the environment is used to determine whether it is open or closed. If a system is not sensitive to changes in the environment then it is considered to be a closed system but an open system is one which reacts to changes in the environment (Pfeffer & Salancik, 1978). Nonetheless, the systems theory has its shortfalls. One of the shortfalls relates with measures and the second relates with whether the ways of organizational survival matters. Robbins, (1990) criticized this approach by indicating that the focus is on ways through which effectiveness can be attained and not on ways of attaining organizational effectiveness. Obtaining the measures or means or processes of a company can be hard as

compared to ways of determining measures of specific end goal of an approach use in attaining the goal.

In organization capacity, system theory creates a link between the various levels in an organization on how optimum resource utilization can be best achieved. The systems theory helps to understand the synergies that are required in the sector from all stakeholders particularly how the various institutions and players in the sector ought to move together as a system in order to deliver efficiency. The theory also explains the institutional relationships that must be maintained within the sector, intra and interrelationships. Intra relationships can be viewed in the lenses of this theory as the relationships among the many institutions as a network in the sector while inter relationships can be viewed as the internal institutional arrangements within each institution which plays a role in the sector. This theory explained the influence of human capacity of private construction developers' on compliance to National Construction Authority regulations.

2.7.2 Institutional Theory

This theory was developed in 1977 by Meyer and Rowan's. This theory argues that emergence of formal structures in an organization is as a result of adherence to norms and believes in an institution which is usually influenced by the environment in which the organization is operating in. With institutions adoption of these beliefs, they tend to be coded into rules and practices that forms the formal structure of an institution. Nonetheless, because the rules have emerged due to organizational pressure and the need for them to be seen as legit, which is very important in the process of acquiring resources, the environment in which the organization is operating in might not be efficient or perform best practices despite them being a necessity for acquisition of resource and survival. As the institution tries to avoid any conflict that may arise as a result of mythologized rules in the organization and the practices instituted by the organization for the purpose of meeting the actual needs of the institution, they have ended up in part of the organization being decoupled.

This theory has been criticized greatly by the fact that it does not elaborate on organizational adaptation. An example is a study that was conducted by Kraatz and Zajac (1996) regarding adoption of professional programs among liberal arts schools and indicated that new institutional hypothesis failed to work in most cases and in some cases the outcome was opposite from what the theory speculated. Another challenge of this theory is that it assumes institutional adaptation and neglect of institutional competition. Hannan and Freeman (1977) argued that it is not easy and that it is costly to adapt which suggests that selection is of great relevance than adaption is. Another shortcoming of this theory is the fact that it ignores agency. In general, this theory doesn't include dynamics of individuals and other choices not necessarily from the structure of the organization.

The key concepts of this theory provide guidelines on value to be applied in analyzing the associations in organizational environment emphasizing on expectations of the society, rules and norms, and values as sources of institutional pressure. The foundational basis of this theory is the idea of legitimacy and not influence or efficiency as the key goal of the institution. Institutional theory supports the notion that compliance is affected by resistance from different players with varying ambitions and means of accomplishing tasks. This theory explained the influence of financial and technological capacity of private construction developers' on compliance to National Construction Authority regulations (Porter & Kramer, 2007).

2.7.3 Legitimacy Theory

This theory was developed from the idea of legitimacy in an organization by Pfeffer & Salancik (1978) and is considered to be a condition or status existing when entities value system is congruent with that of the larger social system. In an instance where there exists a potential or actual disparity between two value systems then it threatens the legitimacy of the entity. This theory indicates that a company tries its best to make sure that its operations adhere to the boundaries and norms that exist in the society. When a company adopts the legitimacy theory then it will report voluntarily on its activities if they perceive

that the society expected that from them (Deegan & Rankin, 2000; Cormier & Gordon 2001).

According to the legitimacy theory, a company is mandated to inform all the stakeholders of the activities it is getting involved in, especially the public and inform the society how they will benefit. In a case where the value system of an organization is in line with that of the society in which it is operating in then a state of contention is said to be achieved (Lindblom 2013). According to Suchman (2015), the perception that an organization adheres to the system of behaviors that is set in the society its operating in is considered to be legitimacy. The legitimacy idea suggests that the contract that is in existence between the government and the public can be discarded.

In line with construction some of the problems that exist include non-compliance with laws and could end up affecting the legitimacy of the practice. Based on the legitimacy theory, the choice of government officials to legitimize strategy implementation focuses on the interpretation of local authority or involved department and various government officials have a greater likelihood of having varied ideas of what to expect of them from the public and whether the agency or department or local authority is considered by the society as compliance of what is expected of them (Deegan, Rankin & Tobin, 2012). This theory indicates that the disclosure practice is made by the officials as a strategy of building good reputation among the entire society and stakeholders.

The theory notes that the construction developers have an obligation to the society and therefore have to state their operations. The organization should support the legitimacy steps the organization has to undertake. This theory supports the influence of culture of private construction developers' on compliance to National Construction Authority regulations.

2.8 Conceptual Framework

The representation of variables in a diagrammatic form showing the relationship between the different variables is defined as a conceptual framework (Miles, Huberman, & Saldana, 2014).

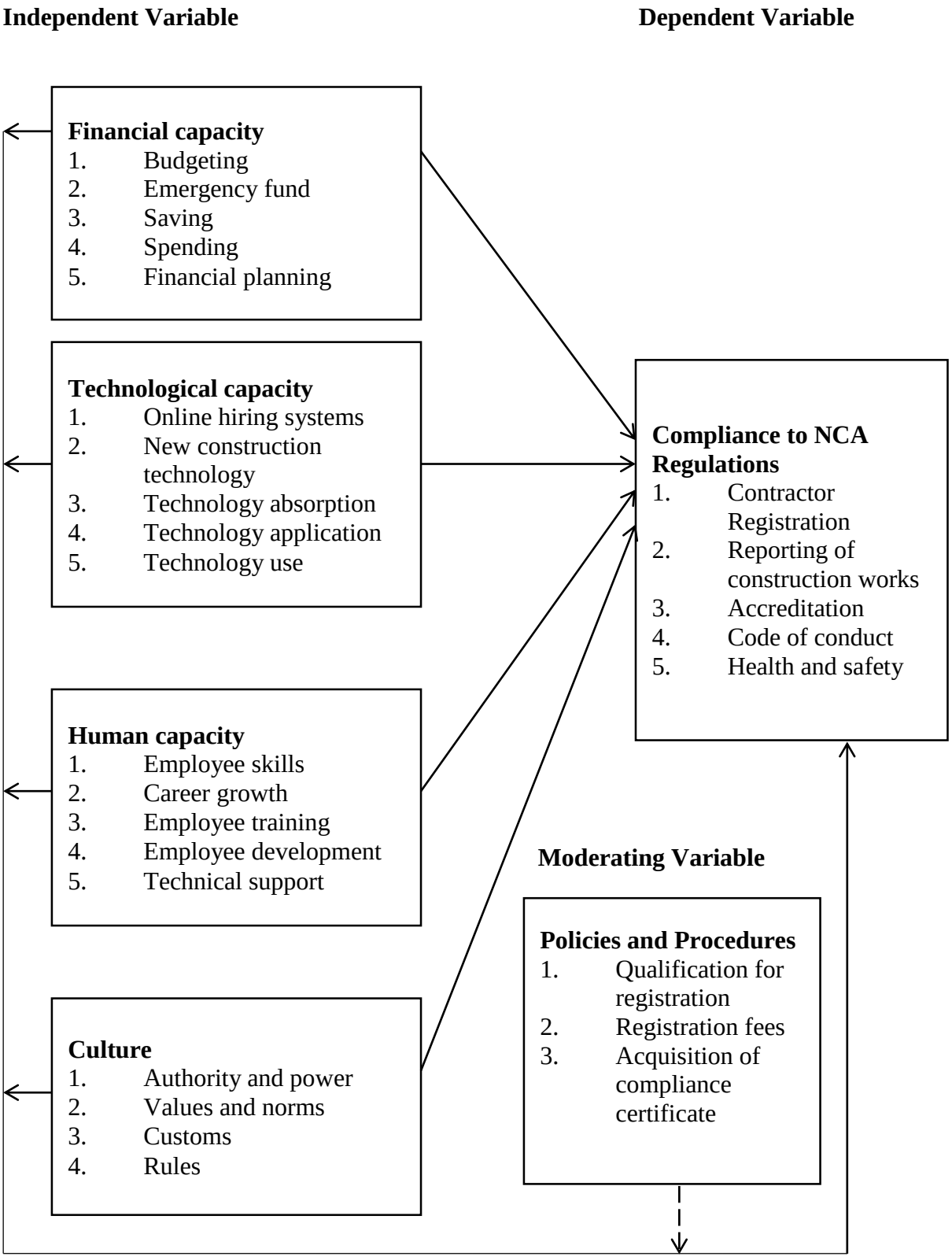

Figure 1: Conceptual Framework

Figure 1 shows that financial capacity, technological capacity, human capacity and culture of private construction developers influence compliance of National Construction Authority regulations and is moderated by policies and procedures.

2.9 Knowledge Gap

Table 2.1: Knowledge Gap

Variable	Author (year)	Title of the study	Findings	Knowledge gaps	Focus of the study
Human capacity	Rojas & Aramvareekul (2013)	Factors affecting labor productivity in construction industry in United State of America.	Systems and strategies of management and issues of manpower were the most significant factors affecting productivity of labor.	This study focus was on construction industry in USA. The current study focus is on determinants of private construction developers' capacity on compliance to National Construction Authority's regulations	This study will examine the extent to which private construction developers' human capacity influence compliance to NCA regulations
Financial capacity	Kaliba, Muya & Mumba (2009)	Cost Escalation and Schedule in Road Construction Projects in Zambia	Management of finances by developers and lack of adequate and consistent funds release by clients are the main factors affecting compliance.	This study focus was on Road Construction Projects in Zambia. The current study focus is on determinants of private construction developers' capacity on compliance to National Construction Authority's regulations	This study will determine how private construction developers' financial capacity influence compliance to NCA regulations

Variable	Author (year)	Title of the study	Findings	Knowledge gaps	Focus of the study
Human capacity	Nyaanga (2014)	The effect of competence of contractors on the construction of substandard buildings in Kenya.	The study revealed that majority of the contractors lack professional qualification in the fields of engineering and building and construction.	This study focus as on competence of contractors on the construction of substandard buildings in Kenya. The current study focus is on determinants of private construction developers' capacity on compliance to National Construction Authority's regulations	This study will examine the extent to which private construction developers' human capacity influence compliance to NCA regulations
Culture	Orgen (2010)	Building plans Ghana	less than 10% of constructors used approved construction plans and therefore majority, more than 90% of the constructors flaunted the required standards for physical planning	This study focused on building plans Ghana. The current study focus is on determinants of private construction developers' capacity on compliance to National Construction Authority's regulations	This study will establish how private construction developers' culture influence compliance to NCA regulations
Culture	Sarkheyli, Sharifi, Rafiyan, Reza, & Murayama (2012)	Factors affecting the compliance or reasons for noncompliance to building/housing standards using	The study outlined factors such as income level of developers, awareness	This study focused on reasons for noncompliance to building/housing standards using	This study will establish how private construction developers' culture

Variable	Author (year)	Title of the study	Findings	Knowledge gaps	Focus of the study
		floor area ratio as a yardstick for measuring compliance in Tehran	level, economic (profit) motives, and compared their significant level with compliance with building standards	floor area ratio. The current study focus is on determinants of private construction developers' capacity on compliance to National Construction Authority's regulations	influence compliance to NCA regulations

2.10 Summary of Literature Review

The study has reviewed theories that help in explaining determinants of private construction developers' capacity on compliance to National Construction Authority Regulations. They include systems theory, institutional theory and legitimacy theory. Financial capacity is important for all construction developers. The developers should be able to utilize the available funds to ensure full implementation of the projects. Ability of absorbing, using, adapting, generating, developing, transferring and diffusing of technology that is represented by various resources skills and learning mechanisms is referred to as technological capacity. This is an important factor for the success of construction developers. Human capacity is the knowledge and skills that the construction workers should have. That is why the government focuses on accrediting skilled construction workers. Culture guides an individual's thinking process. However, most developers have the culture of ignorance, laziness and deliberate non-compliance. Developers should have a culture that supports professionalism by adhering to the construction rules and regulations. The NCA is mandated to streamline the construction sector by ensuring that all construction activities are conducted according to the NCA regulations thus getting rid of the ills thereof.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, the study presents the methodology to be adopted in the study. The chapter covers the research design, target population, sample and sampling procedure, data collection instruments, pilot testing of the instrument, validity and reliability of the research instrument, data collection procedures, data analysis techniques, operationalization of the variables and ethical considerations.

3.2 Research Design

This study answered the research problem by using the descriptive research design. The design is suitable because it can answer questions such as "what" or "How". Mugenda & Mugenda (2003) argue that descriptive research design is suitable because it includes a means of gathering and analyzing data for the purpose of responding to the research questions. According to Robson (2012), a descriptive research design aims at revealing the accurate phenomenon of an event or situation. The study considered this type of research design suitable because it enables the researcher to carry out an in-depth observation of the phenomenon being studied. In addition, it provides with accuracy descriptive analysis of the population characteristics. (Wambugu, Ndunge, Mbii & Nyonje, 2015) The method was therefore suitable in investigating influence of private construction developers' capacity on compliance to National Construction Authority Regulations.

3.3 Target Population

The study focused on private construction developers in Nairobi County. The study focused on Nairobi County because it is would be difficult to cover all private construction developers in Kenya due to financial constraints and limited period to conduct the study. The unit of observation was private construction developers in Nairobi County, Kenya. According to the NCA of Kenya, there are 3,641 private construction developers in Nairobi County. They formed the target population of the study. The private construction

developers were targeted because it is believed that they have required information on the influence of their capacity on compliance to National Construction Authority.

3.4 Sample Size and Sampling Procedure

Sampling is concerned with the collection of a subsection of personalities from within a statistical populace to gauge characteristics of the whole population (Kothari, 2014).

3.4.1 Sample Size

A subset of a population that is selected to form a representation of the entire population is defined as a sample. The main concept of sampling is that through selection of a small group of elements, conclusions can be made for the entire population from which the sample is drawn from. In this study, the sample size was computed using the Yamane formula. The formula is;

$N = N / [1+N (e)^{2}]$

Where n = sample size,

N = population size

e = error term (0.05)

Hence, n = 3641/ [1 + 3641(.05)2]

n = 360

Using the formula, the sample size was 360 respondents. This formed a representation of the entire population

3.4.2 Sampling Procedure

The study made use of systematic sampling technique in selecting the sample for this study. In this technique sample members from a larger population are selected according to a random starting point but with a fixed, periodic interval (Kothari, 2014). This technique is therefore free of bias. A list of private construction developers in Nairobi County was retrieved from National Construction Authority records. This list was used to form a sampling frame and from the list the nth number method was used to pick the developer based on systematic sampling technique until sample size of 360 is reached. From the list,

their telephone and physical contacts were established and used during data collection. The National Construction Authority also formed the study sample.

3.5 Data Collection Instruments

The study used primary data gathered by the use of semi-structured questionnaires. The semi-structured questionnaire comprised of open-ended questions, closed ended questions and 1 to 5 point Likert scale questions. Closed end question and Likert scale question allow the researcher to gather quantitative data. The Likert-type format was selected because this format yields equal-interval data, a fact that allows for the use of more powerful statistics to test research variables (Kiess & Bloomquist, 2009). Questions that are open ended allow the researcher to gather qualitative information. Development of the questionnaire was done to respond to the research questions; it comprised of five parts. Demographic information was covered in the first section, the second section covered questions on financial capacity, third sections covered technological capacity, fourth section covered human capacity, fifth section covered culture and the sixth section covered compliance to National Construction Authority regulations.

3.5.1 Pilot Testing

A pilot test was conducted to determine how accurate and appropriate a research design and instrumentation is. The main aim of the researcher is to make sure that the questionnaire is consistent, can be understood and is clear. The questionnaire was piloted to 36 individuals from the target population. This was 10% of the sample population. Mugenda (2003) noted that 10% of the sample population is appropriate for a pilot study. The study tested reliability and validity of data collection tool.

3.5.2 Validity of the Instrument

Mugenda and Mugenda (2003) asserted that the level to which a construct provides the measures what is being investigated is termed as validity. The study made use of content validity because it provides the measure of the level to which a sampled item represents the contents of what it was designed to measure. Creation of the questionnaire was done based on the objectives of the study. To affirm validity of the questionnaire, the researcher

discussed it with experts in the field who in this case were lecturers and project supervisors. The findings of the discussion enabled the researcher to identify those questions that are ambiguous and the ones that should be edited. After identified corrections have been made, the final questionnaire will be printed and distributed for data collection.

3.5.3 Reliability of the Instrument

Cronbach's alpha was used to determine reliability of the research instrument. This technique enabled the researcher to determine internal consistency of the questionnaire. Cronbach's alpha help in determining how closely related a set of items are as a group. The findings were used in determining how reliable the questionnaire is. If the coefficient value obtained is zero it suggests that the test score was not reliable but if the reliability coefficient is high, it suggests that the test score is more reliable and accurate. The reliability value usually ranges between 0 and 1. In this study the acceptable reliability value was 0.7 and above (Cooper & Schindler, 2014). The formula for Cronbach's alpha is:

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N-1) \cdot \bar{c}}$$

Where:

- N = the number of items.
- $\bar{c}$ = average covariance between item-pairs.
- $\bar{v}$ = average variance

3.6 Data Collection Procedures

The questionnaires were self-administered by the researcher. Research assistants employed by the researcher did the task of data collection. During data collection, drop and pick later technique and emailing was adopted. Respondents were given one week to fill the questionnaire; this ensured that the respondents had humble time to respond to the questionnaire. To make sure that issued questionnaires are returned, the researcher exercised care and control by maintaining a register to monitor those questionnaires that are issued and the ones that are received back. This ensured that most of the issued questionnaires were returned.

3.7 Data Analysis Techniques

The questionnaire contents were first coded using SPSS version 23. Quantitative data was analyzed by descriptive analysis like the mean, standard deviation, frequency and percentages. Presentation of the data was in tables and figures. Analysis of qualitative information was by segregating field notes based on the codes, categorizing codes based on their similarities and organizing the information based on study themes from where the study will make conclusions.

The degree of relationship existing between two variables is determined using correlation analysis. In this study, the researcher determined the level of association between the dependent and independent variable by computing correlation analysis. If the obtained correlation coefficient value is zero, it suggests that the two variables are not related and if the value is 1 it suggests that they are perfectly related. The relationship can be positive of negative with correlation coefficients rating from -1 to +1. If the obtained correlation coefficient value is $r = \pm 0.1$ to ± 0.29, it is considered to be small, if it is ± 0.3 to ± 0.49 its considered to be medium and if it's $\geq \pm 0.5$ it is strong.

The influence of the independent variables on the dependent variable was determined by computing multiple regression analysis. The equation was of the form:

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

Where Y is the dependent variable (compliance to NCA regulations)

X_1 is the financial capacity,

X_2 is technological capacity,

X_3 is human capacity

X4 is culture

ε is an error term.

β_0 is the regression constant,

β_1, β_2, β_3 and β_4 are the coefficients of independent variables

3.8 Operationalization of the Variables

Operational variables outline how the study defines and measure a specific variable as used in the study.

Table 3.1: Operationalization of Study Variables

Objectives	Variables	Indicators	Scale	Data Collection tool	Data analysis technique
To examine the determinants of private construction developers' capacity on compliance to National Construction Authority's regulations	Compliance to National Construction Authority regulations	● Contractor Registration ● Reporting of construction works ● Accreditation ● Code of conduct ● Health and safety	Ordinal scale	Questionnaire	Descriptive and inferential analysis
To determine the influence of financial capacity of private construction developers' on compliance to National Construction Authority Regulations	Financial capacity	● Budgeting ● Emergency fund ● Saving ● Spending ● Financial planning	Ordinal scale	Questionnaire	Descriptive and inferential analysis
To assess the influence of technological capacity of private construction developers' on compliance to National Construction Authority Regulations	Technological capacity	● Online hiring systems ● New construction technology ● Technology absorption ● Technology application ● Technology use	Ordinal scale	Questionnaire	Descriptive and inferential analysis

Objectives	Variables	Indicators	Scale	Data Collection tool	Data analysis technique
To examine the influence of human capacity of private construction developers' on compliance to National Construction Authority Regulations	Human capacity	● Employee skills ● Career growth ● Employee training ● Employee development ● Technical support	Ordinal scale	Questionnaire	Descriptive and inferential analysis
To assess the influence culture of private construction developers' on compliance to National Construction Authority Regulations	Culture	● Clan culture ● Adhocracy culture ● Hierarchy culture ● Market culture	Ordinal scale	Questionnaire	Descriptive and inferential analysis

3.9 Ethical Consideration

A research permit was sought from NACOSTI before commencing the study. While conducting the study the researcher should made an effort always to make sure that they didn't harm the respondents physically or emotionally for instance infliction on their privacy by asking questions that were sensitive or accessing records which might have personal information and ensuring that the information provided by the respondents was kept confidentially. Anonymity of the respondents was ensured to protect their rights; the researcher also ensured that the information provided was kept confidential. Respondents personal details were not sought only general information. To assure participants that the information sought was to be used for academic purposes only, the researcher obtained an introductory letter from The University of Nairobi.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

In this chapter, the study presents analysis of data collected from the field and interpretation of findings. Data was analyzed using descriptive and inferential statistics and the results presented in tables and figures. SPSS software was used for analysis.

4.2 Questionnaire Return Rate

The sample size was 360 respondents; all respondents were issued with questionnaires but only 277 dully filled and returned their questionnaires. The response rate was as presented in Table 4.1.

Table 4.1: Response Rate

Questionnaires	Frequency	Percent
Returned	277	76.9
Un-returned	83	23.1
Total	**360**	**100.0**

From the findings in table 4.1, the returned questionnaires formed a response rate of 76.9%. This response rate was considered excellent. Mugenda and Mugenda (2003) explained that a response rate of 50% and above is sufficient, 60% is good while a response rate of 70% and above is excellent for analysis and reporting. The responses obtained were used for further analysis. The high response rate was attributed to care and control where the researcher maintained a register to monitor those questionnaires issued and the ones received back. It was also attributed to making use of research assistants in the field.

4.3 Demographic Information of Respondents

In this section, the study presents the general information of respondents which was sought. This includes their gender, length of service, level of education, their understanding of National Construction Authority Regulations.

4.3.1 Gender of Respondents

Respondents were requested to indicate their gender. This enabled the study to determine the distribution of private construction developers in Nairobi County based on gender. Table 4.2 presents the findings.

Table 4.2: Gender of Respondents

Category	Frequency	Percent
Male	172	62.1
Female	105	37.9
Total	**277**	**100.0**

From the findings in table 4.2, 62.1% of the respondents were male while 37.9% were female. This was an indication that majority of private construction developers in Nairobi County are male. The findings also suggest that the study was not gender biased since respondents of both genders were included in the study.

4.3.2 Respondents Length of Service in Construction Industry

Respondents were asked to indicate the length of time they have been in the construction industry. The researcher was able to determine whether the respondents had sufficient experience in the sector to provide information needed in the study. The findings were as presented in Table 4.3.

Table 4.3: Respondents Length of Service in Construction Industry

Category	Frequency	Percent
1-5 years	34	12.3
6-10 years	59	21.3
11-15 years	81	29.2
Above 16 years	103	37.2
Total	**277**	**100.0**

From the findings in table 4.3, 37.2% of the respondents indicated that they have operated in the sector for more than 16 years, 29.2% had operated for 11 to 15 years, 21.3% for 6 to 10 years, and 12.3% for 1 to 5 years. This is an indication that the respondents selected for the study had operated for many years in the industry and therefore had the information needed for the study.

4.3.3 Respondents Level of Education

Respondents were requested to indicate their level of education. This was to assess capacity of the respondents to understand and respond to the questions of the study. Results were as presented in Table 4.4.

Table 4.4: Respondents Level of Education

Category	Frequency	Percent
Certificate	6	2.2
Diploma	80	28.9
Undergraduate	101	36.5
Postgraduate	90	32.5
Total	**277**	**100.0**

From the findings in table 4.4, 36.5% of the respondents had undergraduate as their highest level of education, 32.5% had post graduate, 28.9% had diploma, and 2.2% had certificate. The findings therefore suggested that majority respondents had attained high level or education with only 2.2% having certificates. The findings further suggest that respondents had attained sufficient education to understand and respond to the questions of the study.

4.3.4 Respondents Understanding of National Construction Authority Regulations

The study sought to determine whether respondents understood the National Construction Authority Regulations. The results were as presented in Table 4.5.

Table 4.5: Respondents Understanding of National Construction Authority Regulations

Category	Frequency	Percent
Yes	257	92.8
No	20	7.2
Total	**277**	**100.0**

From the findings in table 4.5, 92.8% of the respondents indicated that they were aware of the National Construction Authority Regulations while 7.2% were not aware. It is evident that majority of the respondents selected for the study were aware of the National Construction Authority Regulations.

4.3.5 National Construction Authority Regulations

Respondents were requested to indicate some of the National Construction Authority Regulations they were aware of. They explained that for a project to comply with NCA

regulations, a developer must provide all the required documentation (county government approvals, NEMA compliance, KRA compliance and valid practicing licenses for professionals involved in the project), as well as ensure that health and safety measures are observed in the construction site.

They explained that for a contractor, before registration, there are qualifications that must be met. The company must hold a certificate of incorporation from the Registrar of Companies as a limited liability company, partnership or sole proprietorship. At least one of the technical directors must have the minimum technical qualification, skills and experience in a construction related field and all the directors must submit their curriculum vitae to the NCA. Respondents also explained that according to the NCA rules and regulations, a contractor may be registered for several categories of construction works but may hold only one category of registration in relation to a particular class of construction works.

4.4 Financial Capacity of Private Construction Developers and Compliance to National Construction Authority Regulations

This section contains data analysis and it shows data on standard deviation, mean, correlation and multiple regression analysis.

4.4.1 Mean and Percentages of responses on financial capacity of private construction developers

Respondents were asked to indicate their level of agreement on the following statements about the influence of financial capacity on private construction developers' compliance to National Construction Authority regulations using the scale of 1-strongly disagree (SD), 2-disagree (D), 3-moderate (M), 4-agree (A), 5-strongly agree (SA). The findings were as presented in Table 4.6.

Table 4.6: Financial Capacity

Statements		SD	D	M	A	SA	Mean
I have the basic financial skills	%	2.6	4.6	1.3	87.4	4.0	3.856
I am able to prepare a realistic budget for a project	%	1.3	2.0	2.0	85.4	9.3	3.996
The set budget meets all the project expenses	%	2.0	1.3	2.0	88.7	6.0	3.960
The funds are strictly used for the set purpose	%	3.3	3.3	5.3	82.8	5.3	3.838
Misuse of funds lead to uncompleted constructions	%	2.0	2.0	3.9	78.9	13.2	4.007
The acquired funds are able to meet the project needs	%	3.9	2.0	5.9	83.5	4.7	3.838
The financial approximations turn out to be correct	%	1.3	1.3	3.3	85.4	8.6	3.982
The available financial resources are enough to cover the miscellaneous expenses	%	1.3	0.0	2.0	94.7	2.1	3.960
All the utilized funds can be accounted for	%	3.3	2.0	3.3	73.6	17.8	4.014

From the findings in table 4.6, 94.7% of the respondents agreed that the available financial resources are enough to cover the miscellaneous expenses, 88.7% agreed that the set budget meets all the project expenses. The study also found that, 87.4% agreed that they have the basic financial skills, 85.4% agreed that the financial approximations turn out to be correct, and 85.4% agreed that they are able to prepare a realistic budget for a project. Further, 83.5% agreed that the acquired funds are able to meet the project needs, 82.8% agreed that the funds are strictly used for the set purpose, 78.9% agreed that misuse of funds lead to uncompleted constructions, and 73.6% agreed that all the utilized funds can be accounted for. These findings therefore suggest that private construction developers' in Nairobi County have financial capacity, which are the resources that are required to ensure that activities in construction site are implemented successfully and work progresses smoothly.

Respondents further explained that they struggle to meet financial costs which most of the time is characterized by high rates on interest which is as a result of tightened monetary policies to deal with weakening shilling and increased rates of inflation. Lack of capital is a challenge that the real estate investors faces; this is because most of the individuals are not willing to put their funds in such businesses. Therefore, the fund present in the sector is limited and therefore cannot facilitate growth. Another contributing factor is that funding is

negatively affected by the structure of interest rates. The interest rate that is charged on funds for construction development is high because of the fact that these projects are long term.

4.4.2 Relationship between Financial Capacity and Compliance to National Construction Authority Regulations

The study computed correlating analyses to establish the degree and direction of the relationship existing between financial capacity and compliance to National Construction Authority Regulations. The findings were as presented in Table 4.7.

Table 4.7: Correlations between Financial Capacity and Compliance to NCA Regulations

		Compliance to NCA Regulations	**Financial Capacity**
Compliance to NCA Regulations	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	277	
Financial Capacity	Pearson Correlation	.603	1
	Sig. (2-tailed)	.000	
	N	277	277
Correlation is significant at the 0.01 level (2-tailed).			

Table 4.7 shows that r=0.603. This shows a strong positive linear correlation between financial capacity and compliance to National Construction Authority Regulations. It therefore implies that financial capacity of private construction developers has a strong relationship with compliance to National Construction Authority Regulations in Nairobi County.

The findings concur with Kaliba, Muya & Mumba (2009) who found out that poor management of finances by developers and lack of adequate and consistent funds release by clients are the main factors affecting compliance. Further, Ashokkumar (2014) indicated that the factors that influence construction quality implementation and compliance to construction rules at the execution phase in Indian construction industry include financial limitation.

The study further sought to test the hypothesis. The first null hypothesis states that there is no significant relationship between private construction developers' financial capacity and compliance to National Construction Authority Regulations in Nairobi County. From table 4.7, P was found to be 0.000, which was less than the selected level of significance (0.05). As a result, the null hypothesis was rejected and concluded that there is a significant relationship between private construction developers' financial capacity and compliance to National Construction Authority Regulations in Nairobi County.

4.4.3 Regression analysis of Private Construction Developers' Financial Capacity on Compliance to National Construction Authority Regulations

The research further wanted to see how much financial capacity of private construction developers predicted compliance to National Construction Authority Regulations.

The study computed regression analysis between financial Capacity and Compliance to National Construction Authority Regulations to answer the first research question: *How does private construction developers' financial capacity influence compliance to National Construction Authority regulations in Nairobi County?* The findings on regression analysis were presented in three tables.

Table 4.8: Model Summary (Financial Capacity and Compliance to NCA Regulations)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.603[a]	.367	.359	.46948

a. Predictors: (Constant), Financial Capacity

Model summary was used to show the amount of variation in dependent variable that can be attributed to changes in independent variables. From the findings presented in Table 4.8, the value of adjusted R^2 was found to be 0.359; this suggests that 35.9% variation in Compliance to National Construction Authority Regulations can be attributed to changes in financial capacity. The remaining 64.1% variation in Compliance to National Construction Authority Regulations can be attributed to other factors other than financial capacity. The findings further suggest that the variables (financial capacity and Compliance to National Construction Authority Regulations) are strongly and positively correlated as indicated by correlation coefficient (R) value of 0.603.

Table 4.9: ANOVA (Financial Capacity and Compliance to NCA Regulations)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.237	1	10.237	14.708	.000[b]
	Residual	191.400	275	0.696		
	Total	**201.637**	**276**			

a. Dependent Variable: Compliance to NCA Regulations
b. Predictors: (Constant), Financial Capacity

Analysis of variance was used to determine whether the model was a perfect fit for the data. From the findings in table 4.9, the P-value obtained (0.000) was less than the selected level of significance (0.05) an indication that the model was significant in predicting Compliance to National Construction Authority Regulations. The findings also revealed that the f- calculated value (14.708) was greater than the f-critical vale (3.875). This therefore suggests that financial capacity significantly influence Compliance to National Construction Authority Regulations.

Table 4.10: Beta Coefficients (Financial Capacity and Compliance to NCA Regulations)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.055	0.098		10.765	.000
	Financial Capacity	0.376	0.058	0.303	6.483	.000

a. Dependent Variable: Compliance to NCA Regulations

From the findings presented in Table 4.10, the beta coefficients were fitted into the following regression equation;

$Y= 1.055+ 0.303X_1+\varepsilon$ Where Y is Compliance to NCA Regulations and X_1 is Financial Capacity and ε is the error term.

From the above equation, it is evident that holding financial capacity to a constant zero, Compliance to National Construction Authority Regulations will be at a constant value of 1.055. The findings further show that an increase in financial capacity of Private Construction Developers' will cause Compliance to National Construction Authority Regulations to improve by 0.303. The positive influence was significant as indicated by a P-value of 0.000.

Regarding the first research question; *how does private construction developers' financial capacity influence compliance to National Construction Authority regulations Nairobi County?* The study concludes that financial capacity has positive influence on compliance to National Construction Authority regulations; suggesting that a unit increase in financial capacity will result in improved compliance to National Construction Authority regulations.

4.5 Technological Capacity of Private Construction Developers' and Compliance to National Construction Authority Regulations

This section contains data analysis and it shows data on standard deviation, mean, correlation and multiple regression analysis.

4.5.1 Mean and Percentages of responses on technology capacity of private construction developers

Respondents were requested to indicate their level of agreement on statements about the influence of technological capacity on private construction developers' compliance to National Construction Authority regulations using the scale of 1-strongly disagree (SD), 2-disagree (D), 3-moderate (M), 4-agree (A), 5-strongly agree (SA). The findings were as presented in Table 4.11.

Table 4.11: Technological Capacity

Statements		SD	D	M	A	SA	Mean
I look for potential contractors to hire in the NCA website.	%	4.6	4.6	8.6	69.0	13.2	3.809
Technology is used in assessing contractors' qualifications and capability.	%	3.3	3.3	6.6	73.6	13.2	3.906
I prefer hiring contractors with the current construction technological know-how	%	5.9	3.3	9.9	70.3	10.6	3.773
I have basic technological knowledge and skills required to interpret construction drawings on site.	%	4.6	2.0	4.6	69.0	19.8	3.975
Modern construction techniques are adopted in the construction process	%	3.3	3.3	6.6	73.6	13.2	3.906
I have been using the NCA online application since its inception	%	3.3	3.3	8.6	76.9	8.0	3.830
The NCA online application is easy to use	%	4.6	2.0	9.9	72.3	11.3	3.838
The NCA online application minimizes travelling expenses in case one is far from the NCA offices	%	3.3	4.6	2.0	78.9	11.3	3.906
The problem that leads to low usage of NCA technology is poor network connectivity	%	3.3	4.6	3.3	71.0	17.8	3.953
The NCA has been advertising and educating people about the online application system	%	1.3	4.6	7.9	69.0	17.2	3.957

From the findings in table 4.11, 78.9% of respondents agreed that the NCA online application minimizes travelling expenses in case one is far from the NCA offices, 76.9% agreed that they have been using the NCA online application since its inception, and 73.6% agreed that modern construction techniques are adopted in the construction process. The findings also showed that 73.6% agreed that technology is used in assessing contractors' qualifications and capability, 72.3% agreed that the NCA online application is easy to use, and 71.0% agreed that the problem that leads to low usage of NCA technology is poor network connectivity. Further, 70.3% of respondents agreed that they prefer hiring contractors with the current construction technological knowledge, 69.0% agreed that they look for potential contractors to hire in the NCA website and 69.0% agreed that they have basic technological knowledge and skills required to interpret construction drawings on

site. The findings also showed that another 69% of respondents agreed that the NCA has been advertising and educating people about the online application system.

Respondents were also asked to indicate other ways technological capacity influence compliance to National Construction Authority regulations. Respondents indicated that knowledge regarding modern management and comprehension of processes of construction and design is very important in managing construction projects; they enhance success of projects. They explained that companies that are not at par with technology will not be able to compete with technologically advanced ones. Those firms that lack technological advancement especially the small construction companies that lack the financial abilities of purchasing equipment for facilitating completion of some projects won't be able to undertake some technologies and therefore their projects might not attain the required standards.

4.5.2 Relationship between Technological Capacity and Compliance to National Construction Authority Regulations

The study computed correlation analysis to determine the strength and nature of the relationship between Technological Capacity and Compliance to National Construction Authority Regulations. The findings were as presented in Table 4.12.

Table 4.12: Correlation between Technological Capacity and Compliance to NCA Regulations

		Compliance to NCA Regulations	Technological Capacity
Compliance to NCA Regulations	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	277	
Technological Capacity	Pearson Correlation	.591	1
	Sig. (2-tailed)	.000	
	N	277	277
Correlation is significant at the 0.01 level (2-tailed).			

From the findings in table 4.12, technological capacity had a strong positive correlation with compliance to National Construction Authority Regulations (r=591). The correlation between the two variables was considered significant because the P-value obtained (0.000) was less than the selected level of significance (0.05). This is an indication that

technological capacity of private construction developers helped in improving Compliance to National Construction Authority Regulations in Nairobi County.

The finding relate to Rahman (2013) who noted that most developers in Kenya are not conversant with the online system hence most of them are non-compliant. Ganesan & Kelsey (2013) explained that a company can ensure there is consistent success if activities of transferring technology are clearly understood and managed. Despite the fact that diffusion of innovative technologies in the market is complicated and not easy, there is variation in success levels and there could be lack of balance in the effects of the diffused innovation. Yet, many technological opportunities remain under-utilized and the diffusion of innovative technologies appears to be quite slow.

The study further sought to test the hypothesis. The second null hypothesis states that there is no significant relationship between private construction developers' technological capacity and compliance to National Construction Authority Regulations. From table 4.12, P was found to be 0.000, which was less than the selected level of significance (0.05). As a result, the null hypothesis was rejected and concluded that there is a significant relationship between private construction developers' technological capacity and compliance to National Construction Authority Regulations in Nairobi County.

4.5.3 Regression analysis of Private Construction Developers' Technological Capacity on Compliance to National Construction Authority Regulations

The research further wanted to see how much technological capacity of private construction developers predicted compliance to National Construction Authority Regulations.

The study conducted regression between technological capacity and Compliance to National Construction Authority Regulations to answer the second research question which was; *what level of influence does private construction developers' technological capacity have on compliance to National Construction Authority regulations in Nairobi County?* The findings of the regression analysis were presented in three tables.

Table 4.13: Model Summary for Regression between Technological Capacity and Compliance to NCA Regulations

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.591[a]	.349	.340	.498850

a. Predictors: (Constant), Technological Capacity

Model summary was used to show the amount of variation in Compliance to National Construction Authority Regulations as a result of changes in technological capacity. From the findings presented in Table 4.13, the value of adjusted R^2 was found to be 0.340 suggesting that 34% variation in Compliance to National Construction Authority Regulations can be attributed to changes in technological capacity. The remaining 66% variation in Compliance to National Construction Authority Regulations can be attributed to other factors other than technological capacity. The findings further suggest that the variables (technological capacity and Compliance to National Construction Authority Regulations) have a strong positive correlation as indicated by correlation coefficient (R) value of 0.591.

Table 4.14: ANOVA for Regression between Technological Capacity and Compliance to NCA Regulations

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.934	1	11.934	13.485	.000[b]
	Residual	243.375	275	0.885		
	Total	**255.309**	**276**			

a. Dependent Variable: Compliance to NCA Regulations

b. Predictors: (Constant), Technological Capacity

Analysis of variance was used to determine significance of the model. From the findings, the P-value obtained (0.000) was less than the selected level of significance (0.05) an indication that the model was significant in predicting Compliance to National Construction Authority Regulations. The findings in table 4.14 also revealed that the f-calculated value (13.485) was greater than the f-critical vale (3.875). This therefore suggests that technological capacity significantly influence Compliance to National Construction Authority Regulations.

Table 4.15: Coefficients for Regression between Technological Capacity and Compliance to NCA Regulations

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.723	0.091		4.441	.000
	Technological Capacity	0.382	0.084	0.291	3.672	.000
a. Dependent Variable: Compliance to NCA Regulations						

From the findings presented in Table 4.15, the following regression equation was fitted;

$Y= 0.723+0.291X_2+\varepsilon$ Where Y is Compliance to NCA Regulations and X_2 is Technological Capacity and ε is the error term.

From the above equation, it is evident that holding technological capacity to a constant zero, Compliance to National Construction Authority Regulations will be at a constant value of 0.723. The findings further show that an increase in technological capacity of Private Construction Developers' will cause Compliance to National Construction Authority Regulations to improve by 0.291. The positive influence was significant as indicated by a P-value of 0.000.

Regarding the second research question; *what level of influence does private construction developers' technological capacity have on compliance to National Construction Authority regulations in Nairobi County?* The study concludes that technological capacity has positive influence on compliance to National Construction Authority regulations; suggesting that a unit increase in technological capacity will result in improved compliance to National Construction Authority regulations.

4.6 Human Capacity of Private Construction Developers' and Compliance to National Construction Authority Regulations

This section contains data analysis and it shows data on standard deviation, mean, correlation and multiple regression analysis.

4.6.1 Mean and Percentages of responses on human capacity of private construction developers

Respondents were asked to indicate their level of agreement with various statements that relate with statements about the influence of human capacity on private construction developers' compliance to National Construction Authority regulations using the scale 1-strongly disagree (SD), 2-disagree (D), 3-moderate (M), 4-agree (A), 5-strongly agree (SA). The findings were as presented in Table 4.16.

Table 4.16: Human Capacity

Statements		SD	D	M	A	SA	Mean
I always engage a qualified and NCA accredited contractor in the construction process	%	4.6	3.3	7.2	73.6	11.3	3.834
Construction workers skills are enhanced through training	%	4.6	4.6	6.6	74.3	10.0	3.798
Problem solving is highly encouraged between the construction workers	%	3.3	3.3	7.9	77.5	8.0	3.838
Construction workers help their colleagues in improving in their activities	%	4.6	0.0	9.9	72.3	13.2	3.895
Construction workers knowledge is enhanced through training and development	%	3.3	1.3	3.3	74.3	17.8	4.018
The construction workers work together as one large team	%	4.6	5.3	7.9	69.0	13.2	3.801
All construction workers have an equal opportunity of being trained	%	3.3	3.3	6.6	73.6	13.2	3.906
Workers are given an opportunity to advance their careers	%	6.6	3.3	9.9	70.3	10.0	3.744
I always engage a qualified Engineer and Architect in my construction works.	%	4.6	1.3	4.6	69.7	19.8	3.978
Workers are assisted in solving some of the problems they encounter	%	3.3	3.3	6.6	73.6	13.2	3.906

From the findings in table 4.16, 77.5% of respondents were in agreement that problem solving is highly encouraged between the construction workers, 74.3% agreed that construction workers knowledge is enhanced through training and development, 74.3% agreed that construction workers skills are enhanced through training, 73.6% agreed that

they always engage a qualified and NCA accredited contractor in the construction process, another 73.6% of respondents agreed that all construction workers have an equal opportunity of being trained, 73.6% of respondents also agreed that workers are assisted in solving some of the problems they encounter, 72.3% were in agreement that construction workers help their colleagues in improving in their activities, 70.3% agreed that workers are given an opportunity to advance their careers, 69.7% agreed that they always engage a qualified Engineer and Architect in their construction works, and 69% of respondents agreed that construction workers work together as one large team.

Respondents were also asked to indicate other ways they think human capacity influence compliance to National Construction Authority regulations. The most important element in production is workforce because it's the only factor responsible for the creation of value and sets overall productivity levels. Occupational skill or different workmen trade depends on their profession or training; this therefore affects their level of efficiency and effectiveness. Also the quality of work produced depends on workers/contractor's skills, personal ability and experience.

4.6.2 Relationship between Human Capacity and Compliance to NCA Regulations

The study computed correlation analysis to determine how strong human capacity correlated with Compliance to National Construction Authority Regulations, and the direction of their relationship. The findings were as presented in Table 4.17.

Table 4.17: Correlation between Human Capacity and Compliance to NCA Regulations

		Compliance to NCA Regulations	Human Capacity
Compliance to NCA Regulations	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	277	
Human Capacity	Pearson Correlation	.675	1
	Sig. (2-tailed)	.000	
	N	277	277
Correlation is significant at the 0.01 level (2-tailed).			

From the findings in table 4.17, human capacity had a strong positive correlation with compliance to National Construction Authority Regulations (r=675). The correlation

between human capacity and Compliance to National Construction Authority Regulations was considered significant because the P-value obtained (0.000) was less than the selected level of significance (0.05). This is an indication that human capacity of private construction developers helped in improving Compliance to National Construction Authority Regulations in Nairobi County.

The findings concur with Nyaanga (2014) who revealed that majority of the contractors lack professional qualification in the fields of engineering and building and construction. Therefore, any projects that are undertaken by these contractors lack professionalism. Rojas & Aramvareekul (2013) also revealed that systems and strategies of management and issues of manpower were the most significant factors affecting productivity of labor.

The study further sought to test the hypothesis. The third null hypothesis states that there is no significant relationship between private construction developers' human capacity and compliance to National Construction Authority Regulations in Nairobi County. From table 4.17, P was found to be 0.000, which was less than the selected level of significance (0.05). As a result, the null hypothesis was rejected and concluded that there is a significant relationship between human capacity and private construction developers' compliance to National Construction Authority Regulations.

4.6.2 Regression Analysis of Private Construction Developers' Human Capacity on Compliance to National Construction Authority Regulations

The research further wanted to see how much human capacity of private construction developers predicted compliance to National Construction Authority Regulations.

The study computed regression analysis where Compliance to National Construction Authority Regulations was regressed on human capacity. The study sought to answer the third research question which was; *to what extent does private construction developers' human capacity influence compliance to National Construction Authority regulations in Nairobi County?* The findings of regression analysis were presented in three tables.

Table 4.18: Model Summary for Regression between Human Capacity and Compliance to NCA Regulations

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.675[a]	.456	.452	4.83316

a. Predictors: (Constant), Human Capacity

Model summary was used to show the amount of variation in Compliance to National Construction Authority Regulations that can be attributed to changes in human capacity. From the findings presented in Table 4.18, the value of adjusted R^2 was found to be 0.452 suggesting that 45.2% variation in Compliance to National Construction Authority Regulations can be attributed to changes in human capacity. The remaining 54.8% suggest that there are other factors other than human capacity that can explain variation in Compliance to National Construction Authority Regulations. The findings further suggest that the variables (human capacity and Compliance to National Construction Authority Regulations) are strongly and positively correlated as indicated by correlation coefficient (R) value of 0.675.

Table 4.19: ANOVA for Regression between Human Capacity and Compliance to NCA Regulations

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.581	1	8.581	23.902	.000[b]
	Residual	98.725	275	0.359		
	Total	**107.306**	**276**			

a. Dependent Variable: Compliance to NCA Regulations
b. Predictors: (Constant), Human Capacity

Analysis of variance was used to determine significance of the model. From the findings, the P-value obtained (0.000) was less than the selected level of significance (0.05) an indication that the model was significant in predicting Compliance to National Construction Authority Regulations. The findings also revealed that the f- calculated value (23.902) was greater than the f-critical vale (3.875). This therefore suggests that private construction developers' human capacity significantly influence Compliance to National Construction Authority Regulations.

Table 4.20: Coefficients for Regression between Human Capacity and Compliance to NCA Regulations

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.993	0.142		5.264	.000
	Human Capacity	0.363	0.074	0.375	4.889	.000
a. Dependent Variable: Compliance to NCA Regulations						

From the findings presented in Table 4.20, the following regression equation was fitted;

$\boldsymbol{Y= 0.993+0.375X_3+\varepsilon}$ Where Y is Compliance to NCA Regulations and X_3 is Human Capacity and ε is the error term.

From the above equation, it is evident that holding human capacity to a constant zero, Compliance to National Construction Authority Regulations will be at a constant value of 0.993. The findings further show that an increase in human capacity of Private Construction Developers' will cause Compliance to National Construction Authority Regulations to improve by 0.375. The positive influence was significant as indicated by a P-value of 0.000.

Regarding the third research question; *to what extent does private construction developers' human capacity influence compliance to National Construction Authority regulations in Nairobi County?* The study concludes that human capacity has positive influence on compliance to National Construction Authority regulations; suggesting that a unit increase in human capacity will result in improved compliance to National Construction Authority regulations.

4.7 Culture of Private Construction Developers' and Compliance to National Construction Authority Regulations

This section contains data analysis and it shows data on standard deviation, mean, correlation and multiple regression analysis.

4.7.1 Mean and Percentages of responses on culture of private construction developers

Respondents were asked to indicate the level to which they agree with statements about the influence of organizational culture on private construction developers' compliance to National Construction Authority regulations using the scale 1-strongly disagree (SD), 2-disagree (D), 3-moderate (M), 4-agree (A), 5-strongly agree (SA). The findings were as presented in Table 4.21.

Table 4.21: Culture

Statements		SD	D	M	A	SA	Mean
I ensure that registration is done before commencement of the project	%	3.3	3.3	7.9	77.5	8.0	3.838
At times the registration approval takes too long hence projects start without approval	%	4.6	1.3	9.9	72.9	11.3	3.845
The regulations are too many hence one cannot grasp all of them	%	3.3	4.6	1.3	79.5	11.3	3.906
Some of the policies are not well explained	%	2.6	2.6	8.6	78.2	8.0	3.866
It is hard to follow all the needed construction procedures	%	4.6	1.3	10.5	72.9	10.6	3.830
I am unaware of some the required standards	%	3.3	82.8	5.3	3.3	5.3	3.838
It is difficult to abide by set down regulations	%	2.0	2.0	3.9	78.9	13.2	2.466
A lot of costs are incurred in the registration process leading to non-compliance	%	2.6	2.0	2.6	80.2	12.6	3.989
A lot of time is needed for the registration hence opting to pay fines	%	4.6	4.6	7.2	75.6	8.0	3.773
Pervasive corruption makes the registration process costly	%	3.3	3.3	6.6	73.6	13.2	3.906

From the findings in table 4.21, 82.8% of the respondents disagreed that they are unaware of some the required standards, 80.2% agreed that a lot of costs are incurred in the registration process leading to non-compliance, 79.5% agreed that the regulations are too many hence one cannot grasp all of them, 78.9% agreed that it is difficult to abide by set down regulations, 78.2% agreed that some of the policies are not well explained, 77.5% agreed that they ensure that registration is done before commencement of the project, 75.6% agreed that a lot of time is needed for the registration hence opting to pay fines, 73.6% agreed that pervasive corruption makes the registration process costly, 72.9%

agreed that it is hard to follow all the needed construction procedures, and 72.9% agreed that at times the registration approval takes too long hence projects start without approval.

Respondents were also asked to indicate other ways through which organizational culture influence compliance to National Construction Authority Regulations. Developers have indicated that the main reason why they decide to undertake projects without being approved is because of the challenges in adhering to the requirements. Their main complaint is with the time and cost incurred before approval of plans. They explained that they are required to follow with application of paper chase from an office to the next and in the process corruption makes the process even more costly. This therefore contributes to the increased number of regulation disregard. There are respondents who indicated that they were not aware of the development standards/regulations. This results to non-compliance of the set development control regulations which negatively affects policies and implementation of development plans. Lack of awareness to these planning regulations can be attributed partially to lack of policy guidelines like current plans for development, planning standards and comprehensive zoning plans.

4.7.2 Relationship between Culture and Compliance to National Construction Authority Regulations

The study computed correlation analysis to determine the direction and the strength of the correlation between culture and compliance to National Construction Authority Regulations. The findings were as presented in Table 4.22.

Table 4.22: Correlation between Culture and Compliance to NCA Regulations

		Compliance to NCA Regulations	Culture
Compliance to NCA Regulations	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	277	
Culture	Pearson Correlation	.504	1
	Sig. (2-tailed)	.000	
	N	277	277
Correlation is significant at the 0.01 level (2-tailed).			

From the findings in table 4.22, culture had a strong positive correlation with compliance to National Construction Authority Regulations (r=504). The correlation between the two variables was considered significant because the P-value obtained (0.000) was less than the

selected level of significance (0.05). This is an indication that culture of private construction developers helped in improving Compliance to National Construction Authority Regulations in Nairobi County.

The findings are related to those of Sarkheyli, Sharifi, Rafiyan, Reza, & Murayama (2012) who indicated that factors affecting the compliance or reasons for noncompliance to building/housing standards are income level of developers, awareness level, economic (profit) motives, and compared their significant level with compliance with building standards. Further, Sarkheyli, Sharifi, Rafiyan, Reza, & Murayama (2012) observed that the main reason why developers' constantly compromise the quality of design in Iran is for the purpose of achieving more profit in a short period of time. Because of the little financial impact they incur, developers are always willing to pay fines for violating rules and building codes (Pahl-Weber, Seelig, Ohlenburg, & Bergmann 2013).

The study further sought to test the hypothesis. The fourth null hypothesis states that there is no significant relationship between private construction developers' culture and compliance to National Construction Authority Regulations in Nairobi County. From table 4.22, P was found to be 0.000, which was less than the selected level of significance (0.05). As a result, the null hypothesis was rejected and concluded that there is a significant relationship between private construction developers' culture and compliance to National Construction Authority Regulations in Nairobi County.

4.7.3 Regression Analysis of Private Construction Developers' Culture on Compliance to National Construction Authority Regulations

The research further wanted to see how much private construction developers' culture predicted compliance to National Construction Authority Regulations in Nairobi County.

The study computed regression analysis to answer the fourth research question; *how does private construction developers' culture influence compliance to National Construction Authority regulations in Nairobi County?* The findings of regression analysis were presented in three tables.

Table 4.23: Model Summary for the Regression Analysis between Culture and Compliance to National Construction Authority Regulations

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.504[a]	.254	.249	.467192

a. Predictors: (Constant), Career Management

Model summary was used to show the amount of variation in dependent variable that can be attributed to changes in independent variables. From the findings presented in Table 4.23, the value of adjusted R^2 was found to be 0.249; this suggests that 24.9% variation in Compliance to National Construction Authority Regulations can be attributed to changes in culture. The remaining 75.1% variation in Compliance to National Construction Authority Regulations can be attributed to other factors other than culture. The findings further suggest that the variables (Culture and Compliance to National Construction Authority Regulations) are strongly and positively correlated as indicated by correlation coefficient (R) value of 0.504.

Table 4.24: ANOVA for the Regression between Culture and Compliance to NCA Regulations

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.999	1	9.999	14.857	.000[b]
	Residual	185.075	275	0.673		
	Total	**195.074**	**276**			

a. Dependent Variable: Compliance to NCA Regulations
b. Predictors: (Constant), Culture

Analysis of variance was used to determine whether the model was a perfect fit for the data. From the findings, the P-value obtained (0.000) was less than the selected level of significance (0.05) an indication that the model was significant in predicting Compliance to National Construction Authority Regulations. The findings in table 4.24 also revealed that the f- calculated value (14. 857) was greater than the f-critical vale (3.875). This therefore suggests that private construction developers' culture significantly influence Compliance to National Construction Authority Regulations in Nairobi County.

Table 4.25: Coefficients for the Regression between Culture and Compliance to NCA Regulations

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.083	0.086		12.593	.000
	Culture	0.258	0.057	0.304	4.526	.000
a. Dependent Variable: Compliance to NCA Regulations						

From the findings presented in Table 4.25, the beta coefficients were fitted into the following regression equation;

$Y = 1.087 + 0.304X_4 + \varepsilon$ Where Y is Compliance to NCA Regulations and X_4 is culture and ε is the error term.

From the above equation, it is evident that holding culture to a constant zero, Compliance to National Construction Authority Regulations will be at a constant value of 1.087. The findings further show that an increase in culture will cause Compliance to National Construction Authority Regulations to improve by 0.304 units. The positive influence was significant as indicated by a P-value of 0.000.

Regarding the first research question; *how does private construction developers' culture influence compliance to National Construction Authority regulations in Nairobi County?* The study concludes that culture has positive influence on compliance to National Construction Authority regulations; suggesting that a unit increase in culture will result in improved compliance to National Construction Authority regulations.

4.8 Combined capacity of private construction developers and compliance to National Construction Authority Regulations

The fifth objective sought to examine private construction developers' combined capacity influence compliance to National Construction Authority Regulations in Nairobi County.

4.8.1 Mean and Percentages of responses on combined capacity of private construction developers

Respondents were requested to indicate their level of agreement following statements about the compliance to National Construction Authority regulations using the scale of 1-

strongly disagree (SA), 2-disagree (D), 3-moderate (M), 4-agree (A), 5-strongly agree (SA). Results obtained were as presented in Table 4.26.

Table 4.26: **Compliance to National Construction Authority regulations**

Statements		**SD**	**D**	**M**	**A**	**SA**	**Mean**
There is rise in developer registration	**%**	2.6	2.0	2.6	80.1	12.6	3.993
Developers are adopting the online registration system	**%**	4.6	4.6	7.2	75.6	8.0	3.773
There is increase in reporting of construction works	**%**	2.6	2.6	5.9	80.8	8.0	3.899
Monitoring has enhanced reporting of construction works	**%**	5.9	2.6	8.6	77.5	5.3	3.744
More construction workers have been accredited	**%**	2.0	5.3	14.5	77.5	0.7	3.700
More developers have been awarded certificates	**%**	2.6	2.6	5.9	74.9	13.9	3.957
Developers adhere to the set construction standards	**%**	2.6	2.6	8.6	78.2	8.0	3.866
The right materials are acquired for construction purposes	**%**	4.6	1.3	10.5	72.9	10.6	3.830
Developers ensure the health and safety measures are adhered	**%**	2.6	4.6	2.6	78.9	11.3	3.921
It is the responsibility of developers ensure safety and onsite review of management plans	**%**	1.3	2.6	2.6	85.4	8.0	3.960

From the findings in table 4.26, 85.4% of respondents agreed that it is the responsibility of developers to ensure safety and onsite review of management plans, 80.8% agreed that there is increase in reporting of construction works, 80.1% of respondents agreed that there is rise in developer registration, 78.9% agreed that developers ensure the health and safety measures are adhered, 78.2% of respondents agreed that developers adhere to the set construction standards, 77.5% agreed that monitoring has enhanced reporting of construction works, 77.5% agreed that more construction workers have been accredited, 75.6% were in agreement that developers are adopting the online registration system, 74.9% agreed that more developers have been awarded certificates, and 72.9% agreed that the right materials are acquired for construction purposes.

4.8.1 Relationship between Private Construction Developers' Capacity on Compliance to National Construction Authority's Regulations

The study computed correlation analysis between all independent variable and the dependent variable. The findings were as presented in Table 4.27. The independent variables are abbreviated as follows; Compliance to NCA Regulations (CNCA), Financial Capacity (FC), Technological Capacity (TC), Human Capacity (HC) and Culture (C).

Table 4.27: Overall Correlations

		CNCA	FC	TC	HC	C
Compliance to NCA Regulations (CNCA)	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	277				
Financial Capacity (FC)	Pearson Correlation	.603	1			
	Sig. (2-tailed)	.000				
	N	277	277			
Technological Capacity (TC)	Pearson Correlation	.591	.271	1		
	Sig. (2-tailed)	.000	.001			
	N	277	277	277		
Human Capacity (HC)	Pearson Correlation	.675	.095	.216	1	
	Sig. (2-tailed)	.000	.249	.008		
	N	277	277	277	277	
Culture (C)	Pearson Correlation	.504	.139	.361	.200	1
	Sig. (2-tailed)	.000	.091	.000	.015	
	N	277	277	277	277	277

Correlation is significant at the 0.01 level (2-tailed).
Correlation is significant at the 0.05 level (2-tailed).

The results in table 4.27 revealed that there was a strong positive correlation between financial capacity and compliance to National Construction Authority Regulations ($r = 0.603$, $p = 0.000<0.01$); there was a positive correlation between technological capacity and compliance to National Construction Authority Regulations ($r = 0.591$, $P = 0.000<0.01$); there was a positive correlation between human capacity and compliance to National Construction Authority Regulations ($r = 0.675$, $P = 0.000<0.01$); there was a positive correlation between culture and compliance to National Construction Authority Regulations ($r = 0.504$, $P = 0.000<0.01$). This implies that financial capacity, technological capacity, human capacity, and culture are related with compliance to National Construction Authority Regulations.

The study further sought to test the hypothesis. The fifth null hypothesis states that there is no significant relationship between private construction developers' combined capacity and compliance to National Construction Authority Regulations in Nairobi County. From table 4.27, P was found to be 0.000, which was less than the selected level of significance (0.05). As a result, the null hypothesis was rejected and concluded that there is a significant relationship between private construction developers' combined capacity and compliance to National Construction Authority Regulations in Nairobi County.

4.8.2 Regression Analysis of Private Construction Developers' Combined Capacity on Compliance to National Construction Authority Regulations

The research further wanted to see how much combined capacity of private construction developers predicted compliance to National Construction Authority Regulations.

The study computed regression analysis of all the independent variables to determine their combined effect of private construction developers' capacity on compliance to National Construction Authority's regulations. The findings were presented in three tables.

Table 4.28: Overall Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.897[a]	.805	.796	.52630

a. Predictors: (Constant), Financial Capacity, Technological Capacity, Human Capacity, Culture

From the findings in 4.28, the value of adjusted R^2 was 0.796 which is an indication that combining all the four independent variables (Financial Capacity, Technological Capacity, Human Capacity, and Culture) explain 79.6% variation in compliance to National Construction Authority's regulations. The remaining 20.4% suggest that there exist other factors that can be attributed to variation in compliance to National Construction Authority's regulations that were not discussed in this study. The findings further show that the dependent variable was strongly and positively related with the independent variables, as indicated by correlation coefficient (R) value of 0.897.

Table 4.29: ANOVA for Overall Regression

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.701	4	6.175	12.680	.000[b]
	Residual	132.5	272	0.487		
	Total	**157.165**	**276**			

a. Dependent Variable: Compliance to NCA Regulations

b. Predictors: (Constant), Financial Capacity, Technological Capacity, Human Capacity, Culture

From the findings in table 4.29, the P-value obtained (0.000) was less than the selected level of significance (0.05). This therefore suggests that the model was significant in predicting compliance to National Construction Authority's regulations. The findings further showed that the f-calculated value (12.680) was greater than the f-critical value (2.405). The findings therefore suggest that the financial capacity, technological capacity, human capacity, and culture are significant predictors of compliance to National Construction Authority's regulations.

Table 4.30: Coefficients of the Study Variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.409	0.044		9.295	0.002
	Financial Capacity	0.352	0.063	0.342	5.587	0.005
	Technological Capacity	0.376	0.065	0.353	5.785	0.003
	Human Capacity	0.286	0.052	0.276	5.500	0.011
	Culture	0.215	0.046	0.197	4.674	0.025

a. Dependent Variable: Compliance to NCA Regulations

From the findings in table 4.30, the following regression equation was fitted;

$Y= 0.409+ 0.342X_1+0.353X_2+ 0.276X_3+ 0.197X_4+ \varepsilon$ Where Y is the dependent variable (compliance to NCA regulations); X_1 is the financial capacity, X_2 is technological capacity, X_3 is human capacity, X_4 is culture and ε is an error term.

From the above regression equation, holding the four independent variables to a constant zero, compliance to NCA regulations will be at a constant value of 0.409. The findings further reveal that financial capacity as a positive influence on compliance to National Construction Authority Regulations (β=0.342). The influence of financial capacity on

compliance to National Construction Authority Regulations was significant since the P-value obtained (0.005) was less than the selected level of significance (0.05). Therefore, financial capacity has a positive significant influence on compliance to National Construction Authority Regulations.

Technological capacity was found to have positive influence on financial compliance to National Construction Authority Regulations (β=0.353). The influence was considered significant since the P-value obtained (0.003) was less than the selected level of significance (0.05). Therefore, technological capacity positively and significantly influences compliance to National Construction Authority Regulations. Increasing technological capacity results in an increase in compliance to National Construction Authority Regulations.

Human capacity was found to have a positive influence on compliance to National Construction Authority Regulations (β=0.276). The influence of human capacity on compliance to National Construction Authority Regulations was significant since the P-value obtained (0.011) was less than the selected level of significance (0.05). Therefore, human capacity positively and significantly influences compliance to National Construction Authority Regulations. Increasing human capacity will result in an increase in compliance to National Construction Authority Regulations.

Finally, the findings revealed that culture has a positive influence on compliance to National Construction Authority Regulations as indicted by Beta value of 0.197. The influence of culture on compliance to National Construction Authority Regulations was significant since the P-value obtained (0.025) was less than the selected level of significance (0.05). Therefore, culture positively and significantly influences compliance to National Construction Authority Regulations. Improving culture will result in an increase in compliance to National Construction Authority Regulations.

4.9 Discussion of Findings

In this section, the study presents discussion of findings based on each research objective, and links the findings with reviewed literature.

4.9.1 Financial Capacity of Private Construction Developers' and Compliance to National Construction Authority Regulations

The available financial resources for private construction developers in Nairobi County are enough to cover the miscellaneous expenses. Majority (83.5%) agreed that the acquired funds are able to meet the project needs and 88.7% agreed that the set budget meets all the project expenses. These disagrees with Harris and McCaffer (2013) who explained that not all developers qualify to access funds from the financial market and banks since financial markets finance only projects that are viable and with rates of returns well above the cost of funds. Majority (87.4%) of private developers in Nairobi County have the basic financial skills that guide them in accurate financial approximation and preparation of realistic budgets for products. Majorities (82.8%) of private developers strictly use the funds for the set purpose and therefore, all the utilized funds can be accounted for. The study also found that misuse of funds lead to uncompleted constructions. These findings concurs with Kaliba, Muya & Mumba (2009) who found out that poor management of finances by developers and lack of adequate and consistent funds release by clients are the main factors affecting compliance.

The study established that financial capacity had a strong positive correlation with compliance to National Construction Authority Regulations. The study also established that variation in Compliance to National Construction Authority Regulations can be attributed to changes in financial capacity. This concurs with Danny (2012) that availability of capital is an important consideration for any investor to avoid delays and incomplete projects usually witnessed when projects have already started. The study also established that indication that financial capacity significantly influences Compliance to National Construction Authority Regulations. This concurs with Ashokkumar (2014) that factors that influence construction quality implementation and compliance to construction rules at the execution phase in Indian construction industry include financial limitation.

Respondents further explained that *'they struggle to meet financial costs which most of the time is characterized by high rates on interest which is as a result of tightened monetary policies to deal with weakening shilling and increases rates of inflation'.*

4.9.2 Technological Capacity of Private Construction Developers' and Compliance to National Construction Authority Regulations

The study established that majority of respondents felt that the NCA online application minimizes travelling expenses in case one is far from the NCA offices and that modern construction techniques are adopted in the construction process. This agrees with Chai & Yusuf (2013) that knowledge regarding modern management and comprehension of the process of construction and design is very important in managing construction projects. Majority (73.6%) respondents agreed that technology is used in assessing contractors' qualifications and capability and 72.3% agreed that the NCA online application is easy to use. Availability of better information regarding operations is beneficial to developers because it lowers the cost of labor, reduces waste, lower the cost of inventory and allow for better utilization of resources. This agrees with Fortune & White (2014) that information communication technology helps to provide information that is relevant, complete and accurate and therefore helps to improve efficiency of organization and controlling of costs of products. Majority (76.9%) developers have been using the NCA online application since its inception and have basic technological knowledge and skills required to interpret construction drawings on site. The findings concur with Adriaanse & Voordijk (2014) that ICT supports decision making in an organization; therefore, it can be adopted to be used by Project Managers and engineers in software for estimations. Majority of the developers also prefer hiring contractors with the current construction technological expertise and majority (69.0%) agreed that they look for potential contractors to hire in the NCA website.

The study established that technological capacity had a strong positive and significant correlation with compliance to National Construction Authority Regulations. The study also established that variation in Compliance to National Construction Authority Regulations is attributed to changes in technological capacity. These findings agree with Malik (2012) that technology is very important in any construction because it significantly

influences its performance; therefore, those companies that are not at par with technology will not be able to compete with technologically advanced ones. The study also found technological capacity significantly influences Compliance to National Construction Authority Regulations; an increase in technological capacity of Private Construction Developers' causes Compliance to National Construction Authority Regulations to improve. Chai & Yusuf (2013) explained that knowledge regarding modern management and comprehension of the process of construction and design is very important in managing construction projects. Fortune & White (2014) added that information communication technology, helps to provide information that is relevant, complete and accurate; this helps to improve efficiency of organization and controlling of costs of products.

Respondents also indicated that *'knowledge regarding modern management and comprehension of processes of construction and design is very important in managing construction projects; they enhance success of projects'.* They explained that companies that are not at par with technology will not be able to compete with technologically advanced ones.

4.9.3 Human Capacity of Private Construction Developers' and Compliance to National Construction Authority Regulations

Majority respondents agreed that construction workers skills and knowledge is enhanced through training; all construction workers have an equal opportunity of being trained and workers are given an opportunity to advance their careers. These findings agree with Adebayo (2015) that effectiveness and efficiency can be determined by quality of workers and their quality depends on their skills, personal ability and experience; the occupational skill or different workers trade depends on their profession or training. The study also established that problem solving is highly encouraged between the construction workers and in some instances, workers are assisted in solving some of the problems they encounter. The study also established that construction developers always engage a qualified and NCA accredited contractor in the construction process and always engage a qualified Engineer and Architect in their construction works and work together as one large

team. The findings concurs with Chai & Yusuf (2013) that it is a common phenomenon in big construction companies to employ managers and professional employees who will be responsible for outsourcing of teams. In construction industry, outside sources of employees is common. The findings further disagree with Nyaanga (2014) who carried out a research study and revealed that majority of the contractors lack professional qualification in the fields of engineering and building and construction.

Human capacity had a strong significant positive correlation with compliance to National Construction Authority Regulations. The study also established that variation in Compliance to National Construction Authority Regulations can be attributed to changes in human capacity. These findings concur with Rojas & Aramvareekul (2013) who reviewed factors affecting labor productivity in construction industry in United State of America and revealed that systems and strategies of management and issues of work force were the most significant factors affecting productivity of labor. The study also established that human capacity significantly influences Compliance to National Construction Authority Regulations. The study findings further showed that an increase in human capacity of Private Construction Developers' will cause Compliance to National Construction Authority Regulations to improve. Nahir & Mohan (2017) argued that for a construction organization seeking to achieve sustainable growth in the new business environment, workforce diversity should be embraced.

The respondent also indicated that '*the most important element in production is workforce because it's the only factor responsible for the creation of value and sets overall productivity levels'.* Occupational skill or different workmen trade depends on their profession or training; this therefore affects their level of efficiency and effectiveness.

4.9.4 Culture of Private Construction Developers' and Compliance to National Construction Authority Regulations

The study found that majority respondents disagreed that they are unaware of some the required standards. Majority developers are aware of construction standards. The findings disagree with Elnaz, Ayyoob, Mojtaba, Mohammad & Akito (2012) who in their findings showed that the main reason why contractors failed to meet the construction requirements

was because they were not aware of the standards that are required. The study established that many costs incurred in the registration process leads to non-compliance, and that the regulations are too many hence, one cannot grasp all of them. The study also established that a lot of time is needed for registration hence opting to pay fines; pervasive corruption makes the registration process costly and that the study established that at times the registration approval takes too long hence, projects start without approval. These concur with Padeiro (2016) who found in his study that the main reason why developers decide to undertake projects without being approved is because of the challenges in adhering to the requirements. Their main complaint is with the time, cost incurred before approval of plans, a developer is required to follow with application of paper chase from an office to the next and in the process, and corruption makes the process even more costly. Developer's level of awareness is very important; this is because it contributes to some extent to the level in which individuals are complying with standards and regulations (Owiri, 2011). The study found that policies are not explained well and therefore it is difficult to abide by set down regulations. The study also established that a lot of time is needed for registration hence contactors opt to pay fines.

The study established that culture had a strong positive and significant correlation with compliance to National Construction Authority Regulations. The study also established that variation in Compliance to National Construction Authority Regulations can be attributed to changes in culture. Sarkheyli, Sharifi, Rafiyan, Reza, & Murayama (2012) in their study, examined factors affecting compliance and outlined factors such as income level of developers, awareness level, economic (profit) motives, and established them to have significant level of influence on compliance with building standards. The study also established that culture significantly influences Compliance to National Construction Authority Regulations. The study further established that an increase in culture will cause Compliance to National Construction Authority Regulations to improve. Padeiro (2016) explained that likelihood of deviations from the construction plans tend to increase when the time from plan approval increases.

The respondents also indicated that *'the main reason why they decide to undertake projects without being approved is because of the challenges in adhering to the requirements. Their*

main complaint is with the time and cost incurred before approval of plans'. They explained that they are required to follow with application of paper chase from an office to the next and in the process corruption makes the process even more costly. This therefore contributes to the increased number of regulation disregard.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

In this chapter, the study presents summary of findings, discussion of the findings, conclusion and recommendations made there-to. The chapter also presents areas suggested for further/future studies.

5.2 Summary of Findings

The main focus of the study was to examine the determinants of private construction developers' capacity on compliance to National Construction Authority's regulations. The study adopted descriptive research design and data was collected from private construction developers in Nairobi County using questionnaires. The study selected a sample of 360 respondents but received back only 277 questionnaires dully filled. Subsections below presents summary of findings based on specific objectives of the study which were to; establish the influence of financial capacity of private construction developers' on compliance to National Construction Authority Regulations; determine the influence of technological capacity of private construction developers' on compliance to National Construction Authority Regulations; examine the influence of human capacity of private construction developers' on compliance to National Construction Authority Regulations; and assess the influence culture of private construction developers' on compliance to National Construction Authority Regulations.

5.2.1 Financial Capacity of Private Construction Developers' and Compliance to National Construction Authority Regulations

The study established that out of the 277 respondents who responded: 94.7% agreed that the available financial resources are enough to cover the miscellaneous expenses; 88.7% agreed that the set budget meets all the project expenses and 87.4% agreed that they have the basic financial skills. The study further found that 85.4% agreed that the financial approximations turn out to be correct; 85.4% agreed that they are able to prepare a realistic budget for a project and 83.5% agreed that the acquired funds are able to meet the project

needs. The study also established that 82.8% agreed that the funds are strictly used for the set purpose; 78.9% agreed that misuse of funds lead to uncompleted constructions; and 73.6% agreed that all the utilized funds could be accounted for.

From the correlation analysis, the study established that financial capacity had a strong positive correlation with compliance to National Construction Authority Regulations. Regression findings showed that 35.9% variation in Compliance to National Construction Authority Regulations can be attributed to changes in financial capacity. The study also established that indication that the model was significant in predicting Compliance to National Construction Authority Regulations; financial capacity significantly influences Compliance to National Construction Authority Regulations.

5.2.2 Technological Capacity of Private Construction Developers' and Compliance to National Construction Authority Regulations

The study established that of all 277 respondents, 78.9% of respondents were in agreement that the NCA online application minimizes travelling expenses in case one is far from the NCA offices; 76.9% agreed that they have been using the NCA online application since its inception; and 73.6% agreed that modern construction techniques are adopted in the construction process. The study also found that 73.6% respondents agreed that technology is used in assessing contractors' qualifications and capability; 72.3% agreed that the NCA online application is easy to use; and 71.0% agreed that the problem that leads to low usage of NCA technology is poor network connectivity. Further, 70.3% of respondents agreed that they prefer hiring contractors with the current construction technological expertise and 69.0% agreed that they look for potential contractors to hire in the NCA website. The study also established that 69.0% respondents agreed that they have basic technological knowledge and skills required to interpret construction drawings on site, and another 69% of respondents agreed that the NCA has been advertising and educating people about the online application system.

Correlation analysis findings showed that technological capacity had a strong positive correlation with compliance to National Construction Authority Regulations (r=591). The correlation between the two variables was significant because the p-value obtained (0.000) was less than the selected level of significance (0.05). Regression findings showed that

34% variation in Compliance to National Construction Authority Regulations is attributed to changes in technological capacity. The study also found that the model was significant in predicting Compliance to National Construction Authority Regulations. Further, technological capacity was found to significantly influence Compliance to National Construction Authority Regulations. The study further established that an increase in technological capacity of Private Construction Developers' causes Compliance to National Construction Authority Regulations to improve by 0.382.

5.2.3 Human Capacity of Private Construction Developers' and Compliance to National Construction Authority Regulations

From the 277 responses received, 77.5% of respondents agreed that problem solving is highly encouraged between the construction workers; 74.3% agreed that construction workers knowledge is enhanced through training and development; and 74.3% agreed that construction workers skills are enhanced through training. The study also established that 73.6% respondents agreed that they always engage a qualified and NCA accredited contractor in the construction process; another 73.6% of respondents agreed that all construction workers have an equal opportunity of being trained and 73.6% of respondents also agreed that workers are assisted in solving some of the problems they encounter. Further, the study established that 72.3% respondents agreed that construction workers help their colleagues in improving in their activities; and 70.3% agreed that workers are given an opportunity to advance their careers. 69.7% respondents also agreed that they always engage a qualified Engineer and Architect in their construction works and 69% of respondents agreed that construction workers work together as one large team.

Correlation findings showed that human capacity had a strong significant positive correlation with compliance to National Construction Authority Regulations (r=675). Regression findings established that 45.2% variation in Compliance to National Construction Authority Regulations can be attributed to changes in human capacity. The study also established that the model was significant in predicting Compliance to National Construction Authority Regulations; human capacity significantly influences Compliance to National Construction Authority Regulations. The study findings further showed that an

increase in human capacity of Private Construction Developers' will cause Compliance to National Construction Authority Regulations to improve by 0.363.

5.2.4 Culture of Private Construction Developers' and Compliance to National Construction Authority Regulations

From 277 responses, 82.8% of the respondents disagreed that they are unaware of some the required standards; 80.2% agreed that a lot of costs are incurred in the registration process leading to non-compliance, and 79.5% agreed that the regulations are too many hence one cannot grasp all of them. The study also established that 78.9% respondents agreed that it is difficult to abide by set down regulations; 78.2% agreed that some of the policies are not well explained; and 77.5% agreed that they ensure that registration is done before commencement of the project. The study also established that 75.6% agreed that a lot of time is needed for the registration hence opting to pay fines and 73.6% agreed that pervasive corruption makes the registration process costly. The study also established that 72.9% agreed that it is hard to follow all the needed construction procedures, and 72.9% agreed that at times the registration approval takes too long hence, projects start without approval.

Correlation analysis findings established that culture had a strong positive and significant correlation with compliance to National Construction Authority Regulations (r=504, p=0.000). From regression analysis, the study established that 24.9% variation in Compliance to National Construction Authority Regulations can be attributed to changes in culture. The study also established that the model was significant in predicting Compliance to National Construction Authority Regulations; culture significantly influences Compliance to National Construction Authority Regulations. The study further established that compliance to National Construction Authority Regulations will be at a constant value of 1.087. The study findings further show that an increase in culture will cause Compliance to National Construction Authority Regulations to improve by 0.258 units.

5.3 Conclusions

In establishing the influence of financial capacity of private construction developers' on compliance to National Construction Authority Regulations, the study revealed that financial capacity has a positive influence on compliance to National Construction

Authority Regulations. Based on the study findings, the study concludes that, financial capacity has a positive significant influence on compliance to National Construction Authority Regulations. Regarding determining the influence of technological capacity of private construction developers' on compliance to National Construction Authority Regulations, the study established that technological capacity had a positive influence on financial compliance to National Construction Authority Regulations. The study also established that the influence of technological capacity on compliance to NCA Regulations was significant. Based on these findings, the study concludes that increasing technological capacity results in an increase in compliance to National Construction Authority Regulations.

On examining the influence of human capacity of private construction developers' on compliance to National Construction Authority Regulations, the study established that human capacity was found to have a positive and significant influence on compliance to National Construction Authority Regulations. Therefore, human capacity positively and significantly influences compliance to National Construction Authority Regulations. From the study findings, the study concludes that increasing human capacity will result in an increase in compliance to National Construction Authority Regulations. On assessing the influence culture of private construction developers' on compliance to National Construction Authority Regulations, the study established that that culture has a positive and significant influence on compliance to National Construction Authority Regulations. From these findings, the study concludes that improving culture will result in an increase in compliance to National Construction Authority Regulations.

5.4 Recommendations

Based on the findings of the study and conclusions, the study recommended ways of improving compliance to National Construction Authority Regulations.

i. There is need to ensure there is sufficient financial capacity to ensure that activities in construction site are implemented successfully and work progresses smoothly. There is need for the government to provide finances at affordable rates of interest to constructors. Developers should ensure that they are well trained on financial

management to ensure that budgets are made appropriately and that funds are not misused.

ii. The study also recommends construction developers' to embrace new technology, and ensure that they have knowledge regarding modern management and understand construction process and design; this will enhance management of construction projects. The study also recommends companies that lack technological advancement especially the small construction companies that lack financial abilities of purchasing equipment to facilitate completion of some projects to employ external expertise and hire equipment to allow them complete all their projects and achieve the quality required.

iii. It is the responsibility of the government of Kenya to ensure that all registered constructors and construction workers are qualified this will enhance the quality of construction activities. Qualified contractors are well aware of all the regulations because it is mandatory in their training. The government should also offer training and capacity building to constructors and construction workers and regulate them to ensure that performance of the construction sector is improved.

iv. The study recommends the government to ensure that the process of land approval takes a shorter period and ensure simplicity of the process. There are many bribes asked for during the process, the National Construction Authority should ensure transparency in the process and ensure that individuals found asking for bribes are punished.

5.5 Suggestions for Further Studies

This researcher sought to examine the determinants of private construction developers' capacity on compliance to National Construction Authority's regulations. The study was conducted among construction developers in Nairobi County, the researcher therefore recommends replication of the research study in other counties to facilitate replication and comparison of the research findings. The researcher also recommends a study to be conducted on challenges faced by private construction developers' in complying with National Construction Authority's regulations.

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APPENDICES

Appendix I: Letter of Transmittal

Rachael Ribathi Gichuke,

P.O.Box 5556 – 00200,

Nairobi, Kenya,

September 2019.

Dear Respondent,

RE: REQUEST FOR RESEARCH DATA

I am a student undertaking Master of Arts Degree in Project Planning and Management at the University of Nairobi. As a partial fulfilment for the award of this degree, I am carrying out a research on Determinants of Private Construction Developers' Capacity on Compliance to National Construction Authority Regulations: A Case of Nairobi County. You have been selected to form part of this study and I am therefore inviting you to participate by completing the attached questionnaire.

Participation is voluntary and all information gathered in this study will be treated with extreme confidentiality and findings of this study will be utilized exclusively for academic purposes. If you choose to participate in this study, kindly answer all the questions appropriately and with utmost truthfulness and as honest as possible.

Thank you

Yours sincerely,

Rachael Gichuke

Appendix II: Questionnaire

Kindly fill in this questionnaire objectively by ticking in the appropriate spaces. The information shared herein will be treated with utmost confidentiality and anonymity and shall only be used for purposes of this study.

Section A: Demographic Information

1. Kindly Indicate gender?

   Male ( ) Female ( )

2. How long have you been in the construction industry?

   1-5 years ( )

   6-10 years ( )

   11-15 years ( )

   Above 16 years ( )

3. What is your level of Education

Certificate ( )
Diploma ( )
Undergraduate ( )
Postgraduate ( )

4. Do you understand the National Construction Authority Regulations?

Yes ( ) No ( )

5. Provide some of the National Construction Authority Regulations

……
……
……
……
……

Section B: Compliance to National Construction Authority regulations

6. Indicate your level of agreement on the following statements about the compliance to National Construction Authority regulations. 1-strongly disagree, 2-disagree, 3-moderate, 4-agree, 5-strongly agree

Statements	**5**	**4**	**3**	**2**	**1**
There is rise in developer registration					
Developers are adopting the online registration system					
There is increase in reporting of construction works					
Monitoring has enhanced reporting of construction works					
More construction workers have been accredited					
More developers have been awarded certificates					
Developers adhere to the set construction standards					
The right materials are acquired for construction purposes					
Developers ensure the health and safety measures are adhered					
It is the responsibility of developers ensure safety and onsite review of management plans					

Section C: Financial Capacity

7. Indicate your level of agreement on the following statements about the influence of private construction developers' financial capacity on compliance to National Construction Authority regulations in Nairobi County. 1-strongly disagree, 2-disagree, 3-moderate, 4-agree, 5-strongly agree

Statements	**5**	**4**	**3**	**2**	**1**
I have the basic financial skills					
I am able to prepare a realistic budget for a project					
The set budget meets all the project expenses					
The funds are strictly used for the set purpose					
Misuse of funds lead to uncompleted constructions					
The acquired funds are able to meet the project needs					
The financial approximations turn out to be correct					

The available financial resources are enough to cover the miscellaneous expenses					
All the utilized funds can be accounted for					

8. How else does financial capacity influence the compliance to National Construction Authority Regulations?

……

……

……

……..

Section D: Technological Capacity

9. Indicate your level of agreement on the following statements about the influence of private construction developers' technological capacity on compliance to National Construction Authority regulations in Nairobi County. 1-strongly disagree, 2-disagree, 3-moderate, 4-agree, 5-strongly agree

Statements	**5**	**4**	**3**	**2**	**1**
I look for potential contractors to hire in the NCA website.					
Technology is used in assessing contractors' qualifications and capability.					
I prefer hiring contractors with the current construction technological know-how					
I have basic technological knowledge and skills required to interpret construction drawings on site.					
Modern construction techniques are adopted in the construction process					
I have been using the NCA online application since its inception					
The NCA online application is easy to use					
The NCA online application minimizes travelling expenses in case one is far from the NCA offices					
The problem that leads to low usage of NCA technology is poor network connectivity					

The NCA has been advertising and educating people about the online application system					

10. How else does technological capacity influence compliance to National Construction Authority regulations?

……

……

……

……

Section E: Human capacity

11. Indicate your level of agreement on the following statements about the influence of private construction developers' human capacity on compliance to National Construction Authority regulations in Nairobi County. 1-strongly disagree, 2-disagree, 3-moderate, 4-agree, 5-strongly agree

Statements	**5**	**4**	**3**	**2**	**1**
I always engage a qualified and NCA accredited contractor in the construction process					
Construction workers skills are enhanced through training					
Problem solving is highly encouraged between the construction workers					
Construction workers help their colleagues in improving in their activities					
Construction workers knowledge is enhanced through training and development					
The construction workers work together as one large team					
All construction workers have an equal opportunity of being trained					
Workers are given an opportunity to advance their careers					
I always engage a qualified Engineer and Architect in my construction works.					
Workers are assisted in solving some of the problems they encounter					

12. How else does of human capacity influence compliance to National Construction Authority regulations?

.....

.....

.....

Section F: Culture

13. Indicate your level of agreement on the following statements about the influence of private construction developers' culture on compliance to National Construction Authority regulations in Nairobi County. 1-strongly disagree, 2-disagree, 3-moderate, 4-agree, 5-strongly agree

Statements	**5**	**4**	**3**	**2**	**1**
I ensure that registration is done before commencement of the project					
At times the registration approval takes too long hence projects start without approval					
The regulations are too many hence one cannot grasp all of them					
Some of the policies are not well explained					
It is hard to follow all the needed construction procedures					
I am unaware of some the required standards					
It is difficult to abide by set down regulations					
A lot of costs are incurred in the registration process leading to non-compliance					
A lot of time is needed for the registration hence opting to pay fines					
Pervasive corruption makes the registration process costly					

14. How else does organizational culture influence compliance to National Construction Authority Regulations?

……

……

THANK YOU

Appendix III: Research Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **847626**

Date of Issue: **15/October/2019**

RESEARCH LICENSE

This is to Certify that Ms.. RACHAEL GICHUKE of University of Nairobi, has been licensed to conduct research in Nairobi on the topic: DETERMINANTS OF PRIVATE CONSTRUCTION DEVELOPERS' CAPACITY ON COMPLIANCE TO NATIONAL CONSTRUCTION AUTHORITY REGULATIONS ; A CASE OF NAIROBI COUNTY for the period ending : 15/October/2020.

License No: **NACOSTI/P/19/1925**

847626

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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OPEN, DISTANCE AND e-LEARNING CAMPUS
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DEPARTMENT OF OPEN LEARNING
NAIROBI LEARNING CENTRE

Your Ref:

Our Ref:

Telephone: 318262 Ext. 120

REF: UON/ODeL/NLC/31/223

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

27th September, 2019

TO WHOM IT MAY CONCERN

RE: RACHAEL RIBAHI GICHUKE - REG.NO. L 50/8559/2017

The above named is a student at the University of Nairobi, Open Distance and e-Learning Campus, School of Open and Distance Learning, Department of Open Learning pursuing a Masters course in Project Planning and Management.

She is proceeding for research entitled *"Determinants of Private Construction Developers' Capacity on Compliance to National Construction Authority Regulations: A Case of Nairobi County."*

Any assistance accorded to her will be appreciated.

UNIVERSITY OF NAIROBI ODEL CAMPUS
P.O. Box 30197,
27 SEP 2019
NAIROBI
NAIROBI LEARNING CENTRE

for

CAREN AWILLY
CENTRE ORGANIZER
NAIROBI LEARNING CENTRE