

Influence Of Contractors Management Practices On Performance Of Housing Construction Projects In Kisii County, Kenya

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Abstract: Management practices that should ensure projects performance such as planning strategies, conformance to construction standards, design implementation, and effective financial management which are normally not followed hence the reason why projects perform poorly especially in the housing industry. In the past, there have been increased cases of houses collapsing across the country and specifically in urban areas such as Kisii County leading to loss of properties and lives. Performance of housing projects is expected to be good if constructions are done in conformance with specific standards, being of good quality, completed in time, and meeting clients' needs. However, the fact that houses are constructed through the use of improper time-frames from expected, poor materials, as well as inadequate planning affects overall quality of the projects. This study was to investigate how contractors' management practices influence housing projects performance in Kisii County. The study's specific objectives included investigating the influence of contractors' planning strategies, compliance to industry standards, design implementation, and contractors' financial management practices on housing construction projects performance in Kisii County. The study employed a descriptive study design. The target population was the 206 registered contractors in Kisii County from where a sample of 136 respondents was taken through simple random sampling approach. A questionnaire was used to collect data and the data obtained was cleaned, sorted and organized using SPSS application. Descriptive and inferential statistics were used to analyse data for the study. Descriptive statistics used included percentages, frequencies, mean and standard deviation. Reliability of data collection instrument was measured by Cronbach Alpha and researcher ensured the 0.7 threshold was achieved. Multiple regression analysis was applied to show the relationship between the variables guiding the study. The results obtained showed that housing construction projects are affected by contractors' management practices which include planning practices, conformance to industry standards, implementation of designs, and financial management practices respectively which were found to have a positive influence on projects performance. Based on the findings, several recommendations were made. It was recommended that contractors in the county should ensure that planning strategies are strictly adhered to. It was also recommended that frequent monitoring should be done to ascertain if industry standards are followed in constructions. It was also recommended that design implementation be given much attention. Further, it was recommended that financial management practices be given much attention. Finally, the researcher recommends future studies to focus on the influence of government authorities in performance of construction projects. The possible beneficiaries of the study include academicians in the field project performance, contractors, as well as policy formulators.

Keywords: Project Performance, Housing Construction Projects, Management Practices, Project Management, Planning Strategies, Financial Management

I. INTRODUCTION

constructed and performance has been an issue in the recent past (Rose, 2014).

A. BACKGROUND TO THE STUDY

Construction projects are common in all places and its performance is of great concern to different stakeholders. Kisii County just like other counties in Kenya has many houses

a. PROJECT PERFORMANCE

Performance can be viewed from the time they take to completion, cost of completion with regard to the budgeted

cost, and overall quality of the projects (Dominic and Nick, 2016). Housing Project performance involves the act of measuring the attainability of several objectives which occasionally can be at odds due to the changing conditions in construction (Young, 2013; Choudhry, 2016). The main aim is striving towards the success of the project (Singh, 2011). Schedule as one of the project performance indices is the timing and succession of various tasks within a project and it mostly consists of tasks, their durations, constraints, dependencies and information on the time-oriented project (Price, 2011; Ottosson, 2012). Cost as per Singh (2011) is the estimated budget plan of a project and the measure of the expense efficiency exhausted on a project. Normally the performance used to get the cost performance index is by finding the ratio of earned value by the actual costs (Urizah, 2011; Yellamraju, 2011). Quality performance index, as a performance indicator, is a consistency measure in the implementation of project procedures and standards as well as the projects specification compliance (Svane, 2012; Uher and Loosemore, 2014). Safety performance index is a measure on how the site activities can be carried out safely without any loss of life (Low, 2018; Cheng and Wang, 2016; Jha, 2011).

Measuring project performance is a critical factor in optimizing performance of any kind of projects (Nalewaik and Mills, 2016; Nohe, 2010). There have been circumstances where buildings have collapsed globally in some countries such as India and as a result many lives and properties have been lost (Choudhry, 2016). Some of the reasons associated to housing construction projects that have collapsed include failure from the part of the owners, builders and government agencies to ensure adequate procedures and standards are followed (Kloppenburger and Patrick, 2012; Miloseric and Martinelli, 2015). Most of the incidences have also happened in the poverty stricken areas where people use substandard building materials to put up structures, hence causing sub-optimal performance of the housing construction in general (Kerzner, 2013; Rumane, 2012). Project performance, on the surface, seems easy to measure; just track time, cost and scope and it's done (Carol, 2015). But when we look more deeply we find that it is not that simple (Vanhoucke, 2010; Alleman, 2014).

Owing to the significance of housing construction projects in any society, it is absolutely important to assess quality throughout the lifecycle of the projects (Julian, 2013; Hill, 2010). Housing construction projects are very critical in any economy since they have a direct impact to the society members as well as properties that are either valuable or sensitive in nature (Karimi, 2016; Fox and Walt, 2010). In this regard, it is a matter of greater concern that global private developers and constructors as well as government authorities can harmoniously work together to ensure that the quality of constructions, both for private use as well as public use, is of the best superiority by following appropriate standards (Kassel, 2016; Wernham, 2012).

Essentially, there are a number of different sources of quality measures and standards that can be applied in housing construction project management by contractors (Mthethwa, 2016). Such measures and standards include and are not limited to; local authorities' regulations on housing and urbanization, national provisions on safety requirements for

constructions, and global best practices among others (Thuita, 2017). Irrespective of the adopted policies, the bottom line is that all these provisions are specific in terms of what the requirements are in ensuring that construction projects are well executed, and that the final outputs of such projects is suitable for use without any potential risk to the users in the long-run.

b. CONTRACTORS MANAGEMENT PRACTICES

Contractors' management practices are the abilities of the contractors to identify all the tasks which are necessary to complete the project successfully (Egbu, 2015). This is the planning function, and always a contractor should understand the key practices, such as planning before work not during work, before embarking any housing construction project. Results for a well-planned project are; finishing the project on time, little or no confusion and integration of all work to ensure a quality project to the owner (Zhao, 2015). Design implementation is another management practice which involves the execution of the plan idea into a real project. According to (Egbu, 2015) it involves carrying out all the tasks listed in the work plans. It involves high level monitoring of the project execution and results, preparation of annual reports, continuous operational and strategic performance, undertaking surveys to determine any change or impact, allocation of resources correctly and ensuring there is smooth flow of the construction activities.

Financial management practices mostly cover the behavioural aspects of execution, managing and monitoring the performance of the project and the management process (Chiu, 2016). It deploys the available various techniques and tools in the industry to help implement the construction plan (Nalewaik, 2014). The successful execution strategy normally entails various disciplines, resource allocation, areas of capability, funding, revenue and cost management, utilization of aspects, managing the project objectives, and monitoring the performance (Baylis, 2010). Further, industry specific standards are quality management standards written down, based on the ISO 9001, to be followed by all industries. They provide a list of requirements to control monitor and improve a product's or service quality. For a suggested construction of a residential home, they normally contain, three sub-sections, the observation which is a brief statement of the current issue, the quality standard which is the suggested standard relating to observed issue which helps in improving performance, and the repair responsibility which normally is a statement consisting of corrective action required by the contractor (Paul, 2012). For instance, if the cabinet doors do not align properly, a space between the door butts is recommended not to exceed 1/8" and the repair responsibility, the builder is to repair if the above conditions shall exceed acceptable tolerance (Vanhoucke, 2016).

Adaptability to changes amidst the project implementation is more important and it leads to adaptability which provides better customer focus (Howard, 2010). Changes can come about when the design is approved but the general contractor knows that at some point there are inevitable delays. Another practice is the leadership skill (Asiedu, 2012) in which case a contractor uses this skill to

help in finding the best subcontractors and workers in the project implementation. For the achievement of quality workers, qualified personnel are required in the planning stage. The ability of the contractor to communicate well is of great importance in the timely completion of the project. Conversing well to all the parties involved in the process, occasionally leads to less misunderstanding, transparency, increased accountability and quality work (Babatunde, 2015). Last but not least is the technical skill of the contractor. Contractor's ability to understand and apply knowledge in the field normally helps out in the timely completion of the project (Walker, 2015). The key performance indicators as far as civil engineering is concerned are safety, construction cost, time, defects, client satisfaction and profitability.

Many organizations and countries strive to achieve competitiveness and conformance to quality standards as contained in ISO certification on various levels such as "ISO 21500:2012, Guidance on project management" which is among the newly established standards on global standards (Jean, 2017). The ISO certification is intended to create harmonious ground from which quality assurance departments can assess projects in various institutions and governments; hence promoting the best global practices in project management (Kerzner and Learning, 2013). Different countries in the world have successfully implemented some of these standards and have consequently had tremendous improvements and performance (Wan and Zeng, 2013). For instance, an assessment of the critical success factors in project management that focused on Australia revealed that indeed the global standards are instrumental in ensuring effective and successive project execution and management (Paul and Derek, 2010). Some of the other countries perceived to have effective project management practices in the world especially in construction industry include China, Canada, USA, UK, and Singapore among others (Doz and Wilson, 2012; Liviu, Emil and Natalia, 2011).

In Africa, quality management and practices especially in housing and construction industry has been criticised many times in the modern society (Agbenyega, 2014). Some of the factors behind poor performance of housing projects in terms of quality have been associated with inability for the stakeholders to cope up with changing technology and social dimension (Agbenyega, 2014). Many of the management practices used to support construction organizations are being challenged. The industry's clients are moving forward and demanding improved quality service, faster project delivery and innovations in technology, which is an upheaval task among the builders owing to the poor state of technology being adopted (Agbenyega, 2014). However, at the core of all problems facing African states, a research conducted in 2014 revealed that most contractors such as those in Ghana deliberately do not follow the laid down quality standards in undertaking their work, a fact that jeopardizes the quality of the resulting projects (Agbenyega, 2014; Orji et al., 2016).

In the Kenyan context, quality in housing construction projects is supported by the policies as stipulated by the Ministry of Lands, Housing and Urban Development (Bent, 2012). Nevertheless, stakeholders especially project managers are more often than not concerned with the time frame a project would take rather than focusing on quality and

conformance with the laid down dictates and procedures (Nyambura, 2015). While putting more emphasis on quality, this is not being oblivious of the fact that completion time for a project is of paramount importance as far as project contracts are concerned. And in many cases, the inability of the client, his/her representative, and the project team to have a comprehensive overview of the construction process from inception to completion is a very likely reason for the non-realization of projected delivery dates (Nyambura, 2015; Githenya and Ngugi, 2014). However, it is stated that if project managers and implementers are able to follow the four basic components of quality management (planning, assurance, control, and improvement), then chances of realizing timeframe goals are high and not compromised as most people think (Atamba, Wambugu and Wanyoike, 2016).

c. CONTRACTORS MANAGEMENT PRACTICES AND PROJECT PERFORMANCE

Management practices are determinants of project performance more importantly in the construction industry. A publication by the Global Knowledge White Papers on "tools and techniques useful in quality planning, assurance and control of projects" asserts that indeed project management practices and project performance have a close relationship. The author puts more emphasis on the fact that project quality management practices irrespective of the industry in which it falls consists of three primary processes which include: planning of quality management by identifying the quality requirements and standards for the project and product (planning process group); performing quality assurance procedure by auditing the quality requirements and quality control results to ensure that appropriate quality standards are used (executing process group); and controlling quality through monitoring and recording the results of quality activities to assess performance and recommend necessary changes (monitoring and controlling process group). From these arguments, it dawns clearly that there are three important stakeholders to determine the overall performance of a project (planning group, executing group, and the monitoring group). Essentially, all the groups must be able to work together by clearly identifying their responsibilities in promoting housing construction projects globally (McClintock, 2016).

As a matter of fact, project performance cannot be achieved without contractors ensuring that quality standards are upheld to the latter. Project performance is the overall attainment of project goals right from the commencement to the completion period. Some of the basic parameters to measure the performance of a project especially in housing construction include having quality buildings, buildings which are completed in time, within the budget costs and also which are fit for use by human beings. Countries in Africa are struggling to ensure that most of their internal projects are of good quality and in accordance with globally established standards (Knapp, 2010). Primarily, this involves the adoption of safety measures in order to ensure that in the long-run, lives are not lost, and properties are safeguarded adequately (Bent, 2012). Nevertheless, due to the fact that most of the African countries are less developed, there are constant challenges faced such as poor governance, insufficient capital and other

resources, among other limitations (Project Management Journal, 2013). Regardless of these challenges, some countries such as South Africa, Seychelles, Gabon, Libya, Algeria, Mauritius, Tunisia, Egypt, Namibia, and Botswana have been reported in the past to have had a number of successful projects locally run with minimal assistance from foreign governments such as China and Japan (Ama and David, 2016). It therefore implies that quality in project management does not fundamentally depend on the basis of a country being a developed or developing country (Raji and Firas, 2011).

d. CONSTRUCTION PROJECTS IN KISII COUNTY

Housing Construction Projects in Kisii County are faced with a number of challenges just like in many parts of the country due to the rampant collapsing of structures as witnessed in the recent past. In the past one decade, a number of houses have been reported that have collapsed specifically in Kisii town which is the headquarters of Kisii County leading to massive loss of properties and lives respectively. Such buildings are said to be collapsing due to the fact that they were considered to be of poor quality although measures to rectify these mistakes were not undertaken in good time. This then leads to the main question as to why such measures are not put in place by the County Government owing to the fact that devolution provides the county governments the powers to do so (Ama and David, 2016).

Poor governance, corruption, unclear procedures, improper acquisition of building materials, and lack of skills can be some of the reasons behind this menace. Additionally, it is generally established that in case of poor M&E, projects obviously do not succeed irrespective of whether they are for governments or non-government organizations (NGO's). Ideally, it is therefore of great value that governments; whether local or national, are vigilant in all the processes that are critical to project management (PM). It is in this foundation that other factors affecting quality of projects at county level such as; failure to follow outlined procedures and standards, failure to undertake appropriate feasibility assessment, poor execution procedures, and lack of adequate monitoring and evaluation due to manipulation and corruption ought to be investigated to what impact they affect county government projects performance (Raji and Firas, 2011).

B. STATEMENT OF THE PROBLEM

Housing project performance issues that are rampant in Kenya include completing constructions that use more materials than planned for, increased complains from owners to contractors, increased cases of collapsing houses, projects that take more time to completion than expected, and increased number of houses being earmarked for demolition by NCA and NEMA (Peninah and Moses, 2015; Choudhry, 2016). In housing construction projects, contractors are the ones with a mandate of ensuring that houses built conform to required standards, are of good quality, are completed in time, and meet the clients' needs as well as legal requirements (Lester, 2014). However, there have been increasing number of cases in Kenya where various projects and specifically in the construction industry have been reported for being of poor

quality (Peninah and Moses, 2015). The main reason associated to this concept is the sub-standard constructions that either use improper time frame as expected, poor materials which are issues of procurement, inadequate planning for human resources during the project developments, as well as the overall project planning and monitoring (Keating, 2013). In overall, this affects the quality of the projects and which is so far the main focus of this research. In this regard, this study's purpose was to evaluate how contractors' management practices such as: planning procedures, implementation of the approved designs, adherence to construction industry standards and financial management practices generally affect the performance of housing construction projects in Kisii County.

The purpose of this study as articulated was to focus on the factors that affect performance of housing construction projects which are undertaken in Kisii County. Such knowledge gap attracted the attention of the study and therefore it sought to evaluate how contractors' management practices on housing construction projects have contributed towards the poor performance of housing construction projects in the County.

C. STUDY OBJECTIVES

a. GENERAL OBJECTIVE

The general objective for this study was to investigate the influence of contractors' management practices on performance of housing construction projects in Kisii County, Kenya.

b. SPECIFIC OBJECTIVES

The study was guided by the following specific objectives;

- ✓ To investigate the influence of planning strategies on performance of housing construction projects in Kisii County, Kenya.
- ✓ To determine the influence of conformance to construction standards on performance of housing construction projects in Kisii County, Kenya.
- ✓ To establish the influence of design implementation on performance of housing construction projects in Kisii County, Kenya.
- ✓ To determine the influence relevance of financial management practices on performance of housing construction projects in Kisii County, Kenya.

c. RESEARCH QUESTIONS

- The study sought to answer the following questions;
- ✓ What is the influence of contractors' planning strategies on performance of housing construction projects in Kisii County, Kenya?
 - ✓ What is the influence of conformance to construction standards on performance of housing construction projects in Kisii County, Kenya?

- ✓ What is influence of design implementation on performance of housing construction projects in Kisii County, Kenya?
- ✓ What is the influence of contractors' financial management practices on performance of housing construction projects in Kisii County, Kenya?

D. SIGNIFICANCE OF THE STUDY

The study will contribute to different groups in society such as academicians, policy formulators on issues of project management especially in the public sector. The academicians will benefit because the research's results are very critical in validating the theoretical framework that exists on project management or even establishing new theories on housing projects management. Such a benefit is very important especially in identifying gaps that need to be focused on while conducting future studies on the topic. Policy formulators in county governments will benefit through this study by identifying important areas that ultimately need greater attention in order to make public projects successful. The study will also benefit the National Construction Authority (NCA) in identifying the factors that cause poor housing projects in county levels hence being able to come up with mitigating measures to avoid accidents associated with sub-standard housing constructions. Finally, the study will add incredible knowledge to the existing knowledge of public administration that can help the publics to understand relevant procedures in project management, which can in turn help constructors and other private project specialists in different fields that are usually contracted in ensuring that quality of houses constructed are fit for purpose and in accordance with quality assurance standards.

E. SCOPE OF THE STUDY

The study focused on Kisii County by identifying 136 contractors who are involved in the construction of housing projects. The study sought to find out the exact project management practices employed by contractors towards ensuring that housing projects are actually successful. Further, it was imperative to determine the performance metrics that contractors use to measure the overall performance of housing projects, and compare this with the standardized approaches. The research also sought to determine the level of influence the specific practices have and if they are in accordance with the stipulated standards on construction projects. The 136 respondents reached were required to fill questionnaires as the study employed descriptive approach by using semi-structured questionnaires in collecting the relevant data.

F. LIMITATIONS OF THE STUDY

In research, limitations refer to the factors that can hinder the overall success of a research work and of which the researcher does not have control over. For this research, the following are some of the envisaged parameters that potentially affected the overall conduct of the research: unresponsive respondents who were difficult to persuade in giving responses as they thought that they are being

investigated; the level of honesty from the respondents as well was not controlled by the researcher. Nevertheless, the researcher tried to put in place approaches to minimize the potential impact of the factors which included appropriate planning and employing of short questions to motivate the respondents to provide honest responses respectively in addition to assuring them of their confidentiality.

G. ORGANISATION OF THE STUDY

This research project is organized in five chapters. The first chapter elucidates the background to the study, the objective, questions, significance, scope and limitations of the study. The second chapter provides a detailed review of literature in order to appreciate previous studies and theories on the topic. The third chapter gives the methodology adopted by the researcher, in data collection and analysis and well as presentation. The fourth chapter presents the findings of the study after data analysis as well as discussions of the outcomes with relation to reviewed literature. The fifth chapter gives the summary of the findings, conclusions and recommendations both for improvement and further studies respectively.

II. LITERATURE REVIEW

A. INTRODUCTION

This chapter provides a detailed review of existing literature concerning the topic under investigation. Specifically, the chapter will present a theoretical review, an empirical review, summary of the related literature and research gap, and a conceptual framework respectively.

B. THEORETICAL REVIEW

A theoretical review sub-section helps the researcher to evaluate various theories and models that contribute greatly to the topic of the study. Since the topic being investigated is on the influence of quality control practices on housing construction projects performance, theories on project management were reviewed. The theories that included are; Total Quality Management model, Project Management Competency Theory, Control Theory, and Management by Objective Theory respectively.

a. PROJECT MANAGEMENT COMPETENCY THEORY

Competency theory was established in 1980 from the works of Henry Gantt and Henry Fayol and was defined as the underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation (Turner, 2003). Ideally, competency based is a technique in which organizations are concerned with the identification of how they can achieve high performance for a given significant period (Aucoin, 2007). In this regard, fitness is for the most part acknowledged, notwithstanding, as learning, aptitudes, mentalities and

practices that are causally identified with predominant project execution techniques (Morris and Pinto, 2010). Ideally, the theory is concerned with having the right leadership and resources that can facilitate adequate implementation of plans within the quality standards (Nicholas and Steyn, 2010). Leaders (project managers) must be able to plan in advance, motivate team members, and provide environment that will ultimately make it possible to have quality products (Curlee and Gordon, 2011). This theory has gained support from different researchers such as Nicholas and Steyn (2010), although some criticisms have been put forward by other scholars such as Morris and Pinto (2010) who maintain that it is not focusing on project execution in totality.

In the context of housing construction projects, the theory can be used to imply that personnel with competent or trained skills should be used under leadership that is visionary and objective (Hartley, 2008). The theory is therefore relevant to the current study as it brings forth the ideology that contractors should actually plan adequately in ensuring that the labour skills needed are obtained before the commencement of housing construction projects. By doing so, they will avoid circumstances where lack of enough skilled personnel leads to temporary stoppage of construction work hence affecting the performance of the projects (Marnewick, Erasmus and Joseph, 2016). This theory has been utilized by both Idoro (2012) and Kamau & Mohamed (2015) in their studies on project performance respectively.

b. CONTROL THEORY

Control theory uses the notion of modes of control to describe all attempts to ensure that individuals in organizations act in a way that is consistent with organizational goals and objectives (Jha, 2000). The concept of control was developed by great thinkers, Travis Hirschi and Walter Reckless in the late 1960s and early 1970s and it is based on the premise that the controller (project leader) and the one being controlled (project team) have dissimilar interests (Colombini and Zuily, 2010). These diverse interests will be overcome by the controller's modes of control (Lessard and Lessard, 2010). Modes of control may distinguish between formal and informal mechanisms (Doyle, Francis and Tannenbaum, 2013). Formal modes of control are defined as behavior control and outcome control as stipulated in this theory and supported by Drigani (1989). Behavior control consists of articulated roles and procedures and rewards based upon those rules. Outcome control is mechanisms for assigning rewards based on articulated goals and outcomes (Cole and Stafford, 2015). The informal modes of control are carried out by the control modes labelled as clan and self. Clan are the mechanisms of a group sharing common values, beliefs, problems, and these mechanisms work through activities as hiring and training of staff, socialization etc. Contrary to the proposers of the this theory, it is maintained that the control mode of the self is about individually defined goals and can be carried through the mechanisms of individual empowerment, self-management, self-set goals, and many more ways (Melton and Smith, 2009).

Applying this theory to the context of project management and more importantly to quality management in

housing construction projects, it can be identified that there are a number of parties in the projects. Such parties or stakeholders may include owners of buildings (private developers), regulating authorities (national and county governments), contractors (builders), and tenants (end-users) (Mubarak, 2013). In this regard, the contractors are charged with responsibilities of ensuring that all the interests of various parties are controlled in a manner that does not hinder the overall project performance. Generally, different interests should be balanced so as not to compromise quality due to conflicts.

c. GOAL SETTING THEORY

The theory of Goal Setting is closely related to Management by objective model in the sense that it allows project executors to concentrate on achieving high-quality of the projects. The theory basically refers to goals being set for the future for subsequent performance of an individual or organizations (Pride *et al.*, 2010). The pioneer of goal setting theory Edwin Locke states that when individuals or organizations set more difficult goals, then they perform better. This theory by Locke was developed inductively after studying the psychology of organizations and industries over the years. It is based on 400 laboratory and diverse field studies. When a person or organization is committed to achieving goals and do not suffer from any conflicting goals. Then, the achievement of the goal is positive.

Management by Objective model also is a widely used concept in project management that was proposed by Peter Drucker in 1954 (Pride, Hughes and Kapoor, 2010). The model anchors on the foundations that organizations should employ a strategy of defining the goals they want to achieve and then convey the same to team members in order to be able to have a sense of direction. It is basically creating a road-map that will be followed by every member of an organization towards goal realization (Kreitner and Cassidy, 2011). The theory has also been referred to as Management by Results (MBR), hence making the entire team to be results oriented. The most important advantage of this theory is that it allows managers to come with several objectives, then prioritise the ones they want to be achieved first, hence enabling the team members and the entire project to achieve goals step by step in a sequence-like manner (Locke and Latham, 1990). It enhances calmness among group participants and promotes overall integration of efforts that enhance quality. As a matter of fact, the theory is applicable to the study in which the main concern is how to have the parties involved in housing construction projects to plan and prioritize goals which are tailored towards ensuring that quality control practices are encouraged and upheld at all times (Rauch, 2007). Both management by objective and goal setting theories have gained support by researchers such as Babatunde (2015), although some criticisms exist from scholars such as Kreitner and Cassidy (2011) whose opinion indicates that creation of direction is the main function of these theories as opposed to total quality management framework.

In connection to housing construction projects quality management, the theories provide that all members in a society must be able to work together in order to avoid conflict

of interests, and then focus on ensuring that constructions are of quality standards and hence safer for human use. The trend in the Kenyan society especially in Kisii County where the study is set can be used to explain these theories from the opposite perspective. For example, if the quality of building projects is not met resulting to collapsing of structures before their lifetime ends; it means that there are conflicting ideas and interests that generally compromise quality. In this case, it is important that society especially relevant authorities and stakeholders must have clear goals of what should be achieved and such goals must not be against the stipulated standards of construction qualities (Kreitner and Cassidy, 2011). These theories that have been reviewed have provided rich information on the concept of quality control practices on housing construction projects performance that will be used to inform the subsequent sections and conduct of the research.

d. TOTAL QUALITY MANAGEMENT MODEL

This model is founded on the premise that organizations must endeavour towards ensuring that they constantly add value by upholding quality standards in all projects they run (Oakland, 2003). Specifically, the model originated from the Japanese industry in which case Japan was able to produce high quality products at competitive prices (Nigam, 2005). TQM, in the form of statistical quality control, was invented by Walter A. Shewhart. It was initially implemented at Western Electric Company, in the form developed by Joseph Juran who had worked there with the method (Rogers, 1996). In this regard, other economies started borrowing this strategy with an aim of providing their customers with high-end or high-quality services and products to their customers (Bank, 1992). It therefore encompasses all the strategies undertaken by an organization in trying to ensure that there is a favourable environment that can support continuous improvement in the ability to high-quality products. The model is applicable to many industries such as in manufacturing, service, and so forth. It basically builds on the concept of other previously developed quality control techniques which are customer-based models.

The model operates on three basic principles which are; firstly, it requires everyone in the organization (project) to be completely involved and it covers all organizational activities, secondly it requires that the standards are set by customers and that all practices conform to those requirements, and thirdly it also requires that quality is monitored and controlled for optimum results to be achieved (Westcott, 2013). The model further provides ten steps that can be used to enhance quality of projects which include; defining the problem, developing new strategic thinking, knowing the customer, determining quality requirements, planning for contingency, reducing waste, developing a continuous improvement strategy, reducing possible variations, balancing the approach, and applying the improvement process respectively (Rogers, 1996). The model's main supporters include Kreitner and Cassidy (2011) based on this focus of various dimensions in project management although Babatunde (2015) gives an opinion that it is more complicated than management by objective and goal setting theories that operate by giving clear directions.

This model is relevant to the current study especially in focusing on quality of housing projects if the three principles and ten steps are followed to the latter. For instance, it is imperative that for housing construction projects to be in accordance with quality standards, all the stakeholders should be involved in all activities, then standards to be determined by clients as well as in accordance with laid down policies such as international and local standards, and also that there is monitoring and controlling of quality throughout housing construction project life-cycle (Alexis and Linda, 2016).

C. EMPIRICAL REVIEW

a. PLANNING STRATEGIES AND PROJECT PERFORMANCE

Raji and Firas (2011) suggested that quality planning and control should be the most critical parameter that project managers should consider especially in construction projects. In their study on "implementation of quality management concepts in managing engineering project sites", the authors state that Quality Management should be the guideline towards meeting the owner's requirements or compliance with the set standards and specifications. The authors employed a descriptive research design in surveying 20 construction companies in Jordan. The main recommendations and conclusions made by these authors is that construction companies should employ quality planning as a competitive strategy towards ensuring that they are associated with high quality projects in order to get more referrals in their business engagement. The study's main limitation is based on the fact that it focused on total quality management (TQM) as the only indicator that should be considered, without incorporating other elements of ensuring safety housing. Further, the study's focus was also on the basis of competitiveness as opposed to reducing high rates of collapsing houses in urban centers respectively.

A study by Liviu, Emil and Natalia (2011) on the best practices in project management conducted by the adoption of case study methodology focused on overall performance and goal attainment of projects. The study explored various best practices available in project management and established that one of the key practices is quality planning and control. The authors asserted that best practices or guidelines have evolved due to technological advancements and need to have projects whose ultimate end meets specified goals and expectations. Nevertheless, the researchers noted that unfortunately people do not follow those laid down strategies and practices resulting to poor quality projects that are costly to the clients, users and society at large. The research's main weakness is due to the fact that it concentrated on project performance on a general context as opposed to exploring building industry where houses constructed are collapsing at a higher rate despite the fact that there are proper quality control and planning guidelines in place.

A study by Bent (2012) on quality control planning and due diligence in project management was carried out focusing on housing projects. The study employed a qualitative approach to investigate the theories of quality control and their applicability as far as project management is concerned. It was

established that quality control should be used as the basis of making project decisions as opposed to fallacious models such as cost-benefit analysis and environmental impact assessment among others. The researcher emphasized that quality control and due diligence are the fundamental objectives that can ensure projects irrespective of the industry in which they are undertaken meet the specified standards and hence cannot be termed as sub-optimal after completion. Moreover, the researcher recommends that housing projects specifically should be handled with due diligence because the aftermath consequences are dire especially in lives and properties. Despite these contributions, the study did not however explore the specific quality measures and due diligent practices that project managers in housing construction should follow.

A study by Agbenyega (2014) on quality management practices of building construction firms using a qualitative approach established that in the recent past, building or construction industry is criticized on the basis of poor planning and performance when compared to all other industries in the economy in any country. The researcher asserts that, with the turn of time, it appears that the construction industry is going through an intense period of introspection, which is worsened by increased technological and social change. It is conceivable from the researcher that although a lot of criticism is put on project management practices with regard to quality planning and control, the main basis of the problems experienced especially in housing construction projects is the ever changing and dynamic platforms socially and technologically. Critically, the study is ideally weak because the fact that technology and social dimensions are changing in society does not necessarily imply that projects have to be of poor quality or quality planning should not be followed. Therefore, the author has not shown how social and technological changes are associated with poor performance of projects in terms of quality.

An exploratory survey methodology-based study was conducted by Karimi (2016) on construction projects planning and performance. The researcher focused on the factors affecting or influencing performance of projects globally with specific focus planning. From the study, the researcher classified factors affecting performance into four which are project participant related factors, organizational tactics and strategies, environmental factors, and project characteristic factors which were all grouped under planning. Karimi put more emphasize on project characteristics in which case quality planning and control was a key parameter. As a result, the study concluded that project leaders or managers are the ultimate determinants of the project characteristics and should seek to ensure that quality planning and control is given priority in their management practice. Although the study is considered an important contribution to the current study, it is however limited to the fact that its scope was basically limited to performance in terms of profitability as opposed to fit for purpose which is the main concern of the current study.

b. CONFORMANCE TO CONSTRUCTION STANDARDS AND PROJECT PERFORMANCE

A study by Githenya and Ngugi (2014) on assessment of the determinants of implementation of housing projects in

Kenya was undertaken utilizing a descriptive design. The study concluded that the specific factors affecting project performance and leading to an alarming rate of house demolition, collapsing, and uninspected houses in various towns in Kenya is due to poor quality planning and control where industry standards are not followed to the latter. Similarly, McClintock (2016) affirms that construction industry specific standards should be used as key parameters that can promote project performance as important tools and techniques which are useful in quality planning, assurance and control respectively. The study did not however focus on contractors who are the main focus in this study.

In addition, Nyambura (2015) also observed in her qualitative research that failure to follow industry specific standards and government guidelines leads to delay of construction projects. More importantly, the author noted in her study on factors influencing completion of projects in Kenya that there are increasing cases where houses being constructed across the country have been earmarked as not suitable for having not followed construction standards. As a result, such projects take a considerable amount of time without being constructed leading to further worsening their conditions, and suddenly they end up being completed without rectifying initial noted problems, due to collision and corruption with relevant authorities. Eventually, after a short period these are the same houses which are noted to have collapsed leading to fatal deaths and loss of properties across the country. Nevertheless, the researcher did not show the relationship between completion period and quality of houses with regard to industry specific standards on project performance.

A study by Orji, Obodoh and Onoh (2016) on quality management practices on construction drew attention to construction industry standards in place and how builders follow them to deliver quality projects. The study found out in its qualitative research that most contractors do not follow all the laid down procedures and standards and prefer shortcuts through corrupt means and this ends up jeopardizing the end result of construction projects. The researchers noted that Quality management procedures need to be implemented throughout the project lifecycle of any project to attain the desire level of quality as planned. According to the researchers, negligence and corruption makes those in charge of construction projects not to deliver quality houses because it has become a social problem in the modern societies. The researchers however, did not demonstrate how industry specific standards can be integrated in quality management at county levels where corruption has made the situation to worsen.

Atamba, Wambugu and Wanyoike (2016) likewise did an examination inspecting the quality administration practices of building construction in Nakuru town and how these practices impact effective finishing of projects. The investigation used the descriptive survey design where a sample of 107 building contractual workers was chosen from the objective populace of 335 National Construction Authority enlisted companies in Nakuru town utilizing the proportionate stratified testing technique. Information was gathered from the chosen organizations utilizing organized polls, and broke down utilizing both engaging and the numerous direct relapse

strategies. Results uncovered that all the four parts of value administration have a measurably noteworthy and positive association with fruitful completion of building development in Nakuru town. The examination suggested that building development firms should put resources into quality administration particularly quality change with a specific end goal to expand their rate of venture culmination achievement. Strategy producers ought to likewise present quality administration courses in the preparation curricular of key development specialists, for example, designers and undertaking chiefs in order to enhance the execution of development ventures. In this case, the main observation of the study is that industry standards may not be known to constructors creating a need for the authority in charge of construction to create awareness in order to improve compliance to such standards.

c. DESIGN IMPLEMENTATION AND PROJECT PERFORMANCE

Ghara (2016) study focused on best practices in quality control and assurance in design echoed that if proper designs are created which are within the expected quality standards and which take into consideration the geographical topography, it will be difficult to have alarming cases of buildings collapsing in the modern world owing to improved technology that is in place. The author noted that in order for projects to be undertaken in construction of buildings, it is required that designs have to be presented to the relevant authorities for appraisal and approval before they are implemented. The purpose of approving plans and designs is to ensure that housing projects follow specific quality standards and in accordance with the specific topography in which they will be constructed the design has proposed measures to enhance standardised buildings.

Different observations are also made by Mundia (2013) in a research on assessment of devolution of project management functions on organizational performance in county governments in Kenya. Researcher particularly claims that devolution of project function has suffered a lot at county levels due to increased corruption rates. The author suggests that because of high levels of corruption among county officers and officials, the approval and implementation of housing designs is not given much attention and weight it deserves, leading to increased cases of buildings collapsing. Ideally, the author proposes that the main challenge that is causing existing housing quality and collapsing problems experienced in Kenya is leadership which is as a result of devolution. Although the researcher has brought a new concept of devolution, it has not been presented in a convincing manner beyond reasonable doubt that it can actually be the main problem because cases of houses collapsing in Kenya have been there even before devolution came into place. Nevertheless, this might require further study as there could be some contribution from devolution and leadership at county levels respectively in the modern Kenyan environment.

Furthermore, Kogi (2013) conducted a qualitative study on the factors influencing the effectiveness of implementation of the economic stimulus programme in construction projects

focusing the Kenyan Capital City, Nairobi. The researcher established that indeed the major problem that is causing more frustrations and problems as far as the achievement of quality houses is concerned is the concept of replicating designs. In this regard, the researcher implies that most private investors as well as engineers are fond of taking designs that have been previously approved for construction in different areas and duplicating them elsewhere with an intention of cutting costs associated with plan approval and design, a decision that does not take into consideration differences in geographical outline and other dimensions respectively. For instance, a design or plan that can be considered appropriate in a dry area cannot be suitable in a swampy place. Hence the end product of houses is imitations which are at the wrong place, causing eventual fall or collapsing. The researcher did not however, demonstrate the connection on which economic stimulus relates to replicating of designs in different places.

Phyllis (2015) also observed that the problem of design for houses does not emanate and end at approval stage. She claimed that her research on effects of procurement procedures in project performance established that even when appropriate and proper designs are presented and approved by authorities, constructors employ improper procedures of procuring building materials which actually are of poor quality leading to ultimate poor quality of houses. In the study, the author tries to show the link between procurement procedures and quality of houses due to quality of materials, based on design implementation stage. In spite of this association, the study did not clearly elaborate the relationship between poorly procured materials and design implementations so as to cause poor houses being constructed.

Ama and David (2016) also carried out a systematic review study on project management practices on government organizations of developing countries. Specifically, among the areas of interest focused by the authors was the concept of government institutions or authorities approving designs, in which case the study's findings noted that there are increasing cases where the designs approved are not inspected, the construction process is not within the set standards, provided the authorities receive money in form of corruption meaning that quality is never considered and this has led to increasing problems witnessed in developing nations. Despite the study being regarded as relevant, it did not however demonstrate how government projects approval are also associated with private developers' projects which so far have been the ones leading in house collapsing cases in many counties of Kenya such as Kisii County.

d. FINANCIAL MANAGEMENT PRACTICES AND PROJECT PERFORMANCE

A study on the impact of contractors' financial management capability on cost and time performance of construction projects was carried by Oje, Odusami and Ogunsemi (2010). The study's methodology employed prequalification assessments of management capability of winning contractors as well as cost data relating to 77 completed building projects executed between 2004 and 2007 were obtained. The data obtained from a questionnaire and archival data were analyzed using one-way analysis of

variance and multiple regression. The results revealed that contractors' financial management capability has significant impact on cost and time performance of building projects as evidenced by *p*-values of 0.042 and 0.039, respectively.

Another study was carried out by Gitau (2015) on contract management practices and performance of construction projects focusing on Uganda contractors. The researcher employed a descriptive design by investigating road contractors and established that financial literacy was one of the factors that were negatively affecting the performance of construction projects. In particular, the author noted that once financial resources are not committed productively and through proper management approaches such as budgeting, contractors risk the likelihood of running out of financial resources leading to poor performance of already initiated construction projects.

Mayie (2016) was determined to explore the effect of risk management at project planning face on performance of construction projects using an exploratory research approach. The author observed a number of factors that hinder project growth which are not emphasized at planning stage by contractors. One of the fundamental factors as found out by the study is the failure to perform financial forecast due to negligence or lack of financial management skills respectively. It was noted that construction is a huge capital investment approach and methods for investment appraisal used should be able to reflect the possible outcome, leading to an effort of devising financial risk management techniques that can be employed in case of a risk occurring. Some of the financial risks that affect performance include liquidity risks, credit risks, insolvency or bankruptcy, and many more others that contractors ought to be aware and know how to manage them properly in order to promote housing construction projects performance.

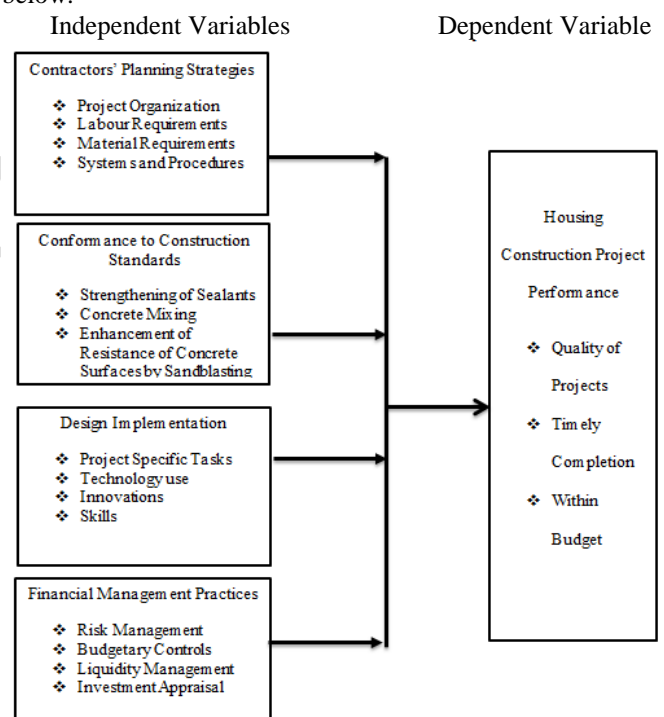
An investigation was carried out concentrating on Financial Capacity and Monitoring by (2013). The authors noticed that development industry is a standout amongst the most vital areas for the advancement of infrastructure and economy of a Nation. It is in this manner critical that sufficient measures are set up to guarantee quality in the part. The goal of this examination was to research the impact of checking and money related limit on nature of ventures in Nakuru County, Kenya. The instrument of information accumulation was surveys. The objective populace comprised of 32 development organizations in Nakuru. The unit of investigation was continuous and finished tasks executed by the development organizations. The investigation's discoveries noticed that quality issues happen because of absence of consistent change in process, and interior inspecting issues, absence of trust with the provider, poor preparing framework and correspondence hole among venture members are a factor adding to low quality execution. Quality in structures is described by breaks, poor completing, twisted shafts, chunks, and segments, spilling plumbing highlights and on the outrageous cases sudden fall among different highlights.

Fundamentally, these reviewed scholarly works have demonstrated that quality of building construction projects is an issue of greater concern in the modern environment especially in Kenya and other developing nations where cases of demolition, collapsing, and delay of projects have been

reported owing to poor quality. The factors affecting quality include although they are not limited to; quality planning and control, failure to follow industry specific standards, poor plan design approval and implementation, and financial management practices. Most of the reviewed literatures have relied upon qualitative approaches, which necessitate the need to conduct a qualitative study in order to make the results more comparable. Although the studies have been carried out in other places internationally, regionally and locally especially in other counties, they are still relevant as they address constructs aimed in the current inquiry. However, by virtue that there are no studies that have been carried out in Kisii County, it implies that a gap really exists.

2.4 Conceptual Framework

In research, a conceptual framework is a diagrammatic representation of the study variables showing both dependent and independent variables respectively. In this research, the independent variables include; contractor's planning strategies, industry specific standards, design implementation, and financial management practices respectively. On the other hand, the dependent variable for the study is housing construction projects performance as illustrated in figure 2.1 below.



Source: (Author, 2018)

Figure 2.1: Conceptual Framework

As observed in figure 2.1 above, independent variables have been linked to the dependent variable. The researcher draws the assertions from the reviewed literature which has shown that indeed each of the variables above have a certain relationship with the dependent variable (housing construction projects performance). Particularly, it has been demonstrated that contractors' planning strategies include; project organization techniques, labour requirements approaches, material requirements decisions, and overall systems and procedures in housing. The researcher envisaged that industry specific standards encompass strengthening of sealants, concrete mixing standards, and enhancement of resistance of

concrete surfaces by sandblasting respectively. Design implementation includes aspects such as project specific tasks, technology use, innovations, and skills employed. Finally, financial management practices involve risk management approaches, budgetary controls, liquidity management, and investment appraisal respectively. All these variables are assumed to directly impact the performance of houses projects in terms of quality, timely completion and cost as was investigated in this study.

III. METHODOLOGY

A. INTRODUCTION

This chapter will present the employed methods for this study, which includes research design, target population, sampling approaches, data collection procedures and instruments, reliability and validity, methods of data analysis and presentation, and ethical considerations respectively.

B. RESEARCH DESIGN

Since this study was quantitative and qualitative in nature, the researcher employed a descriptive design in order to undertake the study. Descriptive research design is considered appropriate in undertaking studies that seek to obtain answers to questions such as how, where, when, which and who respectively in addition to an establishment of influence of the envisaged variables on each other. A design in research is the overall strategy or approach that a researcher envisages in order to be able to undertake a successful inquiry on a given phenomenon (Kothari, 2014).

C. TARGET POPULATION

In the context of this research, the researcher targeted 206 building contractors in Kisii County who are registered by the NCA on its website as by 2018 (nca.co.ke). Contractors were considered important for being key informants in trying to understand how the specific variables in this study influence housing construction projects performance. Population in research refers to the elements a researcher wants to study, observe or analyse (Kumar, 2011). Table 3.1 below shows the distribution of the target population in various groups in Kisii County as obtained from Appendix III, where NCA 3 to 8 represents National Construction Authority (NCA)'s classes given to contractors.

Group or Segment	Number	Percentage (%)
NCA 3	8	3.88
NCA 4	14	6.80
NCA 5	19	9.22
NCA 6	36	17.48
NCA 7	57	27.67
NCA 8	72	34.95
TOTAL	206	100.00

Source: (Author, 2018)

Table 3.1: Sampling Frame

D. SAMPLING AND SAMPLE SIZE

a. SAMPLING DESIGN

Sampling is the process of selecting a few representatives from an entire population to take part in a research (Khan, 2011). In order to carry out an objective study, care must be taken while selecting a sample for a population. Approaches that are free from bias should be used so as to give all the respondents equal opportunities of being selected to take part in a research exercise. A probabilistic based sampling strategy should be preferred as it allows the researcher to remain objective in the process of sampling. In this regard, this study employed a stratified random sampling which was considered appropriate in ensuring there is no bias and that all stakeholders were given equal opportunities to take part in the research process.

b. SAMPLE SIZE

As already stated above, a sample size is the exact number of respondents that are included in the final study (Daniel and Sam, 2011). They are representatives of the entire population. A good sample must be able to contain all the characteristics of the entire population in order to give a true picture of the phenomena under investigation; in this case the sample size was selected from the 206 registered contractors in building works. Although the sample was randomly picked from the population, its size was determined by a formula as proposed by Kothari (2014) which is provided below.

$$n = \frac{N}{1 + N(e)^2}$$

Caption: Sample Formula Used

Where;

N = Population Size, n = sample size, and e = is the level of precision which is 0.05 in this case for a 95% confidence level.

Hence; the sample size was given by; N = 206, e = 0.05
Calculated as; $206 / [1 + 206 (0.05)^2]$
= 135.97 (Approximately 136)

Sample size of 136 respondents was distributed in different groups as in the sampling table 3.2 below, where the respondents were contractors.

Segment	Initial population size	Calculated Sample Size	Percentage (%)
NCA 3	8	5	62.50
NCA 4	14	9	64.29
NCA 5	19	13	68.42
NCA 6	36	24	66.67
NCA 7	57	38	66.67
NCA 8	72	47	65.27
Total	206	136	66.02

Source: (Author, 2018)

Table 3.2: Sample Size

E. DATA COLLECTION INSTRUMENTS

In order to be able to undertake a study, the researcher must be able to come up with appropriate procedures and

instruments of obtaining data from the respondents. The procedures are chosen based on the study methodology and design. The study used semi-structured questionnaires to collect data. The questionnaires contained Matrix questions in order to motivate respondents to give responses. The questionnaires were organized into sections to cover the background information of the respondents, the dependent variable and independent variables respectively.

F. PILOT STUDY

A pilot study is a mock or trial research exercise carried out with the aim of finding out if the questions contained in a questionnaire are ambiguous or not (Kothari, 2014). Pilot study was carried out on 10 respondents in Kiambu County and results obtained were used to test for reliability and validity as explained below.

a. VALIDITY

Validity alludes to the legitimacy or credibility of the examination (Khan, 2011). It is essentially an idea of distinguishing if the instruments are really estimating what they should enumerate (Kothari, 2014). The analyst was concerned with content validity by essentially looking at the content of data collection instruments to find out if they were legitimate. Validity was further tested through test-retest reliability and internal consistency, where a good outcome increased confidence that the scores represented what they are supposed to.

b. RELIABILITY

In research, reliability has to do with the quality of measurement (Khan, 2011). Reliability is the consistency or repeatability of specific measures used in research (Kothari, 2014). Internal consistency of the constructs or items used was measured by the use of Cronbach's Alpha test at the threshold of 0.7. Table 3.3 below shows the results on Cronbach's alpha reliability test against the independent variables under this study which reveal that the alpha measures higher than the recommended scale of 0.7. The overall reliability of the study was 0.787 which sufficiently confirms the reliability of the data collected under independent variables in this study.

Independent Variable	No. of items	Cronbach's Alpha
Contractors Planning Strategies	14	0.816
Conformance to Construction Standards	9	0.907
Design Implementation	8	0.736
Financial Management Practices	11	0.816

Source: (Pilot Data, 2018)

Table 3.3: Cronbach's Alpha Test

G. DATA COLLECTION PROCEDURE

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes (Kothari, 2014). The researcher distributed questionnaires to targeted respondents and allowed them to fill the questionnaires before picking them.

H. DATA ANALYSIS AND PRESENTATION

In order to be able to arrive at conclusions and answer research questions, it was important that raw data was changed into usable form which is through data analysis. The data obtained by the use of questionnaires was cleaned, organized, sorted and analysed by the help of Statistical Package for Social Sciences (SPSS). Descriptive and inferential statistics were used to analyse quantitative data. Descriptive statistics included frequencies, percentages, mean and standard deviation. The following multiple regression analysis was applied to show the relationship between the variables guiding the study.

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

Model: Regression Equation

Where;

Y = Dependent Variable

β_0 = a constant coefficient (if any)

β_1 to β_4 = are coefficients for each variable

X_1 = Planning Strategies

X_2 = Compliance to Industry Standards

X_3 = Design Implementation

X_4 = Financial Management Practices

And ϵ = is an error term respectively; the level of significance used was 5%.

Diagnostic tests were performed to ensure the regression analysis was valid. The tests specifically focused on multi-collinearity, homoscedasticity, and normality of the independent variables. Normality was tested using Shapiro-Wilk test, Multi-collinearity was tested using Variance Inflation Factor, and homoscedasticity was tested using Breusch-Pagan test respectively. The results were presented using tables, charts and figures respectively.

I. VARIABLE MEASUREMENT

Variables are measured using an instrument, device, or computer. The scale of the variable measured drastically affects the type of analytical techniques that can be used on the data, and what conclusions can be drawn from the data. There are four scales of measurement, that were used in this study and they include; nominal, ordinal, interval, and ratio analysis.

J. ETHICAL CONSIDERATIONS

Ethical contemplations allude to the particular practices that the scientist considered to be good in an investigation (Khan, 2011). In this study, the researcher ensured that honesty was portrayed in collection of data, analysis, and reporting of the outcomes. Further, efforts were made to ensure respect for human dignity, by minimizing any possible harm while maximizing benefits to them.

IV. FINDINGS AND DISCUSSIONS

A. INTRODUCTION

The chapter discusses research findings for the data obtained from the respondents using the data collection method proposed on the study's methodology. It is divided into sections covering the response rate, data reliability, background information, dependent variable and the independent variables which include the contractors' planning practices, industry specific standards, design implementation and financial management practices.

B. RESPONSE RATE

Questionnaire response rate was 85.29%, which is higher than the recommended average rate of 30%, as asserted by Saunders and Lewis (2009). Since the response meets the recommended threshold of 30%, it can be interpreted to mean that this study's results are a good representative of the targeted population.

C. BACKGROUND INFORMATION

The researcher designed the questionnaire to collect the following bio-data of the respondents; age bracket, gender, level of education attained, role in the construction company, duration in the construction industry, NCA category of the company, projects executed in the last 5 years and the number of employees in the Organization. The analysis for both qualitative and quantitative data is presented in the sub sections below.

a. RESPONDENTS' AGE AND GENDER

The findings of the study established that age range of 21 – 30 years is where 47 of the participants belonged with 35 of them being female while 12 were male. This was followed by those below 20 years with 12 female while 11 male. Those aged 31 – 40 years were 22 and notably all of them were male. Finally those above 51 years were 12 and all of them were male respectively as shown in table 4.1 below.

Respondents' age Bracket		Gender of the respondent		Total
		Male	Female	
Age range of the respondent	Below 20 years	11	12	23
	21 - 30 years	12	35	47
	31 - 40 years	22	0	22
	41 - 50 years	0	12	12
	Above 51 years	12	0	12
Total		57	59	116

Source: (Survey Data, 2018)

Table 4.1: Respondents' Age Bracket and Gender

The results show that the respondents represented all age groups as there were representatives, hence making the research conclusions applicable to all the entire population. A study that comprises all age groups is considered a fair

representation of the society and population of study as echoed in a study by Raji and Firas (2011).

b. RESPONDENTS' ROLE

The researcher sought to establish the role or position of employment of the respondents. In cases where contractors were not present, one of the members from the organisation was allowed to respond to questions on behalf of the contractors. The results obtained are presented in table 4.2 below.

Respondents' Role	Frequency	Percentage (%)
Contractor	84	72.41
Manager	10	8.62
Head of Department	14	12.07
Foreman	8	6.90
Total	57	100.00

Source: (Survey Data, 2018)

Table 4.2: Position of the Respondents

From the results, it was established that majority of the respondents represented by 72.41% were contractors, followed by heads of departments and managers at 12.07% and 8.68% respectively, and finally foremen at 6.90%. Ideally, this representation is a good depiction of the perceptions in construction companies without any bias as maintained by Kemoli (2015).

c. LEVEL OF EDUCATION

The study also aimed at identifying the level of education attained by the respondents and the results obtained are presented in table 4.3 below.

Education Level	Frequency	Percentage (%)
Artisan	12	10.34
Diploma	57	49.14
Bachelors	35	30.18
Masters	12	10.34
Doctorate	0	0.00
Total	116	100.00

Source: (Survey Data, 2018)

Table 4.3: Respondents' Level of Education

From the results obtained, majority of the respondents had attained a diploma level of qualification presented by 49.14%, followed by a bachelor's degree at 30.18%, and then finally artisan and master levels at 10.34% each. There were no respondents who had attained a doctorate level of qualification. This result implies that most of the contractors in the county do not further their education, a fact that can affect their managerial practices. The study is an agreement with the observations made in a study by Kamau and Mohamed (2015).

d. DURATION IN THE CONSTRUCTION INDUSTRY AND ROLE

The findings of the research indicated that those who below 2 years duration in the construction industry represented by 47 of the respondents were foremen. Between

3 – 5 years were 45 respondents where 34 were Heads of Departments and 11 were foremen. Also, those between 6- 8 years and above 10 years were 12 each, and were contactors and managers respectively as displayed in table 4.4 below.

Duration in the Industry		Employment role				Total
		Contractor	Manager	Head of Department	Foreman	
Duration in construction industry	Below 2 years	0	0	0	47	47
	Between 3 - 5 years	0	0	34	11	45
	Between 6 - 8 years	12	0	0	0	12
	Above 10 years	0	12	0	0	12
Total		12	12	34	58	116

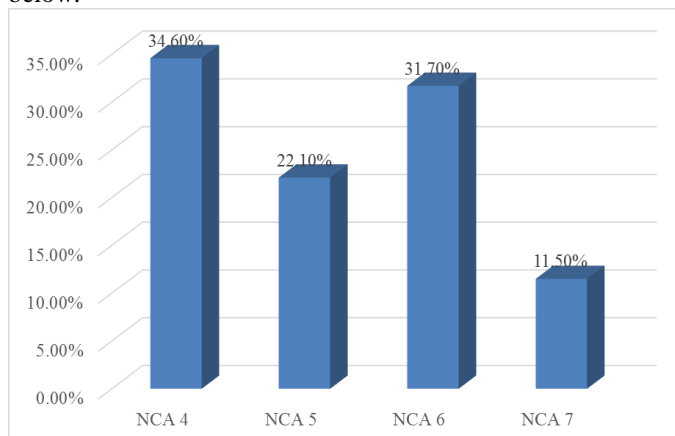
Source: (Survey Data, 2018)

Table 4.4: A Crosstab for Duration in Construction Industry and Role

The results informed the study by indicating that employment position of the respondents was determined by the duration in the construction industry. Managers were retained by the construction industries and served for more than 10 years; an indication of utilizing experience to enhance project performance. As a matter of fact, the literature reviewed supports this assertion as echoed by Otonde and Yusuf (2015) in their study.

e. NCA CATEGORY OF THE COMPANIES

The study aimed at finding out the NCA class the construction companies of the respondents belonged. The NCA classes ranged from 3 to 8 and the results are presented below.



Source: (Survey Data, 2018)

Figure 4.1: NCA Classes of the Companies

From the results of the study, majority of the companies were in NCA class 4, represented by 34.6%, followed by NCA class 6, represented by 31.7%, then NCA class 5 at 22.1% and finally NCA class 7, represented by 11.5% with no respondents for classes 3 and 8. These findings depicts that majority of the companies contacted had not attained the senior most ranking which is class 8, as this was represented by 0.0% as shown in the above figure. In this case, if a higher

ranking according to National Construction Authority implies advanced skills, this study finding that contractors had not acquired the best skills in the industry as observed by Kiran (2016).

f. NUMBER OF PROJECTS EXECUTED IN LAST FIVE YEARS

The researcher aimed at finding out the number of projects that have been completed within the last five years as an indication of projects that have performed well or successfully and the results are presented below.

Number Of Projects Executed	Frequency	Percentage (%)
NCA 3	0	0.00
NCA 4	36	50.70
NCA 5	12	16.90
NCA 6	11	15.50
NCA 7	12	16.90
NCA 8	0	0.00
TOTAL	71	100.00

Source: (Survey Data, 2018)

Table 4.5: Number of Projects Executed

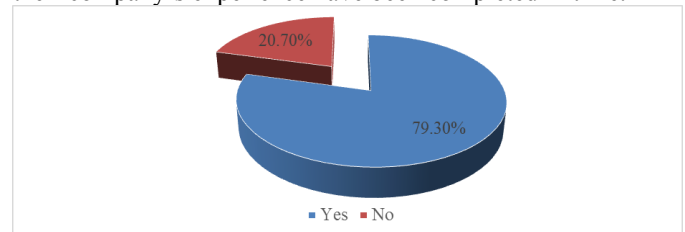
From the results obtained, it is identified that those in class 4 completed the highest number of projects which were 36 in number representing 50.7% of the total number of projects completed. Class 5 and 7 had 12 projects each while class 6 had managed 11 projects. This finding contradicts the general assumptions made from literature review which places classes in terms of their seniority and therefore the researcher expected that those in higher classes were to be the ones completing the highest number of projects, which was not the case as revealed in a study by Sholarin and Awange (2016).

D. PROJECT PERFORMANCE

The respondents were asked numerous questions regarding the project performance, in which case various responses were obtained. The responses obtained are analysed and presented in the sections below.

a. PROJECT COMPLETION IN TIME

The respondents were asked whether or not they thought all the projects that have been carried out in the past 5 years in their company's experience have been completed in time.



Source: (Survey Data, 2018)

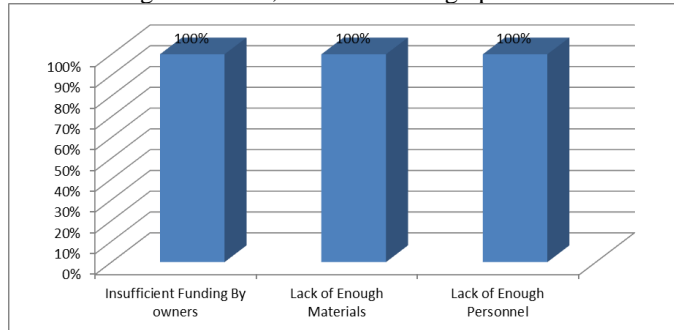
Figure 4.2: Project Completion in Time

From the table 4.2 above, 79.3% of the respondents affirmed that indeed in their company's experience, all the projects that had been carried out in the last 5 years had been completed in time while 20.7% of the respondents disagreed

the fact that all projects carried out in the 5 years in their company's experience were completed in time.

b. PERCEPTION ABOUT PROJECT DELAY

The respondents were asked to give their opinion regarding to the causes of the projects to delay. They were required to indicate whether insufficient funding by owners, lack of enough materials, or lack of enough personnel.



Source: (Survey Data, 2018)

Figure 4.3: Causes of Project Delay

As displayed by the figure 4.3 above, the research found out that the causes of projects to delay were due to insufficient funding by the owner, lack of enough materials and enough personnel as each was supported by 100% of the respondents. This is in agreement with the study by Kerzner (2013) who supported the fact that other dimensions such as funding, shortage of materials, and lack of enough personnel might potentially cause delay or projects which in turn affects performance of projects.

c. NUMBER OF HOUSES COLLAPSED IN THE LAST FIVE YEARS

The respondents were asked to indicate the number of projects collapsed due to any reasons out of the projects they had completed in the last 5 years.

Descriptive Statistics	Total Observations	Projects collapsed	Percentage (%)
For the last 5 years	71	8	11.27

Source: (Survey Data, 2018)

Table 4.6: Descriptive Statistics for Houses Collapsed in the Last Five Years

From the descriptive statistics table 4.7, out of the 71 observed projects, 8 of them had collapsed in the last five years representing 11.27% which indicates that in overall projects had an overall probability of 11.27% of being of poor quality. According to past studies, collapsing of projects is one of the indicators of poor project performance (Mthethwa, 2016).

d. OVERALL PROJECT PERFORMANCE

The dependent variable of the research was measured by the six factors that affected timely completion of the projects and results presented below.

Factors	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
Long periods in time taken affects project completion	22.4	24.1	19.8	18.1	15.5
Budgeted cash flow of the projects affects project completion duration	21.6	24.1	14.7	24.1	15.5
Budgeted overhead cost of the project influences completion time taken	15.5	27.6	12.9	19.8	24.1
Project design cost is another factor affecting project quality	24.1	18.1	15.5	15.5	26.7
Material and project costs affects project quality	21.6	16.4	27.6	16.4	18.1
Project labour cost affects project quality	16.4	27.6	14.7	21.6	19.8

Source: (Survey Data, 2018)

Table 4.7: Overall Project Performance Statements

From the findings, it was observed that respondents thought all the points presented in a Likert Scale affected performance of projects by virtue that timely completion was affected. Such factors included; long periods, budgeted project's cash flow, budgeted overhead costs, project design cost and implementation, material costs, and project labour requirement respectively. However, the overall results show that overhead cost of the project had a greater impact and stands out as a critical factor affecting performance. These results are supported by Murray (2010) whose opinion stated that quality standards are greatly affected by such factors hence negatively influencing project performance.

E. CONTRACTORS' PLANNING PRACTICES

Respondents were asked a series of questions that were meant to evaluate their perceptions as far as planning practices is concerned. The findings and responses are presented in the sections that follow.

a. STATEMENTS ON CONTRACTORS' PLANNING PRACTICES

The researcher sought to determine the extent to which respondents would agree with the given statements on

planning practices. The respondents were required to indicate on Likert Scale from 1 – 5 the level of agreement to the statements. The responses were represented in the table 4.8 below in form of frequencies and percentages.

CONTRACTORS' PLANNING PRACTICES	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
Planned time for project construction delays projects	38.8	19.8	20.7	20.7	0.0
Site preparation time delays projects	38.8	19.8	0.0	31.0	10.3
Average delay in payment from the owner to the contractor delays projects	0.0	19.8	28.4	31.0	20.7
Availability of the resources as planned through project duration is a major challenge	19.0	0.0	0.0	50.9	30.2

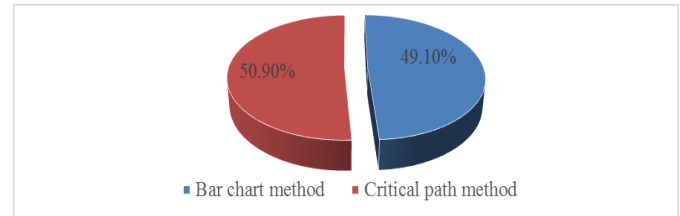
Source: (Survey Data, 2018)

Table 4.8: Responses for Statements on Contractors' Planning Practices

The responses obtained indicated that only 20.7% agreed that planned time for project completion delays projects hence leading to poor project performance. Majority of the respondents represented by 50.9% and 30.2% agreed and strongly agreed to the fact that availability of materials and resources is the main challenge that affects project performance through its impact on planned time. Time taken for site preparation and receiving payment from clients were part of the factors that were found to affect planned time for completion of projects as far as performance is concerned. The results seem to be in agreement with reviewed literature on the need to have adequate planning in order to promote project performance as echoed by Raji and Firas (2011). Similarly, Bent (2012) suggested that planning is a good measure of quality control which enhances appropriate use of available resources to support project performance as observed in this study. However, these findings are contradictory to Karimi (2016) whose findings stated that the main factors affecting performance as far as planning is concerned are categorized into four, namely; project participant related factors, organizational tactics and strategies in planning, environmental factors affecting planning, and project characteristic factors respectively.

b. PROJECT SCHEDULE PLANNING TECHNIQUES

The respondents were asked to identify the kind of method they used to represent the project planning and scheduling. The respondents were required to choose bar chart method, critical path method, S-curve method or any other specified methods. The findings of the study established that only two methods were being used. The bar chart method was used by 50.9% of the respondents while 49.1% of the respondents used the critical path method as displayed in the figure 4.4 below.



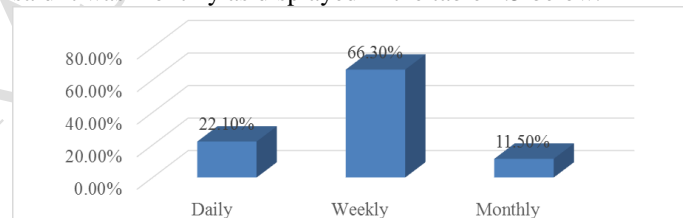
Source: (Survey Data, 2018)

Figure 4.4: Project Scheduling Method

From the findings, it is clearly evident that respondents are not familiar with other methods of project planning and scheduling a part from the traditional approaches (bar chart and critical path analysis). This study's findings are contrary to what was observed by Liviu et al. (2011) who indicated that technology has changed the manner in which construction projects are undertaken with particular emphasis on using computer-aided applications to plan and schedule resources for projects.

c. PROJECT TEAM MEETING

The study also sought to determine whether the project team often met for discussions in monitoring, updating and controlling of the progress. The respondents were required to indicate whether daily, weekly, monthly or do not meet. The responses obtained show that 66.3% said it was weekly, 22.1% of the respondents said it was daily and finally 11.5% said it was monthly as displayed in the table 4.5 below.



Source: (Survey Data, 2018)

Figure 4.5: Frequency of Project Team Meetings

The findings show that majority of the contractors meet with their team members on a weekly basis so as to monitor, update and control the planned activities with regard to ensuring project performance is enhanced. These findings support the assertions by Agbenyega (2014) who maintained that technological and social changes have not greatly helped construction industry as its management and quality techniques have not shown a positive trend like in other industries.

d. REQUIREMENT FOR SUBMISSION OF SUPPLIER SCHEDULE

In addition, the study sought to establish how often the supplier was required to submit their detail activities for construction workers in advance to adjust their actual schedule. The respondents were required to indicate if daily, weekly, monthly or do not meet. The study findings revealed that 54.8% of the respondents did it weekly, 23.1% of the respondents did not meet while 22.1% submitted their detail activities schedule on daily basis as presented in the table 4.9 below.

Supplier Activities	Frequency	Percentage
Daily	23	22.1
Weekly	57	54.8
Do not meet	24	23.1
Total	116	100.0

Source: (Survey Data, 2018)

Table 4.9: Frequency for Supplier Activities Schedule

On the context of requiring supplier's schedules, a proportion of 23.1% do not ask for these activity schedules showing that all stakeholders in project management are not adequately involved in the planning process. This result show that failure of project performance is more often caused due to poor planning approaches and lack of involving other stakeholders such as suppliers and governments as proposed by Karimi (2016).

F. COMPLIANCE TO INDUSTRY STANDARDS

The respondents were subjected to a series of questions that were meant to determine their opinions on compliance to industry standards. The responses obtained have been analysed and presented in the sections that follow.

a. RESPONSES FOR COMPLIANCE TO INDUSTRY STANDARDS

The respondents were asked to indicate the extent to which they agree with the given set of factors related to compliance to industry standards. They were required to indicate if they strongly disagree, disagree, neutral, agree or strongly agree. The responses obtained were analysed and presented in the table 4.10 below as percentages.

Compliance To Industry Standards	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
Project safety is usually implemented to a larger extent	15.5	27.6	12.9	19.8	24.1
Workers receive trainings on construction standards always	24.1	18.1	15.5	15.5	26.7
Concrete mixing needs are affected by materials availability	21.6	16.4	27.6	16.4	18.1
All projects are constantly monitored by government authorities	16.4	27.6	14.7	21.6	19.8

Source: (Survey Data, 2018)

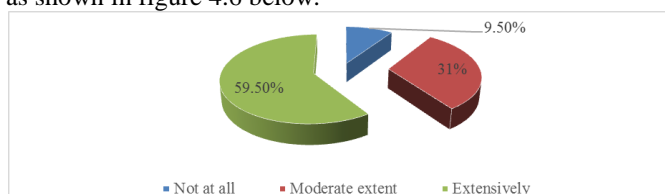
Table 4.10: Responses for Compliance to Industry Standards

From the findings, implementation of project safety measures was found to be main industry standards implemented as it was supported by majority of the respondents at 24.1% and 19.8% who strongly agreed and agreed respectively. Moreover, all other factors were found to

be relevant with the least being concrete mixing as presented in the table below for descriptive statistics. Basically, these findings have a close relationship with the ones reviewed on the literature review such as that by Githenya and Ngugi (2014) and Nyambura (2015) who insisted that compliance to industry standards are important in promoting construction projects performance. Contrary to this observations, it was noted in the literature that majority of contractors do not follow the laid down procedures and standards and prefer shortcuts through corrupt means hence ending up to jeopardize the end result of buildings (Orji et al., 2016).

b. EXTENT TO WHICH OVERALL PROJECT SAFETY FACTORS HAVE BEEN IMPLEMENTED

The respondents were asked to give their opinions on the extent to which overall project safety factors had been implemented. The findings revealed that 59.5% of the respondents were for the opinion of extensively implemented, 31% said it was moderate extent and 9.5% claimed not at all as shown in figure 4.6 below.



Source: (Survey Data, 2018)

Figure 4.6: Overall Project Safety Factors Implementation

From the findings of this study, a total of 91.50% of the contractors are said to be following industry (moderate and extensively), which is a good indicator. Nevertheless, the fact that 9.50% never do so and 59.50% are doing so to a moderate extent raises the question of safety of buildings, which is one fundamental reason for poor performance on constructions as supported by Atamba et al. (2016).

c. ONGOING FORMAL SAFETY AND STANDARDS TRAININGS

The respondents were required to state on average how much the on-going formal safety and standards trainings workers received monthly in their construction company. The results revealed that 40.5% received training of 4 – 7 hours, followed by those received 1 – 4 hours represented by 30.2%, 19.8% of the respondents received trainings less than 1 hour while those received training over 7 hours were represented by 9.5% as shown in the table 4.11 below.

	Frequency	Percentage
Less than 1 hour	23	19.8
1 - 4 hours	35	30.2
4 - 7 hours	47	40.5
Over 7 hours	11	9.5
Total	116	100.0

Source: (Survey Data, 2018)

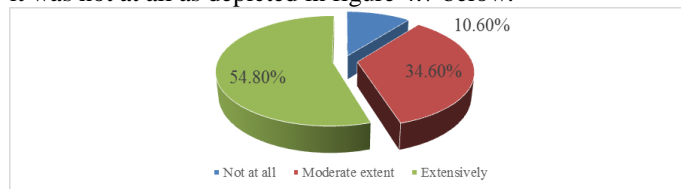
Table 4.11: On-going Formal Safety and Standards Training

Results demonstrate that although there are formal trainings in construction companies, they are usually not given much attention as the number of hours covered are less than 7 hours per month with 9.5% only that received trainings above

7 hours in a month. The findings support Atamba et al. (2016) who maintained that lack of training contributes to poor project implementation and performance respectively.

d. PRE-TASK PLANNING FOR SAFETY CONDUCTED

The study also sought to determine the extent to which pre-task planning for safety conducted by contractors, foremen or other site managers. The findings confirmed that 54.8% of the respondents believed it was extensively, 34.6% said it was moderate extent and 10.6% of the respondents said it was not at all as depicted in figure 4.7 below.



Source: (Survey Data, 2018)

Figure 4.7: Pre-task planning For Safety

Another element of industry specific standards in pre-task planning which is an appropriate safety strategy for ensuring that projects are undertaken in accordance with legislations and global best practices according to Orji et al. (2016). However, the findings in this study indicate that 10.60% were for the opinion that this is usually not done with 54.80% indicating it was extensively done. These findings demonstrate that the level of project performance due to industry standards conformance is of great significance.

G. THE DESIGN IMPLEMENTATION

The respondents were asked numerous questions with regard to design implementation and were required to give their opinions concerning how design implementation influenced housing construction projects performance. The results obtained from the respondents were analysed and presented in the sections below.

a. LEVEL OF AGREEMENT TO DESIGN IMPLEMENTATION FACTORS

The respondents were also asked to indicate the extent of agreement to a set of factors of design implementation with reference to current project they were undertaking. The workers were supposed to indicate strongly disagree, disagree, neutral, agree or strongly agree. The responses obtained are presented in table 4.12 below.

DESIGN IMPLEMENTATION	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
Project design implementation has been achieved effectively	9.5	0.0	0.0	31	59.5
Project has quality designs given to use by the owner	9.5	0.0	0.0	10.3	80.2
Construction activities are constantly inspected	9.5	0.0	0.0	31	59.5

to ensure quality work and implementation					
Critical milestones are constantly well-monitored	9.5	0.0	10.3	20.7	59.5

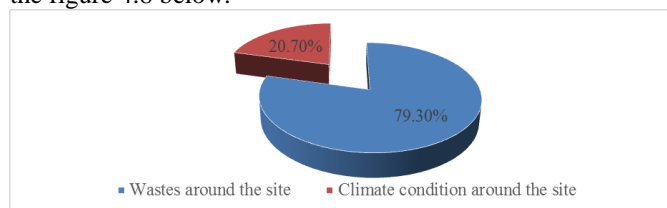
Source: (Survey Data, 2018)

Table 4.12: Responses for Factors of Design Implementation

Aggregation of the responses obtained enhanced the computation of descriptive statistics in which case all the components of design implementation were found to be significant. In reference to the literature reviewed, the project design implementation was found to be important to housing project performance (Ghara, 2016). A proper design was associated with stable houses. The descriptive statistics for the factors show that the respondents are extensively satisfied with them. From the results, all the features of design implementation are relevant towards projects' performance. It was noted in the literature that some of the factors affecting proper house design approval and implementation include corruption, a fact that frustrates the efforts of having quality constructions in society (Mundia, 2013; Kogi, 2013).

b. FACTORS CONSIDERED WHILE CREATING AND IMPLEMENTING DESIGNS

The respondents were asked to express their opinions on the factors they considered while creating and implementing designs for construction projects with regard to design implementation. The responses obtained were analysed and revealed that only two factors were considered. 79.30% of the respondents considered waste around the site while 20.7% considered the climate condition around the site as shown in the figure 4.8 below.



Source: (Survey Data, 2018)

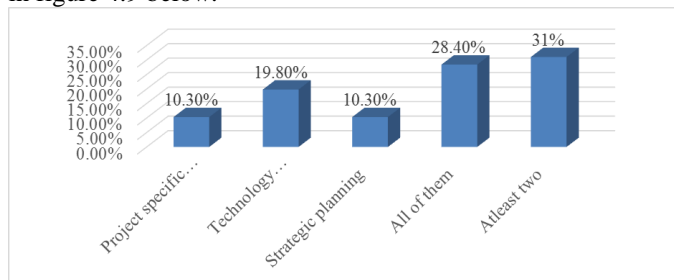
Figure 4.8: Factors Considered While Creating and Implementing Designs

From these outcomes, the observations are supported by the claims which were made by Phyllis (2015) that project performance with regard to design does not start at approval stage and end at implementation, but it is rather an on-going process that involves a number of issues such as factors considered in creating and implementing.

c. STRATEGIES IN ENSURING ADEQUATE DESIGN IMPLEMENTATION

The respondents were required to state their opinions on the given set of strategies they thought were important in ensuring adequate design implementation. The strategies given were; project specific tasks identification, technology needs assessment, innovation practices and strategic planning. The results revealed 31% chose at least two strategies, 28.4% chose all of the strategies, 19.8% chose technology needs assessment while both project specific tasks identification and

strategic planning were represented by 10.3% each as shown in figure 4.9 below.



Source: (Survey Data, 2018)

Figure 4.9: Strategies in Ensuring Adequate Design Implementation

These findings confirm reviewed literature assertions that project performance can be influenced to a larger extent by factors such as technology needs and strategic planning (Ama and David, 2016).

H. FINANCIAL MANAGEMENT PRACTICES

The respondents were asked a number of questions with regard to financial management practices in their construction industry to measure the influence to projects performance. The responses obtained were analysed and the findings were presented in the sections that follow.

a. RESPONSES TO FINANCIAL MANAGEMENT PRACTICES

The respondents were required to express their opinions to the extent they agreed to a set of factors of financial management. They were supposed to indicate strongly disagree, disagree, neutral, agree or strongly agree. The responses obtained were tabulated in inform of frequency and percentages as shown in table 4.13 below.

FINANCIAL MANAGEMENT PRACTICES	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
Financial risk management is done in all projects we have executed	9.5	0.0	0.0	50.9	39.7
Liquidity management is usually done for projects adequately.	9.5	0.0	10.3	40.5	39.7
Budgets are prepared for all projects before execution	0.0	9.5	10.3	50.9	29.3
Owners of projects are usually late in making payments	29.3	29.3	20.7	20.7	0.0

Source: (Survey Data, 2018)

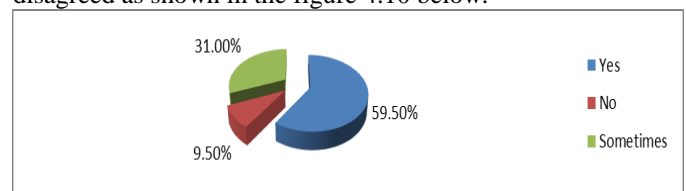
Table 4.13: Responses for Factors of Financial Management Practices

From the responses obtained, a bigger percentage of respondents represented by 50.9% and 39.7% respectively agreed and strongly agreed that they undertake financial risk management, which is a positive implication in promoting project performance. On the basis of liquidity management, 40.5% and 39.7% agreed and strongly agreed respectively.

Only 20.7% indicated that project owners are usually late in making payments. From the findings, it can be observed that there are platforms of ensuring proper financial management techniques which are the foundations for project performance as maintained by Gitau (2015). Ideally, these studies are in agreement with other studies such as Oje et al. (2010), Mayie (2016), and Asinza et al. (2016) whose arguments are founded on the basis that project performance is closely affected by financial management practices.

b. LIQUIDITY MANAGEMENT FOR PROJECTS IS ADEQUATELY DONE

The respondents were asked to indicate if they normally undertake liquidity management practices. The responses indicated that 59.5% of the respondents agreed while 9.5% disagreed as shown in the figure 4.10 below.



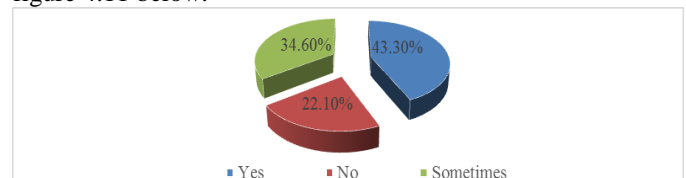
Source: (Survey Data, 2018)

Figure 4.10: Liquidity Management

As it can be observed from the findings, it is only 9.5% who reported that they usually do not undertake liquidity planning and management. This implies that majority of contractors in Kisii County are aware of the need for better financial management practices through liquidity management as supported by Asinza et al. (2016).

c. APPLICATION OF ACTUAL VALUE AND EARNED VALUE CONCEPT

The respondents were asked whether they were applying the actual value and earned value concept in controlling cost for the project in their construction company. Responses confirmed that 43.3% agreed, 34.6% of the respondents applied sometimes while 22.1% disagreed as depicted in the figure 4.11 below.



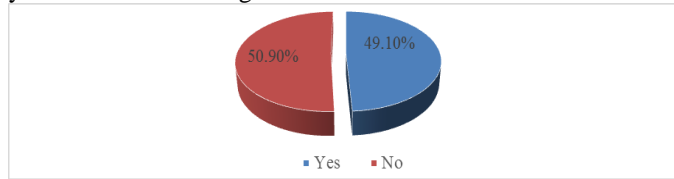
Source: (Survey Data, 2018)

Figure 4.11: Actual Value and Earned Value Concept

Results show that majority of contractors in the county applied actual value to earned value as a means of financial management practices. This can be said to be among the reasons behind the higher rate of project completion within the budgeted time and costs which are significant parameters of measuring project performance (Mayie, 2016).

d. COST ENGINEER ONLY RESPONSIBLE FOR DEALING WITH COST CONTROL

When asked about having a cost engineer who is only responsible for dealing with cost control in the construction company, 50.9% of the respondents said no while 49.1% said yes as shown in the figure 4.12 below.



Source: (Survey Data, 2018)

Figure 4.12: Cost Engineer

Although most of the contractors do not have cost engineers as revealed from above, almost a half of the contractors are trying to use the concept of cost engineers in managing their financial in undertaking projects. These results are supported by past researchers such as Oje et al. (2010) who insisted on the need to have cost engineers to help contractors manage finances well and promote project performance in constructions.

I. THE INFERENTIAL STATISTICS

The level of significance to be used for inferential statistics is 95% thus the alpha value is 0.05. Therefore, the study will conduct Shapiro Wilk Test of normality to assess if the dependent variable is normally distributed to all for inferential statistics. The results of the normality test are displayed in the table 4.14 below.

Dependent Variable	Test Statistic	Degree of freedom	P- Value
Project performance	0.981	116	0.101

Source: (Survey Data, 2018)

Table 4.14: Shapiro-Wilk Test of Normality for Dependent Variable

The P- value obtained was 0.101 which is more than the alpha value of 0.05 therefore confirming the normality of the variable. Thus, inferential statistics that assume normality can be conducted to yield accurate and unbiased results.

a. DIAGNOSTIC TEST RESULTS AND DISCUSSION

For purposes of testing whether the regression analysis conducted in this study was valid and accurate, diagnostic tests were carried out and results are presented below.

Test For Multi-Collinearity

The Tolerance value and the Variance Inflation Factor (VIF) tests were carried out to test for multicollinearity problem. The VIF is the inverse of the tolerance value and measures the degree of variance to which multicollinearity problem inflates the coefficients of the regression model. The independent variables show no correlation if the VIF is zero. In addition, a unit VIF measure indicates a level of relation between the predictor variables; nevertheless, this level is not

sufficient enough to cause multicollinearity problems. Tolerance refers to the amount of variance exhibited by an independent variable that has not been described by other independent variables. Thus, Small tolerance values show multicollinearity problems. A 0.20 tolerance value that corresponds to a VIF of 10 is the maximum tolerable value (Takematsu et al, 2018). The table 4.15 below presents the collinearity statistics.

Independent Variables	Collinearity Statistics	
	Tolerance	VIF
Contractors' planning practices	.952	1.050
Compliance to industry standards	.967	1.034
Design implementation	.250	4.004
Financial management practices	.242	4.136

Source: (Survey Data, 2018)

Table 4.15: Results for Collinearity Statistics

The study findings indicate that the independent variables are not highly correlated because none of the explanatory variables has a VIF that exceeds 10 and tolerance value lower than 0.2. This implies that no adequate multi-collinearity that can make the regression unreliable and biased.

Test Of Heteroscedasticity

The Breusch- Pagan Test method was used to test for the heteroscedasticity in the error terms. The method involves regressing the squared unstandardized residuals on the independent variables and obtaining the significant value for the regression model from the ANOVA table. The Significant value is used to test the null hypothesis; Homoscedasticity in the error term against the alternative hypothesis; Heteroscedasticity in the error term. The rule of thumb states that if significant value is greater than alpha value we accept the null hypothesis otherwise reject it.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.067	4	.017	1.045	.388 ^b
Residual	1.780	111	.016		
Total	1.847	115			

a. Dependent Variable: Residuals squared
b. Predictors: (Constant), Financial management practices, Industry Standards, Contractors' planning practises, Design implementation

Source: (Survey Data, 2018)

Table 4.16: ANOVA Table for Breusch-Pagan Test

Table 4.16 above indicates that the significant value of 0.388 is greater than the alpha value of 0.05 hence conclude that homoscedasticity is present in the error term. This implies that the regression results are valid, accurate and unbiased since the assumption of homoscedasticity in the error term is met.

b. RESULTS OF REGRESSION ANALYSIS

The dependent variable project performance was regressed against the independent variables; financial management practices, contractors' planning practices, design

implementation and industry specific standards. The regression results obtained have been explained below.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.824 ^a	.679	.667	.33368
a. Predictors: (Constant), Financial management practices, Industry Specific Standards, Contractors' planning practises, Design implementation				
b. Dependent Variable: Project performance				

Source: (Survey Data, 2018)

Table 4.17: Table for Model Summary

The table 4.17 above gives the summary statistics of the model. The correlation coefficient, R is 0.824 while the R square, adjusted R square and the error term are 0.679, 0.667 and 0.33368 respectively. The R square implies that the independent variables account for 67.9% of the changes in dependent variables ceteris paribus. Thus, other factors account for the 32.1% for changes in project performance.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	26.148	4	6.537	58.709	.000 ^b
Residual	12.359	111	.111		
Total	38.507	115			
a. Dependent Variable: Project performance					
b. Predictors: (Constant), Financial management practices, Industry Specific Standards, Contractors' planning practises, Design implementation					

Source: (Survey Data, 2018)

Table 4.18: The ANOVA Table

The table 4.18 above helps in testing the significance of the regression model. Since the Significance value is 0.000 which is less than the alpha value of 0.05, hence concluding that the regression model is significant.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.793	.208		3.815	.000
Contractors' planning practises	.012	.031	.021	.372	.002
Industry Specific Standards	.710	.047	.830	15.178	.000
Design implementation	.101	.054	.200	1.860	.015
Financial management practices	0.124	.085	.160	1.466	.004

Source: (Survey Data, 2018)

Table 4.19: Regression Coefficients

From the regression coefficients at a significance level of 0.05, the study's model becomes as shown below;

$$Y = 0.793 + 0.012X_1 + 0.710X_2 + 0.101X_3 + 0.124X_4 + 0.33368$$

From table 4.19 above, the regression coefficient for contractors' planning practices is significant (Beta - 0.012, P value- .002). Therefore, contractors' planning practices positively influence project performance. In this case, if you

increase contractors' planning practices by one, project performance increases by 0.012. The results are in agreement with most of the reviewed studies such as those by Raji and Firas (2011), Liviu et al. (2011), Bent (2012), Agbenyega (2014), and Karimi (2016) who established that there is a positive relationship between project performance and contractors' planning strategies.

The regression coefficient for compliance to industry standards is significant (Beta- 0.710, P value- 0.000). Therefore, compliance to industry standards positively influences project performance. If you increase compliance of industry standards by one, project performance increases by 0.710. On industry specific standards, the positive association is supporting findings in literature reviewed studies conducted by Nyambura (2015), Githenya and Ngugi (2014), Orji et al. (2016), and Atamba et al. (2016) who also supported the association.

The regression coefficient for design implementation is significant (Beta- 0.101, P value- 0.015). Therefore, design implementation positively influences project performance. If you increase design implementation by one, project performance increases by 0.101. The study has also affirmed findings in literature reviewed on design implementation as held by Ghara (2016), Kogi (2013), Mundia (2013), Phyllis (2016), and Ama and David (2016) respectively.

The regression coefficient for financial management practices is significant (Beta- 0.124, P value- 0.004). Therefore, financial management practices positively influences project performance. If you increase financial management practices by one, project performance increases by 0.124. This is in agreement with studies on project performance and financial management practices as reviewed in the literature by scholars such as Oje et al. (2010), Gitau (2015), Mayie (2016), and Asinza et al. (2016) in their studies who indicated that there is a positive association.

V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION

This part presents the summary of findings, conclusions and recommendations of the study based on the specific intentions that spearheaded the overall research of evaluating how contractors' management practices on housing construction projects have contributed towards the increased cases of houses collapsing in Kisii County as a result of poor performance of the projects. Conclusions are grounded on the study revelations and analysis carried out in the preceding chapter. The recommendations have been reached with reference to the conclusions made after analysis of the data.

B. SUMMARY OF THE STUDY

The study focused on the general objective of investigating the influence of contractors' management practices on performance of housing construction projects in Kisii County, Kenya. The specific objectives that guided the study included investigating how planning strategies, industry

specific standards, design implementation and financial management practices influenced the projects performance.

The study reviewed recent scholarly works on the topic, while exploring various theoretical frameworks that support the assertions in the reviewed empirical studies as well as the problem statement. Both quantitative and qualitative techniques were used, in which case a sample of 136 respondents was used. Data was collected using structured questionnaires, and inferential statistics as well as descriptive statistics used for data analysis.

From inferential statistics and regression analysis, the study established that there is a positive influence on project performance by contractors' planning strategies, compliance to industry standards, design implementation, and financial management practices.

a. PLANNING STRATEGIES AND PROJECTS PERFORMANCE

With regard to the first objective of the study, planning strategies as contractors' management practice was found to be significant in project performance. It was found out that planned time for project construction and site preparation time did not delay the projects. Majority of the respondents supported the time aspect of project. However, it was established that average delay in payment from the owner to the contractor delayed the housing construction performance.

In addition, the study found out that availability of the resources as planned throughout the project duration was a major challenge in housing projects. The resources are paramount in any project and ought to be availed. The study's findings indicated that only two methods were used to represent the project planning and scheduling in housing projects. The bar chart method was commonly used followed by the critical path method. This raised questions about the awareness of S- curve and other methods for project planning.

It was also established that project team meetings were held on weekly basis for discussions of monitoring, updating and controlling of the progress of the project. Nevertheless, it was found out that a few respondents were not aware of the projects' meetings. These meetings were very instrumental planning practices with regard to the project's performance. The regression results revealed a positive significant relationship between the planning strategies and project performance. Therefore, an improvement in any aspect of the project strategies translates to positive change in project management.

b. COMPLIANCE TO INDUSTRY STANDARDS AND PROJECT PERFORMANCE

In line with the second objective of the study, it was established that compliance to industry standards is significant to project performance. Specifically, it was found out that project safety was usually implemented to a larger extent. The respondents gave their true opinions on safety measures put in place with regard to industry specific standards. It was proven that workers received trainings on construction standards as the majority of the respondents were for the opinion. Moreover, the study's findings revealed that concrete mixing

needs were affected by materials availability. Despite the favourable opinion given on the concrete mixing needs, a few respondents felt that they were not affected by availability of materials. It was also established that all projects were constantly monitored by government authorities. The industry specific standards were paramount on the projects performance.

Also, it was discovered that overall project safety factors were extensively implemented. The sound safety factors in the construction industry would translate to improved project performance hence decreased rate of collapsing houses. The findings of the study revealed that there were on-going formal safety and standards trainings received by workers of 4 – 7 hours on monthly basis. The trainings improved the efficiency and quality of workers output thus improvement in the housing construction projects performance. Finally, it was found out that there was extensive pre- task planning for safety conducted by contractor foremen.

c. DESIGN IMPLEMENTATION AND PROJECT PERFORMANCE

According to the study's third objective, design implementation was found to be significant to project performance. The study found out that project design implementation by construction companies was effectively achieved. The design implementation of the project was critical in assessing the project performance. Also, it was found out that the projects have quality designs given to use by the owner. Respondents applauded the quality designs since they aided in boosting the project performance. The study findings revealed that construction activities were constantly inspected to ensure quality and implementation, and critical milestones were constantly well monitored. The respondents unanimously agreed that the main factors considered while creating and implementing designs for construction projects with regard to design implementation were wastes around the site and climate condition around the site.

The study's findings found out that the main strategies in ensuring adequate design implementation were; project specific tasks identification, technology needs assessment, innovation practices and strategic planning. Also, a positive significant relationship between design implementation and project performance was established.

d. FINANCIAL MANAGEMENT PRACTICES AND PROJECT PERFORMANCE

On financial management practices as the fourth objective of the study, it was observed that it was also significant in project performance. The findings revealed that financial risk management is done in all projects that have been executed in the construction companies. The management of risk in the projects contributed positively to the housing construction projects performance. It was found out that budgets were prepared for all projects before execution. The study's results identified indifference among the respondents that owners of the projects were usually late in making payments. The cost schedules were found out to be associated with the estimated

time schedules. In addition, it was discovered that the actual value and the earned value concept was applied in controlling the cost for the projects in the construction company. Based on the study's findings, many companies did not have a cost engineer who was only responsible for dealing with cost control. However, most companies had a cost engineer. It was established that there were many situations where the project delayed due to late payment from the owner.

C. CONCLUSIONS

a. PLANNING STRATEGIES AND PROJECTS PERFORMANCE

The results clearly indicate that planning strategies are closely linked to the housing construction projects performance. The study concludes that planning strategies played a key role in influencing the overall projects performance. In line with first objective of the research, the study concludes that it has been adequately met. The application of sound planning strategies to the housing projects will greatly decrease the cases of houses collapsing across the country. Also, the contractors are obliged to adhere to the planning strategies and ensure the following; availability of resources as planned throughout the project duration creates awareness on the methods of project planning and scheduling in housing projects and project meetings for discussions of monitoring, updating and controlling of the progress are held regularly.

b. COMPLIANCE TO INDUSTRY STANDARDS AND PROJECT PERFORMANCE

The study concludes that compliance to industry standards is closely associated with project performance. Moreover, with regard to the second objective of the study, various aspects of industry standards revealed negative feedback with regard to project performance. The government authorities were faulted for increased collapse of housing projects. The study results are in line with the statement of the problem clearly indicated that adherence to construction industry standards especially in Kisii county would curb the menace. The workers trainings, concrete mixing needs and extensive pre- tasking planning for safety conducted by contractor foremen were identified as key aspects of industry specific standards to be addressed adequately.

c. DESIGN IMPLEMENTATION AND PROJECTS PERFORMANCE

Also, with regard to design implementation, it was established that it plays a vital role in housing construction performance. The study discovered a positive relationship of design implementation and project performance. The study results indicated that project design implementation and provision of quality designs by owners contributed immensely to curbing the collapse of housing projects as part of conformance to industry specific standards. The wastes around the site and climate condition around the site were critical in housing designs. In line with statement of the problem, the

main strategies to ensure adequate design implementation were; projects' specific tasks identification, technology needs assessment, innovation practices and strategic planning for the housing projects. In this regard, proper design implementation would greatly curb the collapse of housing projects in Kisii County as research sought to find.

d. FINANCIAL MANAGEMENT AND PROJECTS PERFORMANCE

Financial management equally was found to be having a positive effect on the dependent variable (housing projects performance). The contractors who prepared budgets for all projects before they are executed and where cost schedules are associated with the estimated time schedules hence this was not found to reduce the rate at which the housing projects collapses. The study findings established that the actual value and earned value concept is applied in controlling the cost of a project. The research objective is achieved since financial management in line with research problem is adequately met.

From the above findings and discussions, the research objectives are adequately met. Thus, the study is a success. Therefore, the contractors' management practices; planning strategies and conformance to industry specific standards are of great relevance to housing construction projects performance. Nevertheless, design implementation and financial management do not have a direct influence on the housing construction projects performance. Addressing the issues raised would decrease the rate of housing projects collapsing in Kisii County and other parts of the country.

D. RECOMMENDATIONS

a. RECOMMENDATIONS FOR IMPROVEMENT

Based on the research findings and conclusions, the recommendations follows are made with respect to each specific objective.

The study recommends the contractors to ensure that planning strategies are adhered to in housing projects. Efficient planning practices will result to improved projects performance. The contractors should ensure time management in site preparation and planned time for construction of the project to avoid delaying the projects. Also, frequent project team meetings to discuss the monitoring, updating and controlling of the progress and creating awareness on methods of project planning and scheduling are recommended.

The study recommends that all the housing construction projects should be frequently monitored and inspected by government authorities to enhance the quality of the projects. In addition to that, it is recommended that materials for the housing construction projects should be availed to enhance continuity of projects. The construction materials are essential for the sustainability of the housing projects. Further, overall projects safety factors and pre- task planning for safety conducted by the contractor foremen are recommended to be extensively implemented in the housing projects. The project safety factors will ensure owners are committed to constructing proper houses with high standards. The workers

are recommended to be acquainted with the relevant skills to enhance productivity and proper construction of the houses.

The study recommends that proper design implementation should be put in place on the housing construction projects. Provision of quality projects designs by the owners is encouraged to curb the collapse of housing projects. Also, while creating and implementing designs for construction projects, the study highly recommends the consideration of the wastes and the climate condition around the construction sites. This will enhance a strong foundation for the construction of the houses hence improved housing construction projects performance.

The study also recommends financial management practices to be enhanced by contractors in housing construction projects. Ideally, it should be done in all projects before they are executed. As such, it will ensure the projects do not incur financial challenges during the construction process. Fundamentally, financial management practices ensure that all resources for the projects are well utilized for the benefit of the projects.

b. RECOMMENDATIONS FOR FURTHER STUDIES

Based on the study's limitation, future studies are recommended to focus on large sample sizes and a wider research scope while seeking to improve the respondent's response rate as well as seek to obtain honest responses. This is because the researcher envisaged that fear of being investigated might have made respondents to give dishonest answers to some questions.

c. RECOMMENDATION FOR POLICY IMPLICATION

On policy implication, the research recommends that NCA and NEMA should focus on establishing policies that enhance conformance to construction standards as well as improving contractors' planning strategies.

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