PROJECT IMPLEMENTATION FACTORS AND PERFORMANCE OF ECDE BUILDING CONSTRUCTION PROJECTS IN KITUI CENTRAL SUB COUNTY, KITUI COUNTY; KENYA

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A Research Project Report Submitted to the School of Business and Management Science in Partial Fulfillment of the Requirements for the Award of the Degree in Masters of Arts in Project Planning and Management.

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DECLARATION

This Project is my original work and has not been presented for the award of degree in any other University

Signature:  ……Date:……10/11/2022……

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L50/38273/2020

This project has been submitted for review with our approval as University Supervisors. I confirm that the candidate under my supervision carried out the work reported in this project

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DEDICATION

Dedicating my research to my dear father Martin Ngesa, my dear mother Angeline Olengo, my sister Lillian, and brothers Desmond, Davis and Martin Jr. My family's support and foundation has enabled me pursue my education to this height and further more.

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

Public projects play an important role in promoting socio-economic development in Kenya. However, these projects are not completed on the planned contract period, with poor quality. Research has shown how project performance has been associated with project implementation. This project examines project implementation factors and performance of ECDE building construction projects in Kitui Central Sub-County, Kitui County, Kenya. It looked at four objectives: - quality control processes, scope management team, contractor supervision, and community engagement. With a target population of 150 people, the research was supported by 108 respondents using interview guides and a questionnaire to collect data. Of the 108, 73 respondents accepted to participate in the study. Data was analyzed using descriptive statistics; - frequencies, percentages and mean. The results were that the scope management team influenced performance with (r=0.454) (p=0.000), community engagement influenced performance with (r=0.281) (p=0.010), quality control processes influenced performance with (r=0.261) (p=0.005), and contractor supervision influenced performance with (r=0.189) (p=0.009). ANOVA test and test of hypotheses were carried out. The study showed a strong to moderate positive correlation between all four study objectives and performance with (p=0.00) for all. Significant areas that need to be worked on in each objective, for instance, team motivation, team training and flow of information between contractor and scope management team and the community were also revealed from the finding. These findings are important and should be taken into consideration when the county government implements more ECDE building construction projects. It would be recommended that the study should be conducted in more counties, with larger sample sizes. Further studies can be carried out on the application of project implementation factors in similar projects in this sector.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The fiscal gain emanating from the building construction industry in the world is mega. Refining the implementation process of building projects would directly improve projects in this industry and the economy. Projects are deemed successful when they fulfill performance, budget, time goals (PMI, 2018). These three represent a basic degree that measures successful projects. While there are other project success criteria for example; environmental impact and creation of value, there is still an emphasis on completing projects within budget, on time, and specifications. This is the primary process toward satisfying other success criteria (Bakr, 2018).

Most government projects in the world are mostly affected during the implementation phase. Several of the projects experience considerable cost overruns, completion delays and failure to deliver on the agreed outcome. One a major client of the construction industry is public sector and they play an integral role in funding basic infrastructure which promotes economic activities like affordable housing (Ong`ondo, Gwaya, & Sylvester, 2019). Despite projects in the construction industry bringing physical developments that boost the economy, cost and time overruns are observed (Memon, 2012). The public sector receives heavy criticism over its inadequacy in project delivery hence, time and cost overruns. Research conducted in Malaysia on public construction project performance reveals that there is a persistent reoccurrence of project delays and abandonment which has been a cause of public concern (Jatarona, Yusof, Ismail, & Saar, 2016).

During the project implementation phase, there are certain factors like stakeholder management that should be considered. Major stakeholders often have some position of power on a project. These stakeholders are directed by the need to manage project performance and they impose their will to achieve the desired goal. Therefore, they can affect the progress and even types of outcomes associated with any project. Some stakeholders will become more significant at a given project at a particular time than others and their matching level of power and influence. Poor relationship between these stakeholders would affect completion of a project due to conflict and removal of support (Jin, Zhang, Liu, & Zuo, 2017).

Research steered in Ghana showed the various consultants in government projects influenced the performance of the said projects Cost and time overruns are seen in government projects and Dadzie, Abdul-Aziz and Kwame, (2012) agree that political influence, design team experience; creativity in controlling cost; the poor relationship among team members; project value; timely decision making, project timeline by consultants influences project performance. Basheka & Tumutegyereize (2012) agree that contractors face client, cost, and capacity-related challenges that contributed to poor performance.

Development track records are approaches to making economic strides in developing countries like most of Africa and Kenya. Initiation and implementation of projects improve the citizen's quality of life (Competition Authority of Kenya, 2017). The success and failures of projects are directly related to the rate of development. To achieve development, performance, and success of projects is very vital. The construction sector is vital in the development of Kenya's economy (Ong`ondo, Gwaya, & Sylvester, 2019). This sector contributes to the gross domestic capital formulation and generates production capital and employment creation. The government of Kenya funds projects to realize its development goals by 2030. Study conducted by Ong`ondo, Gwaya, & Sylvester (2019) revealed that 30-60% of projects started in developing countries are faced with cost overruns with 35-75% facing time overruns. Additionally, Auma (2014) notes the poor performance of construction projects in Kenya of which 70% experience cost and time overruns of approximately 50%. Timelessness in payments of contracts has greatly influenced the completion of government projects. Research steered by Kyalo and Mutwiri (2015) showed that most of the projects recording poor performance are caused by delays in completion. As such, benefits that could have been accrued from completed projects are not realized.

Kenya is comprised of 47 counties with semiautonomous governments. The functions of counties are devolved and roles divided to county ministries and departments (Competition Authority of Kenya, 2017). Some of these functions include development projects which aim at improving people's livelihoods. Counties have a County Integrated Development Plan that has major capital projects with their budgets and a clear source of funding. According to Mutheu and Muturi (2018) it is important to have access to funds, budget control and also financial management training to positively improve project performance in Kenya.

This research tackles of the inefficiencies in public construction projects. There are severe implementation challenges in developing countries (Ong`ondo, Gwaya, & Sylvester, 2019).

One of the most causes of project delays is community engagement factors during implementation. A number of county construction projects have recorded time overruns. Project delays frustrate the development process which in turn costs the society. Time is widely used to measure the success of a project. Seboru (2015) observed delayed payment, bureaucracy, and inadequate planning by contractors as some of the causes for project delays. Also noted was inefficient management of the construction being detrimental to the performance of these projects. Therefore, the scope management team is critical during implementation. A positive outcome during construction project phases highly influences the successful execution of a construction project (AlBarami, Thiruchelvam, & Ibrehem, 2020).

As previously mentioned, project completion is based on the standard project performance constructs of time, specifications, and budget (Ong`ondo, Gwaya, & Sylvester, 2019). In most government projects, performance is hindered during implementation in the project cycle as there are a lot of causes for delays. Just as in other counties in the country, Kitui County's construction projects performance requires a lot of improvements in its efficiencies and effectiveness. The public works department manages projects in the Education sector whose problems often emanate from quality of works done, the contractor supervision factors, scope management team, community engagement and political influence among others. This study was vital in examining project implementation factors and performance.

1.1.1 Project Implementation

Most project managers have an operative focus on getting the job done. During project implementation, project stakeholders have specific interest and goals in a construction project and this leads to how the project performs. The community, scope management team, and contractor and make decisions that lead to the completion and satisfaction of a construction project. Relationship among them is very key to determining project success. A strained relationship could lead to projects being delayed or never realized. According to the study done by Nevstad, Tage and Eskerod (2021) mutual objectives and commitment, collaborative problem solving, and trust are observed to promote performance.

1.1.2 Project Performance

Meeting the objectives of a project determine its success (PMI, 2018). The success of project management is seen from how the scope management team executes the project plan. Project ownership success is achieved from the project owner (client) realizes the business case

(AlBarami, Thiruchelvam, & Ibrehem, 2020). All project participants have particular interests in a building project. Meeting these interests results in fulfillment of the project. They make decisions that lead to finishing the building project. Therefore, having mutual objectives, clear leadership, stakeholders fulfilling their commitments and being collaborative for a predetermined goal, would lead to a successful project (Nevstad, Tage and Eskerod, 2021). Project success is used to show the achievements of projects at their completion. Project performance is an outcome variable when conducting research studies. Project performance is multidimensional, involving different participants at different times, weighing in on project success. The project team, the contractor, the project beneficiaries, the project managers have their own perspective on project performance (Kwak, Liu, Patanakul, & Zwikael, 2014).Time plays a factor in viewing project performance, with short term or longer-term interests. Therefore, a comprehensive project performance criterion should represent different views interests and dimensions. Therefore, project performance is viewed widely on satisfaction levels, cost implications, time period, achievement of project objectives, quality, environmental milestones among others.

1.2. Statement of the problem

County governments have received devolved functions since inception in 2013. County government departments carry out their own functions catered to by the recurrent budget to fund development projects. There have however been complaints of development project delays, stalled projects, and conflict arising from project teams (contractor, design, client, supervision teams) among others. According to Monyoncho, (2015) the cause of these problems is usually poorly documented. Projects funded by county governments deliver services to those at grassroots levels. Addressing these problems of poor performance of development projects particularly education construction projects that affect people in the counties is necessary. Project completion yields improved standards of living (Competition Authority of Kenya, 2017).

Poor delivery of government projects is related to problems in performance (Ong`ondo, Gwaya, & Sylvester, 2019). There are numerous factors that contribute to this problem. Mutheu and Muturi, (2018) mention financial factors as a major cause. Research by Nevstad, Tage, and Eskerod, (2021) revealed that the project manager, top management, and project owner have different goals for performance and with mutual project objectives with trust between the partners being very important in meeting time, cost, and technical specifications.

Research steered by Basheka & Tumutegyereize, (2012) exposed that the contractor's use of resources, understanding of contract modifications, working well with the project team, and the community, contributed to improved project performance in Uganda. Nyangwara and Datche (2015) revealed that the project owners, consultants, and contractors, all agreed that delay in claim approval and payments to the contractor was the most important performance factor in addition to project management and project environment factors. Basheka and Tumutegyereize, (2012) recommended that contractors consider political environment risk in their cost estimation.

Most of the public projects managed by the public works department in Kitui County don't meet performance expectations. Some of the challenges experienced are the contractor supervision, quality control processes, conflict among project members, community engagements and satisfaction, and scope management team factors. There are a number of projects that miss the mark in time, quality and cost performance, whereas others miss the mark in other performance indicators (Ong`ondo, Gwaya, & Sylvester, 2019). Many projects are marked with poor performance due to obstacles by clients and project team due to poor quality, amendment of design, additional works, variations, delays in fund disbursement, and introduction of special items in the design and all of these happen during the project implementation stage. The construction industry is project based, therefore there is reliance on client, community, consultants and contractors to achieve project goals (Le, Elmughrabi, Dao & Chaabane, 2020). Therefore, this study looked at the project implementation factors on the performance of ECDE building construction projects in Kitui Central Sub County, Kitui county, Kenya. This study results are crucial in improving the overall project performance and overcoming performance challenges.

1.3. Purpose of the study

To examine the influence of project implementation factors on the performance of ECDE building construction projects in Kitui Central Sub-County, Kitui County, Kenya.

1.4. Objectives of the study

The objectives were; -

1) To determine how quality control processes influences the performance of ECDE building construction projects in Kitui Central Sub County, Kitui County, Kenya

2) To establish how the scope management team influences the performance of ECDE building construction projects in Kitui Central Sub County, Kitui County, Kenya.
3) To establish how contractor supervision influences the performance ECDE building construction projects in Kitui Central Sub County, Kitui County, Kenya.
4) To determine how community engagement influences the performance of ECDE building construction projects in Kitui Central Sub County, Kitui County, Kenya.

1.5. Research questions

The research questions posed; -

1) How does quality control processes influence the performance of ECDE building construction projects Kitui Central Sub County, Kitui County, Kenya?
2) In what way does the scope management team influence the performance of ECDE building construction projects in Kitui Central Sub County, Kitui County, Kenya?
3) How does contractor supervision influence the performance of ECDE building construction projects in Kitui Central Sub County, Kitui County, Kenya?
4) In what way does community engagement influence the performance of ECDE building construction projects in Kitui Central Sub County, Kitui County, Kenya?

1.6 Hypothesis

The Hypotheses tested for this research were the following; -

1) **H_{01}** There is no significant relationship between quality control processes on the performance of ECDE building Construction projects in Kitui Central Sub County, Kitui County, Kenya
2) **H_{02}** There is no significant relationship between scope management team on the performance of ECDE building construction projects in Kitui Central Sub County, Kitui County, Kenya.
3) **H_{03}** There is no significant relationship between contractor supervision on the performance of ECDE building construction projects in Kitui Central Sub County, Kitui County, Kenya.
4) **H_{04}** There is no significant relationship between community engagement on the performance of ECDE building construction projects in Kitui Central Sub County, Kitui County, Kenya.

1.7. Value of the study

Policy; there can be policy formation from the findings and conclusion and practices that can be applied to ensure public, private, and government projects are a success. The national and county government can formulate policies that would target project performance across all levels of government. A supportive policy framework will enable projects to perform to the expected goals. This will improve the efficiency and effectiveness of projects implemented by county governments.

Practice; Professionals in construction and project management industry will have researched data on project implementation factors that can be used in improving, and upgrading their construction projects in all sectors.

Research; The study will also benefit other researchers in using this project a testimonial in different areas of interest.

Discipline of project management; Contribution will be made to the discipline of project management from the project findings. Studying project implementation factors and their influence on performance of projects will add more knowledge and fill in the research gaps in the field.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Chapter two features literature on project implementation factors, quality control processes, scope management team, contractor supervision, and community engagement. The literature search further discusses project performance and project success in projects. Additionally, theoretical frameworks examined the theory of constraints and theory of project management as theoretical concepts and connects the influence of project implementation factors and project performance.

2.2 Theoretical framework

This research study grounds were laid on by these theories.

2.2.1 Theory of Constraints

Eli Goldratt explored this theory in 1990. The theory explores the potency of a chain. Its potency is as robust as its feeblest link. From the theory, there are no two frailest links and there is a limited number of constraints (Goldratt 1990). Refining system performance would require refining the weakest link. Investing in anything else apart from the weakest link will increase the general costs. However, the yield of the entire system will not increase. This theory finds blockages in the process and system to improve performance. These blockages that hinder performance are Cost, time, scope, and quality. There is one feature in the system that is hindering it from reaching greater heights. This hinderance has to be found and kept in mind, while managing the entire system. Therefore, the mindset, measures that drive it, and organizational methods are organizational change levels that are focused on. All projects contain constraints that affect its performance, and they must be overcome to ensure project success. This theory focuses on the entire system rather than a single resource or task. Therefore, unless the weak links are strengthened, the strong links will not increase success. The project manager is required to find and scrutinize the constraint, augment resources to it, and craft adjustments to develop the ability of the constraint. This would involve support from the contractor, the scope management team and the community to overcome the constraint. Project management involves many participants where needs and constraints bring many

complications, hence the need for management. Managing projects is a task that deals with opposing constraints on time, scope, and cost which are adopted as elements of project success.

This theory applies in critical chain management. It encourages managers find hinderances in the project system and accomplish the projects. An increase in project cost is caused by delayed project completion. The study used the theory to find constraints during project implementation, constraints from quality control processes, scope management team, contractor supervision, and community engagements in ensuring the performance of ECDE building construction projects. A project manager would need to finish problematic responsibilities and maintain the contract period, contract sum and allocated resources to improve the performance degree of infrastructure projects. Most implemented projects in the county are experiencing time delays. Time delays increase the cost of the project. This theory steers the scope management team to find constraints during planning, during the implementation process and in its systems to increase the performance.

2.2.2 Theory of Project Management

Turner's (1993) theory features models and techniques used for setting up and controlling complex activities. This theory shows how actions influence the goals that are set (Warburton & Cioffi, 2014). Project management is guiding and organizing human and other resources all through the project cycle and utilizing managing practices to realize a prearranged objective of time, cost, scope, and satisfaction of the client, the community, the contractor, and the scope management team (PMI, 2018). The theory of project management is composed of scope management and planning processes (Warburton & Cioffi, 2014). The theory of execution highlights planning and execution stages. The theory has been criticized for fitting a number of projects yet contemporary projects are affected by environmental, technological and market dynamics (Lannon, 2015). Warburton and Cioffi (2014) promote this theory arguing that it provides an essential relation between interrelated project activities, how to measure projects and guiding future project improvements. This theory provides interrelationship in activities during the project cycle which project implementation would benefit from in achieving project performance. Studying factors such as quality control processes would borrow principles of project management on proper planning that would enable quality standards to be met.

2.3 Empirical Literature

2.3.1 Project Performance

A project is an undertaking carried out to realize change or draw benefits. The gage of a successful project is that it brought out a product or service successfully (PMI, 2018). In the same regard, project management success encompasses managing a project to the agreed scope, time, and budget limit, achieving quality and customer satisfaction (Lannon, 2015). The measures of project performance involve that the project requirements and project outcomes are achieved and presented within the cost and expected timeline. Effectively managing projects contribute to an organization's performance thereby enhancing the status of the organization. Project execution shows how much of the project outcomes have been achieved practically, expectations have been accomplished, and clients are fulfilled. Some of the factors that contribute to good project performance as discussed by Kwak, Liu, Patanakul, and Zwikael (2014) are; predetermined timelines and checkpoints, quality planning, effective leadership and accountability, and complete feasibility studies.

The popular criteria for project success include completion period, contract sum remaining on budget, and predetermined outputs (PMI, 2018). They are also referred to as the three constraints of project management and aid in evaluating project failure. These constraints look at the process of execution and the value of the project as seen by the client, and project team as the deliverable.

Projects were said to be fruitful after achieving time, cost, quality and performance (Ong`ondo, Gwaya, & Sylvester, 2019). When a project is completed on time, scope, budget, and to settled quality levels, client satisfaction, safety, productivity, environmental quality, or performance then the project has peaked its performance. Performance is seen through indicators that can be evaluated like time, cost, satisfaction, quality, health and safety, and business performance (Ong`ondo, Gwaya, & Sylvester, 2019). Salvi (2020) agrees that quality control should be embraced by project managers to enhance the specifications and consistency. Project Success adapts to completion on contract period, on contract sum, on right presentation and requirement level recognized by the customer, within jointly arranged variations, without disrupting workflow and organization culture (Lechler & Gao, 2012). Lechler and Gao (2012) note that client consultation, project mission, project planning, project goal top management support, technical issues, personnel issues client acceptance, project control, and communication and overall stakeholder satisfaction should be regarded as factors for project

performance. Chandra et al (2010) denote that human, and project factors and procedures, and the peripheral environment should be at the core of project operational performance to achieve project success. The system of critical success factors aids in refining performance levels at project stages like design, construction, and maintenance. Bizon-Górecka and Górecki, (2017) agree that ignoring the influence of individual stakeholders, the project objectives and the stakeholders' goals during implementation increases the cost of the project and its duration.

2.3.2 Project Implementation Factors

Project Implementation incorporates basic facets of time, cost, quality and satisfaction that should be assessed for project performance

The client, contractor, scope management team and the community are people/groups that may be affected by the decisions made and impact the application of their choices. Implementation of county government projects is composite because of fulfilling stakeholder needs therefore, the commitment of the client, community, contractor, and scope managers are critical. Substantial evidence from Nalewaik and Anthony (2015) shows that a mutual relationship between them improves their commitment to public projects since they value the legitimacy of everyone's views.

Research by Kwak, Liu, Patanakul, and Zwikael, (2014) showed that the utilization of project management showed a positive effect on the success of government projects. Their research also identified factors affecting poor project performance as lack of leadership and management skills and underestimating project complexity and costs. One characteristic of government projects is that they are susceptible to political dynamics, therefore, proposed project ideas should be in line with current legislation and aligned with the strategies of government agencies (Kwak, Liu, Patanakul, & Zwikael, 2014). Ong`ondo, Gwaya, and Sylvester (2019) examined performance models in Kenya for over fifty years and established a chronic poor performance trajectory and identified technical efficiencies and project management effciencies during project implementation are some of the factors to look at to improve performance. Salvi, (2020) mentions that embracing the concept of quality assurance in the development field would lead to a reduction in construction costs, hence improved overall project performance. Research on quality management procedures by Oyebisi et al (2019) showed that quality grading practices like the obligations of management to quality is keen to achieving operative quality observations in building projects. Salvi (2020) also agrees

that quality control should be embraced by project managers to augment the average performance and similarity of the project.

Abdi and Mbugua (2019) research on project design factors revealed that community involvement, and the commitment of the project owner, contractor and scope management team also influenced good project performance on development projects. Kariuki and Mbwisa (2014) agree that community participation promotes project success and ownership of the project. Their research also showed that communication of the project information, understanding and valuing their participation had a huge impact in fostering community support and promoting a sense of ownership. Rathenam and Dabup (2017) agree that understanding community engagement influence would allow for a possible improvement of time and cost measures in public project performance.

Scope management improves the participation of project owners and end users which ultimately improves the project outcome. Achieving project definition comes form uptaking stakeholders' input. According to Fageha and Aibinu, (2013) having a well-defined project would meet the expectations of the client and the community with no compromise on the intention of the project. The client and the community should voice their ideas so that no section of the project's scope and quality is missed. That's why scope management is imminent in project implementation.

Quality control processes ensure work is done with the required quality and durability. It is multidirectional. Howarth and Greenwood (2018) suggest that testing materials to be used in the construction, knowledge of methods and techniques of the contractor and staff, and the materials to be used for construction should be conforming to the specifications required. The quality conforms to requirements or specifications. Failures and defects in construction services may lead to large costs (Oyebisi, Ede, Olutoge, & Ngene, 2019). When there are minor defects, the services would be impaired and reconstruction would be required. The requirements for quality control processes in construction projects has increased significantly because of high user expectation and advancement in technology

2.3.3 Quality Control Processes and Performance of ECDE Building Construction Projects

Quality is a degree set for inherent characteristics to fulfill requirements (Howarth & Greenwood, 2018). Quality is achieved when client needs and project team needs are met.

Employing quality control is a tactical management mechanism with benefits. Howarth and Greenwood (2018) describe the principles of quality control processes as establishing objectives by contractors to control resources, allocation of responsibilities and roles to personnel, developing participation of people, a realistic method to decision making, leadership, and process approach.

Quality control processes are management activities used in the construction process to set targets of agreed standard of performance and cost (Oyebisi, Ede, Olutoge, & Ngene, 2019). Quality control lays in the contractors, the scope managers and project owners. The contractor should achieve quality targets laid by the project owner (Elbashir, 2018). Quality control processes can be implemented using efficient engineering practice, a professional approach and upright construction procedures and quality. It is the idea of assembling men, materials, methods, and machines work at the calculated ways and guarantee the end product of the construction meets the agreed specifications and fulfills owner and user requirements (Howarth & Greenwood, 2018).

Efficient running of a building project throughout the project life cycle is allied to quality. Faulty building arises when there is no conformance to quality, standards and specifications. Counteractive acts for substandard works during building stages creates wastage in construction costs. Kwak, Liu, Patanakul, & Zwikael's (2014) research on best practices for managing government projects mentions robust design and quality management processes as important practices to be considered.

When clients closely involve themselves in managing projects, they are more satisfied with the outcome. What may come up like late approval in time delay, inadequate specification and drawings, and variations by clients all through implementation are mentioned by Jatarona, Yusof, Ismail, & Saar, (2016) as influencing the performance of public projects. Major activities occurring during this phase would require adequate client involvement such as attending site meetings, making payments, making quality checks, and providing inputs in design changes and variations (Lechler & Gao, 2012)

Project planning establishes project actions, apportioning resources, monitoring, and control (PMI, 2018). Some of the planning tools include the Gantt Chart and Network Techniques. Gantt vertically showcases project actions with timelines. Network Techniques include CPM, PERT, and GERT. Status reports and Work breakdown structures and are also included (PMI,

2018). These are the tools used to monitor the progress of the project implementation phase as they are important in determining and maintaining quality checks (Elbashir, 2018).

Project Control starts during project inception and determines the quality that will be delivered in the project. The variance analysis approach comprises of a looking at the actual cost against the budget to see is there is a variance. Performance analysis looks at the project being on, ahead or behind schedule, or on or below budget or performance inclination (Chandra, Indarto, Wiguna, & Kaming, 2010). Quality control processes maintain uniformity in the construction process hence reducing costs. To achieve this, conducting an inspection, verification of soil features, structural wellbeing, drawings and designs, sturdiness, inspecting the eminence of supplies, provisions, an inspection of equipment and testing of materials. The variables that were used in this study include project control, monitoring and evaluation, project schedule, inspections and testing of materials and progress on the construction site.

2.3.4. Contractor Supervision and Performance of ECDE Building Construction Projects

A contractor consents to work for another party for a set price. Contractors hired receive desired results and schedules (Dadzie, Abdul-Aziz, & Kwame, 2012). The contractor transforms the vision of the designer from a drawing to physical construction. They start their work during the project implementation stage, after the site handover. The selection of contractors is key to the overall performance of the project (Ajewole, 2022). A contractor representative like the site manager runs the construction work in compliance with the construction documents and laws and supervision of their work ensures conformity to these laws. They can also ask the client and scope management team for variations in design clarifications to smoothen the construction course and promote the wellbeing of workers (Bizon-Górecka & Górecki, 2017). Basheka and Tumutegyereize (2012) agree that contractor performance during project implementation faces capacity, client-related, and environmental challenges. They also looked into performance variables like contractor completing work on time, correcting deficiencies, use of high-quality material, adoption to changes and meeting needs and these are areas where contractor supervision focuses on to promote conformance of agreed quality checks. In government projects, contractor selection is limited to the procurement department, which checks on competency levels amongst other checklists.

2.3.5. Scope Management Team and Performance of ECDE Building Construction Projects

Research from Kwak, Liu, Patanakul, & Zwikael (2014) reveal that projects that utilized knowledge from a number of expert sources led to fast completion times and few hitches with effective leadership and due diligence. The scope management team controls the scope of project deliverables managing the community expectations, client expectations and contractor delivery of the project. The scope management team in this study includes the public works department design, supervision, and project management team. A project manager is the pivot and is vital to project success. For desired results, the project manager's human, conceptual and technical skills are strong skills to possess (PMI, 2018). The project manager's variables that can be looked at in this study would include commitment, authority, and leadership. Lack of leadership and management skills also affects project performance as supported by Kwak, Liu, Patanakul, & Zwikael. (2014) Leadership from the scope management team drives the project sponsor, community, and contractor towards achieving the goals of the project. The design team performs their roles during the construction process. They develop the design in compliance with land development, and environmental constraints on the construction project (Nalewaik & Anthony, 2015). The designer respects the applicable regulations, technical know-how, and norms (Bizon-Górecka & Górecki, 2017). Knowledge of project management tools like planning tools, control tools, analysis, allocation of resources, and monitoring and evaluation are also critical for scope management. This team designs and supervises projects from inception. They review and update design details, monitor contractor operations, certify for payment, costing of variation, and applications for extension of time, and they complement contractors' efforts to ensure project completion.

The leadership style and management of the scope management team are key in project delivery, project performance and success. Project management tools like project planning, project control, and project analysis tools helps the project manager during project delivery (PMI, 2018). Therefore, the variable considered were leadership skills, effective communication, and team relationship.

2.3.6. Community Engagement and Performance of ECDE Building Construction Projects

A community is an indistinct concept. It features belonging, connection, inclusion, uniqueness, habitation, segregation, and time (Rathenam & Dabup, 2017). It is considered both a social and spatial phenomenon. Communities are complex and so in the absence of the local authority, community representatives are to be acknowledged and included in the project process (Thwala, 2009). Community engagement and satisfaction on projects are aimed at equipping communities, increasing competencies, promoting project success, and community fulfillment. Project managers should develop a community engagement strategy so that the clients and the contractors are engaged from project initiation. Thwala (2009) identifies the importance of identifying the importance of involving the community and amassing local information on project inception for successful project performance. Project managers deliver uninterrupted material and response and improvements on the project to the users throughout the design and implementation phases (PMI, 2018). This ensures effective communication and sharing of information and stakeholder needs. According to Nalewaik and Anthony, (2015) the collaboration of the community in the entire project stages could produce a negative impact on insights into project success through cost and schedule, community fulfilment and usability of project infrastructure. Conflicting priorities, fulfilling a fluctuating and diverse population, and change management are some of the issues that can lead to poor project performance.

Community involvement especially with development projects of various sizes is very significant to project success (Thwala, 2009). For the acceptance and takeoff of a project community ownership is significant. Project performance is affected by a lack of support from the project users. (Kwak, Liu, Patanakul, & Zwikael, 2014). Rathenam and Dabup (2017) noted that the local community was a major factor in influencing both time and cost. Therefore, understanding the phenomenon of community involvement in community projects opens a leeway of refining time and cost gauges in construction projects.

2.4. Conceptual Framework

Under this topic, Pheng & Hou (2019) mention a diagrammatical presentation of variables in the study. Kothari (2014) describes this framework as having independent variables, dependent variables, and moderating factors. It illustrates the interrelationships between these variables as shown for this study

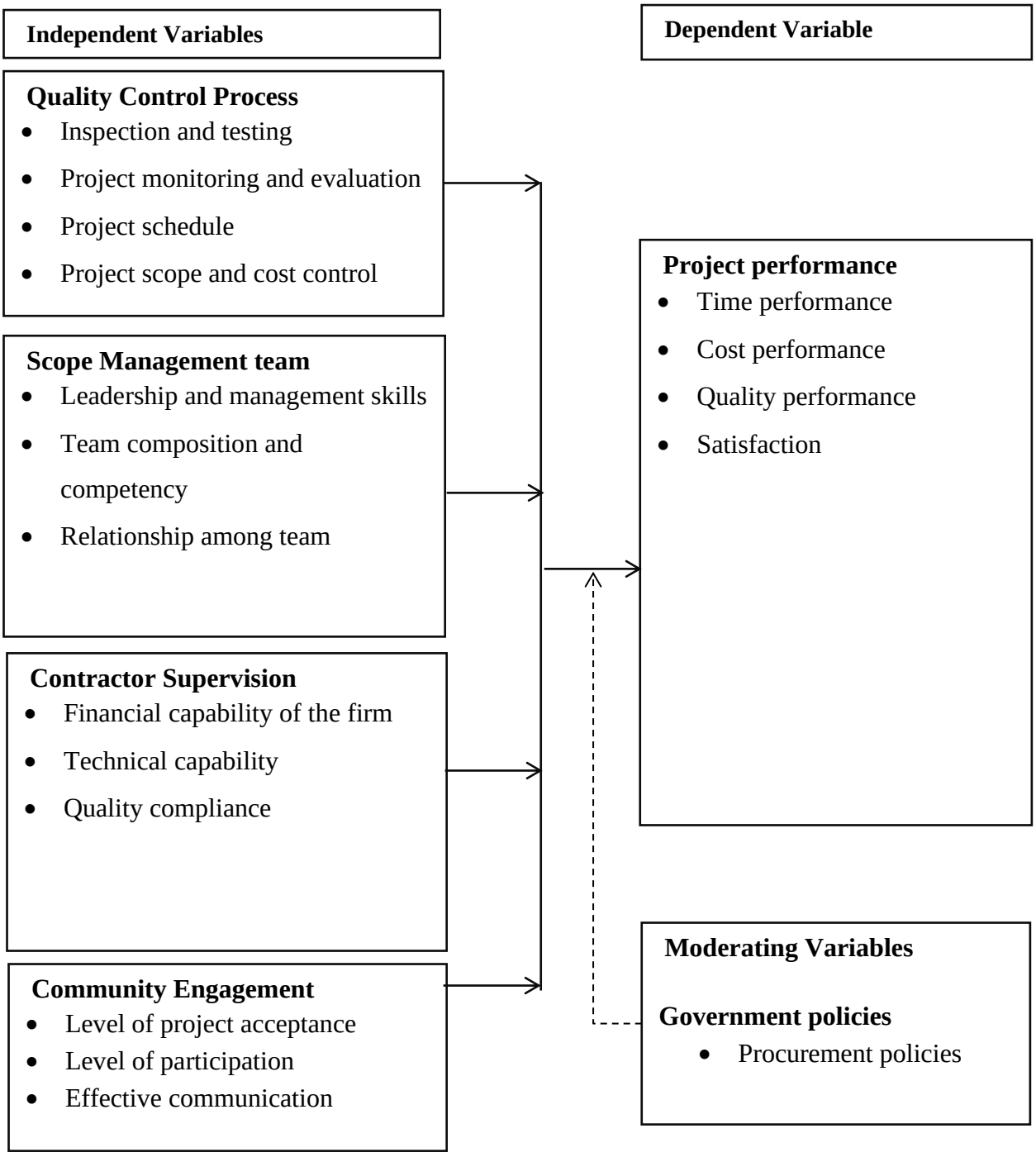

Figure 1 Conceptual Framework

2.9. Summary of Research Gaps

Author	Title	Result	Gap	Contribution of the current study
(Jatarona, Yusof, Ismail, & Saar, 2016)	Public construction projects performance in Malaysia	The most problematic construction stages were design, contract, implementation and closure.	Focusses on developing country	Quality control process on ECDE projects in Kenya
(Chandra, Indarto, Wiguna, & Kaming, 2010)	Model of Stakeholder Influence on Project Success: Finding from Construction Project in East Java	stakeholder impact, engagement, and psychological empowerment correlated to project success.	Participation levels of the community	Factor in on Level of participation of community on ECDE projects
(Bizon-Górecka & Górecki, 2017)	Influence of Selected Stakeholders of Construction Investment Projects on the Course of Project	Show investor, designer and contractor influences during construction process	Construct of community engagement influence on performance	Indicators of Community engagement will be studied.
(Mutheu & Muturi, 2018)	Project Specific Factors Affecting	The study examined that the general	Contractor supervision, scope management	Other indicators studied; scope management

	Performance of County Government Projects in Kenya: A Case of Nyandarua County	financial factors were statistically important on the performance of Nyandarua county government projects	team, community engagement is not studied.	team, community and contractor factors
(Fageha & Aibinu, 2013)	Managing Project Scope Definition to Improve Stakeholders' Participation and Enhance Project Outcome	Well defined project meets stakeholders' expectations and improves project outcome	Doesn't research deeper into all the stakeholders (client, community, contractor) expectations	Leadership in managing scope
(Rathenam & Dabup, 2017)	Impact of Community Engagement on Public Construction Projects -- Case Study of Hammanskraal Pedestrian Bridge, City of Tshwane, South Africa	Exploring community participation improves time and cost performance of public projects	Relationship between community and contractor and project managers	Focus on community engagement in ECDE projects in Kenya

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The study framework followed is outlined below.

3.2 Research Design

Kothari (2014) denotes that the research design shows the tactic to be used in partaking the research. It aligns the ways of data collection keeping in mind the weight of the research drive and economic conditions. The strategy chosen is suitable for the kind of research questions, degree of emphasis on contemporary matters and extent of control (Kothari, 2014).

Descriptive survey research was suitable due to its connection the features of our target population. This cross-sectional survey design presented a complete view of conditions at a specified time and provided a method that would progress to questions. From Kontogianni, (2016) a survey is a process where a situation is studied to explain the reason for its nature. It was also inexpensive and fast since it gave self-supporting facts on the respondents, their attitudes, habits and feelings. The researcher will be able to make accurate phenomenon relationships, inferences, assessments and events.

3.3 Target population

It is the gathering components that a researcher would like to come up with a number of inferences (Kothari, 2014). The target population was those that were present in the design, supervision, and execution and interacted with the client or, contractor and the community. The study identified ECDE building construction projects in Kitui Central Sub-County. With a total of 33 ECDE building projects, 30% of this total population was targeted. Selecting 30% was borrowed from Sekaran (2019) who mentions that a 30% minimum sample size would be required during sampling for statistical analysis especially for a population of less than 1000. The target population was the beneficiaries of the ECDE building construction projects that include the teaching professionals, board of management representatives, administration officials from the village and ward, users of the ECDE classrooms and county officials and project managers that have been engaged in the projects. The target population identified comprised 150 people.

Table 3.1 Target Population

Designation	Percentage %
Project Beneficiaries	125

County Officials	25
Total	**150**

3.4 Sample size and sampling procedure

Time, cost, accuracy level, margin of error, and confidence level helped to come up with the sample size.

3.4.1 Sample size

This is a sum of selected subjects to make assumptions about a data component. Sampling aids research in fitting a certain data by collecting and inspecting a number of individuals saving time and cost. It was adopted from the Krejcie and Morgan (1970) table of determination of sample size for activities (Kothari, 2014). With a target population of 150 people, 108 people made up our respondents for this study.

Table 3.2: Total sample size for project beneficiaries

Designation	Sample size	Percentage %
Kyangwithya east	18	24
Kyangwithya west	19	26
Miambani	16	21
Township	21	29
Total	**60**	**100**

Table 3.2 Sample size 1

Key informants were selected purposively for their information-rich knowledge on projects.

Table 3.3: Total sample size for Key informants

Departments	Purposely selected Respondents
Public administration	2
Education	4
Project office	8
Total	**14**

3.4.2 Sampling procedure

This methodology chooses a unit of subjects to produce inferences for the study. The first part was to sample ECDE building construction projects to get the projects that were used in the study. Kitui Central Sub County has 4 wards, Kyangwithya East, Kyangwithya West, Miambani and Township. Two ECDE building construction projects were randomly selected in each ward. The second part was to select the respondents of the study. The sampling frame was established. Simple random sampling procedure was utilized to identify project beneficiaries. Simple random sampling was used on the respondents to ensure a good capture of beneficiaries of the project based on subroutines, for example, gender-based strata. In order to be representative of the study, the selection of the county officials was done through purposive sampling to select information rich participants. Purposive sampling involves choosing certain units founded on a specific purpose. The researcher is able to identify individuals knowledgeable about the study area and can communicate their views and experiences. The key informant would select individuals particularly involved and knowledgeable about the project. Since the study has a predetermined nature of information required, the sampled 108 respondents were presumed to have the information required and they are best placed to provide it for the study.

3.5 Data collection instrument

Conferring with Kothari (2014) research instruments remain as tools used in collecting data. To satisfy the requirements for this study, a questionnaire was used. It was established to amass information. In addition, a key informant interview guide was developed. This research instrument measured the variables under investigation and yielded precise and important qualitative and quantitative data analysis and triangulation. The respondents filled their views and experiences on a 5-rank Likert scale. The measurement scale was from 1 to 5, 1 was the least and 5 was the highest indicating strongly disagree and strongly agree respectively. The key informant interview schedule had questions that correlated to the study questions to get information from the respondents like county government officials and project management team.

3.5.1 Pilot testing of the instrument

During piloting, participants to fill in questionnaires were randomly chosen from the research study population. The pilot study sample, according to Connelly (2008) was 10% of the probable sample. That is; 10% of 150 = 15 respondents. The questionnaire was piloted to 11 respondents, using simple random sampling which is 10%. A sample was drawn from the

Kanyongonyo ECDE building construction project in Kitui-West Sub-County, which is not part of the study area. However, this area had parallel social and economic features characteristics as the study area. Respondents were teachers, board of managers, school matron, school cooks, school parents, ward administrators, Sub County officers, a 10% sample size was drawn from this group. The pilot study tested if the questions were easily understood, if the questions were relevant to the research topic, if the respondents were open, how long it would take and how much it would cost to dispense the questionnaire. Changes and corrections were made as advised to ensure the efficacy of the instrument.

3.5.2 Validity of the instrument

This is how information answers the intended goals (Mugenda and Mugenda, 2006). It is the accuracy of inferences obtained from the study (Kothari, 2014). The research instrument's validity looks at the accuracy of measuring what is intended to be measured. Content validity would show how the research instrument would give adequate coverage of each indicator. Therefore, experts like the study supervisor reviewed the tools and the coverage of the study objectives and indicators before data was collected. On construct validity, the researcher also contacted the study supervisor to seek insight on the items, if they have been properly drawn and suggested changes were made accordingly.

3.5.3 Reliability of the instrument

The consistency of the research instrument tests for reliability and give parallel outcomes when recurrent estimations are collected of an identifiable individual in identical circumstances. (Kothari, 2014) Subjecting respondents to the same questionnaire more than once and at a specific interval would measure the reliability of the instrument. Such that for each test the results would be similar if not close, therefore making the tool reliable. The pilot test for this research used the test-retest method. Questionnaires were given to pilot respondents and after five days, they received the same questionnaire to compare. This helped in examining consistency of the results. Once data was collected, it was codded and SPSS was used together with the Cronbach Alpha Test. The test of reliability being larger or equal to 0.7 would indicate internal consistency and be satisfactory. The Cronbach's coefficient alpha test of reliability being higher shows the measuring instrument as better. The study, therefore, adopted items with indicators of more than 0.7 in the Cronbach Alpha Test. The Cronbach test for reliability for this study was 0.942 indicating that the scales are measuring one construct and can be relied on.

3.6 Data collection procedure

This was performed procedurally while maintaining research protocols and ethical standards. After receiving the letter of transmittal from the university, the researcher sought NACOSTI's research permit and proceeded to obtain permission from the county government. The researcher reported to the County Ministry of Education, Department of Public Works, and the County Secretary for authorization. The researcher thereafter informed local community leaders of the ongoing data collection activities. The academic performed training on research assistants that were involved in collection of data for both pilot and main study. Appointments were made with key informants for interviews. The drop-and-pick method of administering questionnaires was used and respondents attended to the questionnaires. The survey method helped collect data from various key informants and the study population to have various inputs.

3.7 Data analysis technique

Information collected was edited, coded, classified, and tabulated for analysis. Data editing weeds out errors during data collection. Data coding assigns numerals necessary for analysis. Data were processed and analyzed using statistics like proportions, frequencies, and percentages.

3.7.1 Qualitative analysis

Descriptive characteristics for the qualitative phenomenon were classified according to attributes and then analyzed.

3.7.2 Quantitative analysis

Qualitative and quantitative data were gathered and analyzed. The mixed mode of data analysis was used. Data received from respondents were sorted, cleaned, and coded to proceed to data entry and data analysis. This was keyed into SPSS that calculated descriptive statistics like mean, standard deviation, percentages, and frequencies.

Inferential data analysis was performed through correlation analysis to study the strength and direction of the relationship between the dependent variable and the independent variables

Hypothesis testing was done through regression analysis.

The correlation and regression model of the four objectives are shown below:

Performance of ECDE construction projects = f (quality control processes, scope management team, contractor supervision, community engagement)

$Y= B0+B1X1+B2X2+B3X3+B4X4 =E$

Where; -

Y=DV performance of ECDE construction projects

A= y-intercept(constant)

X1= quality control processes

X2= scope management team

X3= contractor supervision management

X4 community engagement

E=Error term

3.8 Operationalization of variables

The variables studied were defined and measured as shown below

Objective	**Variable**	**Indicators**	**Measurement scale**	**Method of data collection**	**Instrument/ data collection tools**	**Data analysis technology**
To establish the influence quality control processes on the performance of ECDE Building Construction projects in Kitui Central Sub County,	Independent • Project Monitoring and evaluation • Project scope and control • Project schedule • Inspection and testing • Effective communication	Number of site inspections Number of work rejection Number of non-compliance recorded Status reports	Nominal/ ordinal scale	Questionnaire Interview	Questionnaire Interview guide	Descriptive, Quantitative and Qualitative

Kitui, Kenya						
To examine the influence of the scope management team on the performance of ECDE Building Construction projects in Kitui Central Sub County, Kitui County, Kenya.	**Independent** • Leadership skills • Team commitment • Relationship among team • Team motivation	Site meeting minutes Status reports	Nominal/ Ordinal Scale	Questionnaire Interview	Questionnaire Interview guide	Descriptive, Quantitative and Qualitative
To establish the influence of contractor supervisio	**Independent** • Financial capability of the firm • Technical capability	Payment certificates Minutes on site	Nominal/ Ordinal scale	Questionnaire Interview	Questionnaire Interview guide	Descriptive, Quantitative and Qualitative

n on the performance of ECDE Building Construction Projects in Kitui Central Sub County, Kitui County, Kenya.	of the contractor • Non-compliance issues	meetings Work plan against set timelines Number of non-compliance reported				
To examine the influence of community engagement on the performance of ECDE Building Construction Projects in Kitui Central	**Independent** • Level of project acceptance • Level of participation • Effective communication	Number of site visits and site inspections Status reports Minutes on site meetings	Nominal/ Ordinal scale	Questionnaire	Questionnaire	Descriptive, Quantitative and Qualitative

Sub County, Kitui County, Kenya.						
Performance of ECDE Building Construction Projects	**Dependent** • Project time • Project cost • Project quality • Project satisfaction	Time for the Contract period Time taken in Defects liability period Project timeline Project budget and baseline	Nominal/ Ordinal scale	Questionnaire Interview	Questionnaire Interview guide	Descriptive, Quantitative and Qualitative

3.9 Ethical considerations

Ethical standards in research are vital in increasing the integrity and validity of the research findings. Eaton (2020) names a number of ethical issues faced in research such as conflict of interest, dishonesty in data analysis, lack of respect and informed consent to research parties, and lack of acknowledgement of research materials. In carrying out this research permission was pursued before engaging in personal contact. They were informed that any information collected was solely for research. An authorization letter was also sought prior to conducting the study. Consent was requested from all respondents and was assured of anonymity of participation and information provided. The study objectives were shared and clarified. The value of the research was shared with county officials, beneficiaries. They got more knowledge on implementation factors and performance, which would help officials improve their services and promote the future performance of ECDE projects. Due to the sensitivity of the

information collected on these public projects, the respondents were assured of privacy. In addition, they were also guaranteed of discretion. They were free to give or withhold as much information as they wished because their identities were safeguarded. All ethical requirements were upheld during the research and the study produced only the required materials to ensure no contribution to environmental pollution. The study remained objective and honest throughout the research period.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

Chapter four highlights' data analysis, findings, interpretation and findings. The questionnaire return rate, data analysis on study variables; influence of quality control processes; influence of scope management team; influence of contractor supervision and influence of community engagement on performance of ECDE building construction projects

4.2 Response rate

The proportion of the questionnaire return rate shows the potency of a research study. Inadequate response rate restricts the utilization of results. Of the 108 respondents for this study, 73 gave back answered questionnaires. This translates to 68%. This return rate is satisfactory to go further and analyze, conclude and recommend for the research study. A 50% response rate is considered adequate for analysis and that 70% is very good (Mugenda and Mugenda, 2013). Recommendations from Sproul (2016) agree with a minimum of 50%. From these sources, we can therefore agree that the return rate for this research was adequate. The table below illustrates the return rate of the study.

Table 4. 1; Response Rate

Category	**Sample**	**Response**	**Response Rate (%)**
Beneficiaries (school teachers, patrons, cooks, parents)	80	59	73
County officials	28	14	58
Total	**108**	**73**	**68**

4.3. Demographic Information and Respondents' Profiles

The considered demographic were, gender, education level, age-bracket, and how long they have been working in their current institution.

4.3.1. Distribution of Respondents by Gender

Respondents' distribution by gender was done for generalization purposes. Gender and responses were recorded below;

Table 2;Gender distribution

Gender	**Frequency**	**Percentage**
Male	30	41.0

Female	43	59.0
Total	**73**	**100.0**

Female at 59% were the majority, whereas males made up 41%. This shows that majority of the project beneficiaries were female which makes them resourceful in providing the required information.

4.3.2. Distribution of Respondents by Education Level

Respondents' distribution by education level was done for generalization purposes. Respondents identified their education level and responses were recorded below;

Table 3; Education level

Education level	Frequency	Percentage
None	0	0
Primary	9	12
Secondary	12	16
Tertiary	10	14
University	42	58
Total	**73**	**100.0**

The study respondents have a university education level (42) at 58%, followed by secondary level (12) at 16%, tertiary level (10) at14%, and then primary level (9) at 12% From the findings, it is reasonable to deduce that most respondents were knowledgeable enough to respond to the questionnaire. This makes them resourceful in providing the required information.

4.3.3. Distribution of Respondents by Age

This was determined from the administered questionnaire. This showed how the respondents' distribution by age bracket. The respondents answered on their age bracket as shown below.

Table 4.2; Age distribution

Age bracket	Frequency	Percentage
18-25	7	10.0
26-35	23	32.0
36-45	27	37.0
46-55	12	16.0

Over 56	4	5.0
Total	**73**	**100.0**

Table 4.2 showed 27(37%) respondents between 36-45years, 23(32%) were 26-35 years, 12(16%) were between 46-55 years, 7(10%) were between18-25, 4 (5%) were over 56 years. This result implies that the youth and middle-aged bracket between 26-45 years actively participated and the respondents were distributed among various age brackets.

4.3.4. Distribution of Respondents by Duration in which they have been working in the various institutions

The duration in which the respondents have been working for various institutions: schools and county officials was critical in showing years of experience in an institution vis a vis credible information received about a project. The results are presented in Table 4.3.

Table 4.3; Duration in the institution

Duration in the institution	Frequency	Percentage
Less than 1	8	11
1-3 years	23	32
Over 3 years	42	58
	73	**100**

Table 4.3 shows; 42 (58%) respondents have been working in various institutions for 3 years and above, 23 (32%) were between 1-3 years, and 8 (11%) indicated less than 1 year. This shows majority of the respondents have been working for various schools and county departments for a long duration and would have the required information from their experiences in the institution that the research seeks to study.

4.4. Performance of ECDE building construction projects in Kitui central Sub County, Kitui county in Kitui central Sub County Kitui county

The dependent variable was the performance of ECDE building construction projects. The **indicators** were: project completion rate, project scope, project satisfaction, project quality, and project cost.

Performance of ECDE Building construction projects in Kitui central Sub County Kitui county

Table 5;Performance of ECDE Building Construction Projects

	Parameter	M	S. D
	Performance of ECDE building construction projects		
4a	The project was completed on planned contract period	3.246	1.067
4b	The project scope was fully achieved	4.022	0.668
4c	There was project satisfaction	4.018	0.692
4d	There was quality conformance in the project	3.369	0.513
4e	The cost of the project was maintained	3.910	0.672
	Composite	**3.595**	**0.524**
	N=73		

The statements under project performance of the ECDE building construction projects recorded a composite mean of 3.595 and a standard deviation of 0.524, with a moderate level of agreement with homogeneity in responses.

4.5 Project Implementation Factors and Performance ECDE Building Construction projects in Kitui central Sub County, Kitui county

This research was to determine the influence of project implementation factors on the performance of ECDE building construction projects. The variables explaining project implementation factors were; quality control processes, Scope management team, Contractor supervision and Community Engagement.

4.5.1 Quality Control Processes and Performance ECDE building construction projects in Kitui central Sub County, Kitui County

To calculate the influence of quality control processes and performance of ECDE building construction projects, indicators examined were; project control, project schedule, inspection and evaluation, using these statements; there was a clear definition of project scope and objectives to be delivered in the project, there was a clear definition of design specification and technical standards to be delivered in the project, the project proceeded according to the planned schedule, there were adequate site inspections and site meetings done during implementation.

Table 6;Quality Control Processes

	Parameter	M	S. D
	Quality control processes		
5a	There was clear definition of project design scope and objectives to be delivered in the project	4.120	0.665
5b	There was clear definition of design specification and technical standards to be delivered in the project	4.073	0.750
5c	The project proceeded according to planned schedule	3.131	0.957
5d	There was adequate site inspections and site meetings done during implementation	3.260	0.745
	Composite	**3.479**	**0.621**
	N = 73		

composite mean of 3.479 showing a moderate response on these statements and a standard deviation of 0.621 which shows that the responses were not scattered.

Majority of the respondents agreed that there was a clear definition of project design scope and objectives to be delivered in the project and that there was a clear definition of design specification and technical standards to be delivered in the project with an average mean of 4.120 and 4.073 and standard deviation of 0.665 and 0.750 respectively, showing homogeneity in their responses. Respondents were moderate on the statements that the project proceeded according to planned schedule and that there were adequate site meetings and site inspections during implementation which had a mean of 3.131 and 3.260 and standard deviations of 0.957 and 0.745 respectively.

Interviewed respondents unanimously stated that the ECDE building projects do not proceed according to the planned schedule. Unanimously they also agreed that better project performance would be achieved with more site inspections and site meetings during implementation. They agreed that the project objectives, scope and specifications are clearly defined.

4.5.2 Scope Management Team and Performance of ECDE Building Construction Projects in Kitui central Sub County, Kitui County

To measure the influence of the scope management team and the performance of ECDE building construction projects the following indicators were examined; project leadership, team motivation, effective communication, effective feedback mechanism and flow of information. These were examined using these statements; the project manager's leadership enhanced team performance, the team ideas for the project are incorporated, the team is motivated enough to enhance their task performance, the project manager has communication skills required for project implementation, there was a good flow of information between all team members.

Table 7;Scope management Team and Performance of ECDE Building Construction Projects in Kitui Central Sub County, Kitui County

	Parameter	M	S. D
	Scope management team		
6a	The project managers leadership enhanced team performance	3.970	0.781
6b	The team ideas for the project are incorporated,	3.720	0.697
6c	The team is motivated enough to enhance their task performance	3.543	0.802
6d	There is good communication skills by the project manager required for project implementation	3.506	0.746
6e	There is regular training of the team to enhance their knowledge on project management	3.301	0.822
6f	There is good flow of information between all team members	3.246	0.753
	Composite	**3.389**	**0.753**
	N = 73		

Composite mean of 3.389 showing that the respondents had a moderate level of agreement with the statements and a standard deviation of 0.753 showing the homogeneity of the response distribution. On the scope management team, the statement that the project manager's leadership enhanced performance was moderately agreed on with a mean of 3.970 and

standard deviation of 0.781. Team ideas for the project being incorporated into the project recorded a mean of 3.720 and standard deviation of 0.697

The team was motivated to enhance their task performance and team undergoing regular training to enhance their knowledge in project management had a mean of 3.543 and 3.506 and standard deviation of 0.802 and 0.746 respectively showing a moderate response to the statement.

We find out that respondents had a moderate response on statements that the project manager had good communication skills required for the project and that there is good flow of information between the team members receiving a mean of 3.301 and 3.246 and standard deviations of 0.822 and 0.753 respectively.

Interview respondents settled that communication skills should be improved between team members and that some of their ideas should be incorporated which in turn would affect their performance which affects the performance of these projects. In addition, they wanted to undergo more regular training that would enhance their knowledge on project management.

4.5.3 Contractor Supervision and Performance of ECDE building construction projects in Kitui central Sub County, Kitui county

To calculate the influence of contractor supervision and performance of ECDE building construction projects, indicators examined included; technical capability, financial capability, non-conformance, project schedule, and effective communication flow, the following statements were posed; the contractor had a good understanding of working drawings and specifications, there was adherence to project specifications, the deliverables of the project were going according to the work plan, the financial flow was not interrupted till completion, there was adherence to contract period, and there is a free flow of information from the contractor to the scope management team. Their response was tabulated as follows

Contractor supervision and Performance of ECDE building construction project in Kitui central Sub County Kitui county

Table 8; Contractor Supervision

	Parameter	M	S. D
	Contractor supervision		
7a	The contractor had good understanding of working drawings and specifications	3.802	0.744
7b	There was adherence to project specifications	3.520	0.788

7c	The deliverables of the project were going according to the work plan	2.410	0.862
7d	The financial flow was not interrupted till completion	3.310	0.879
7e	There is free flow of information from the contractor to the scope management team and the community	3.205	0.576
	Composite	**3.249**	**0.769**
	N=73		

The study observed a composite mean of 3.249 and a standard deviation of 0.769. This showed a moderate level of agreement and a homogenous response distribution. On contractor supervision, the statements that the contractor had a good understanding of project working drawings and specifications had a mean of 3.802 and a standard deviation of 0.744. Contractor adherence to specifications of the project and project deliverables proceeding according to plan had a mean of 3.520 and 2.410 and a standard deviation of 0.788 and 0.862 respectively showings that respondents moderately agreed with the former and disagreed with the latter statement. The statement on scope management that there is a free flow of information from the contractor to the scope management team and the community received a majority moderate response with a mean of 3.205 and a standard deviation of 0.576. The financial flow of the contractor was not interrupted until completion received a mean of 3.310 with a standard deviation of 0.879.

From the interviews, respondents agreed that the financial flow of the contractor was sometimes interrupted by noticing weeks when the contractor and contractor staff were not on site, waiting for materials to arrive or for the construction to proceed. From their discussion, respondents agreed that there were delays in project deliverables according to the scheduled Workplan which ultimately affects project performance.

4.5.4 Community Engagement and Performance of ECDE building construction projects

To calculate the influence of community engagement and performance of ECDE building construction projects, indicators examined included, the level of participation, level of acceptance, and effective communication with the following statements; the ideas of the community were incorporated into the project, the changes about the project are communicated to the community, the community participate in site handover, meetings and inspections, there is active community support in the project.

Table 9;Community engagement

	Parameter	M	S. D
	Community Engagement		
8a	The ideas of the community were incorporated into the project	4.131	0.688
8b	The changes about the project are communicated to the community	3.369	0.799
8c	The community participate in site handover, meetings and inspections	3.410	0.983
8d	There is active community support in the project	4.226	0.589
	Composite	**3.634**	**0.760**
	N = 73		

The average weight for all the constructs 3. 834.It shows a moderate level of agreement with the statements. The standard deviation of 0.764, shows homogenous distribution in responses

On community engagement, respondents' response to: - ideas of the community are incorporated into the project and there is active community support in the project with mean of 4.131 and 4.226 and standard deviation of 0.688 and 0.589 respectively. The response to the statement on the changes in project activities are communicated to the community received a mean of 3.369 and a standard deviation of 0.799 showing a moderate response. Community participation in site handover, site meetings and site inspections had a mean response of 3.410 and a standard deviation of 0.983 showing a moderate homogenous response.

From the interviews respondents agreed that changes about the project are not fully communicated to the community, using the right channels. Some of the project elements like furniture, an outdoor swing, that they were told to expect were not seen after the project completion and handing over. This shows a breakdown in communication. The interviews also showed that the community participates in the project by providing unskilled labor, and construction materials that are used in the project. They unanimously stated that they should be included more in site meetings and inspections.

4.6 Regression Analysis

It corroborates linkages between project implementation factors influencing the performance of ECDE building construction projects in Kitui central Sub County, Kitui County as the dependent variable. The results are as shown

Model Summary

Table 10;Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.748[a]	0.559	0.553	0.4033

a. Predictors: (Constant) Community Engagement, Quality Control Processes, Scope Management Team, Contractor Supervision

The table above displays how the model fits gathered and analysed data and fits it the data into the equation. The model's predictive power is specified by the adjusted R2 and infers that there are 55.3% variations in performance of ECDE building construction projects in Kitui central Sub County, Kitui County. The 55.3% of the variability observed in the performance level of ECDE building construction projects can be explained by the regression model. The variations can be explained by changes in quality control processes, scope management team, contractor supervision, and community engagement.

The Analysis of variance (ANOVA) ascertains how the model fits the data and to further determine the goodness-of-fit statistics.

Table 12; Analysis of Variance (ANOVA)[a]

Model	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sign.**
Regression	14.006	4	3.501	21.527	.000[b]
Residual	11.060	69	0.163		
Total	25.066	73			

a. Dependent Variable: Project Performance

b. Predictors: (Constant) Community Engagement, Quality Control Processes, Scope Management team, Contractor Supervision.

A p-value of 0.000 shows the vitality of the model in forecasting how quality control processes, scope management team, contractor supervision, and community engagement could be used. The calculated F is 21.527. This is more than the critical one (2.764) at 5% significance level showing the significance of the model.

Table 11; Regression Coefficient

	Unstandardized Coefficients		Standardized Coefficients	T	Sig
	B	Std. Error	Beta		
(Constant)	0.601	0.402		1.493	.000
Quality control processes	0.261	0.115	0.261	1.545	.005
Scope management team	0.454	0.113	0.454	4.016	.000
Contractor supervision	0.238	0.110	0.189	1.704	.009
Community engagement	0.291	0.109	0.281	2.668	.010

a. Dependent Variable: Project Performance

From the above table, the regression equation would be: -

$Y = 0.601 + 0.261X1 + 0.454X2 + 0.189X3 + 0.281X4$

From the tables, the regression coefficient showed the outcome of a unit increase in the dependent variable on the independent variable.

The results review that when the independent variables are constant at zero, the performance of ECDE building construction projects in Kitui Central Sub County would be 0.601 (60.1%) and since the p-value = 0.00 which is less than 0.05 then the variables were significant.

An increase in a unit in quality control processes would lead to a 0.261 (26.1%) increase in the performance of ECDE building construction project in Kitui central Sub County, Kitui county

An increase in a unit in scope management team would lead to a 0.454 (45.4%) increase in the performance of ECDE building construction project in Kitui central Sub County, Kitui county. The variables were significant because the P value=000 which is less than 0.05.

An increase in a unit in contractor supervision would lead to a 0.189 (18.9%) increase in the performance of ECDE building construction project in Kitui Central Sub County, Kitui county, therefore, the variables were significant because the p value=0.009 which is less than 0.05.

An increase in a unit in community engagement would lead to a 0.281 (28.1%) increase in the performance of ECDE building construction project in Kitui central Sub County, Kitui county, hence p value=0.010 which is less than 0.05 shows that the variables were significant.

4.6.1 Test of hypothesis

An increase in a unit in quality control processes would lead to a 0.261 increase in the performance of ECDE building construction project. Since p = 0.005 is less than 0.05, the variable was significant, hence the null hypothesis -quality control processes have no significant influence on the performance of ECDE building construction projects in Kitui-central Sub-County, Kitui county -was rejected.

An increase in a unit in scope management team would lead to 0.454 increase in performance of ECDE building construction project in Kitui-Central Sub-County, Kitui county. Since p=0.000 is less than 0.05, the variable was significant; therefore, the null hypothesis-scope management team has no significant influence on performance of ECDE building construction projects in Kitui central Sub County, Kitui county-was rejected.

An increase in a unit in contractor supervision would lead to a 0.189 increase in the performance of ECDE building construction project in Kitui-Central Sub-County, Kitui county. Since p=0.009 is less than 0.05, the variable was significant; therefore, the null hypothesis -contractor supervision has no significant influence on the performance of ECDE building construction projects in Kitui central Sub County, Kitui county -was rejected.

An increase in a unit in community engagement would lead to a 0.281 increase in the performance of ECDE building construction project in Kitui-Central Sub-County, Kitui county. Since p=0.010 is less than 0.05, the variable was significant; therefore, the null hypothesis-contractor supervision has no significant influence on the performance of ECDE building construction projects in Kitui central Sub County, Kitui county- was rejected.

4.7 Correlation Analysis

Correlation analysis shows the relationship between project implementation factors and the performance of ECDE building construction projects in Kitui Central Sub-County, Kitui County. The results are as follows:

4.7.1 Quality Control Processes

Table 12; Correlation analysis Quality Control processes

	Quality Control Process	Project performance

Spearman's rho	Quality control process	Correlation coefficient	1.000	0.491
		Sig	.	0.000
		N	73	73
	Project Performance	Correlation Coefficient	0.491	1.000
		Sig	0.00	
		N	73	73

There is a moderate positive correlation of 0.491 between the quality control process and project performance from the table. Therefore, quality control processes influence the performance of ECDE building construction projects. An increase in one variable leads to an increase in the other.

4.7.2 Scope Management Team

Table 13; Correlation Analysis; Scope management team

			Scope management team	Project performance
Spearman's rho	Scope management team	Correlation coefficient	1.000	0.626
		Sig	.	0.000
		N	73	73
	Project Performance	Correlation Coefficient	0.626	1.000
		Sig	0.00	
		N	73	73

There is a strong positive correlation of 0.626 between the scope management team and project performance, hence scope management team positively influences the performance of ECDE building construction projects in Kitui Central Sub County, Kitui County.

4.7.3 Contractor Supervision

Table 14; Correlation Coefficient; Contractor Supervision

			Contractor supervision	Project performance
Spearman's rho	Contractor supervision	Correlation coefficient	1.000	0.531
		Sig	.	0.000
		N	73	73
	Project Performance	Correlation Coefficient	0.531	1.000

	Sig	0.00	
	N	73	73

There is a moderate positive correlation of 0.531 between contractor supervision and project performance. Therefore, contractor supervision moderately influenced the performance of ECDE building construction projects in Kitui central Sub County, Kitui County

4.7.4 Community Engagement

Table 15; Correlation Coefficient; Community Engagement

			Community engagement	Project performance
Spearman's rho	Community engagement	Correlation coefficient	1.000	0.606
		Sig	.	0.000
		N	73	73
	Project Performance	Correlation Coefficient	0.606	1.000
		Sig	0.00	
		N	73	73

There is a strong positive correlation of 0.606 between community engagement and project performance, therefore, Community engagement influences the performance of ECDE building construction projects in Kitui Central Sub County, Kitui County.

The correlation analysis showed a positive correlation between project implementation factors and the performance of ECDE building construction projects.

The correlation analysis showed positive correlations and being significant with a p-value of 0.00. This then displays a moderate correlation between performance of the project and project implementation factors on quality control processes, scope management team, contractor supervision and community engagement.

4.8 Interview Response

The researcher conducted an interview using an interview guide on the opinions they had on the four items of study; quality control processes, scope management team, contractor supervision, community engagement and project performance.

Respondents agreed that quality control processes are important in project performance and should be increased during project implementation. They stated that more site inspections should be done "site inspection is mostly done when contractor requests for payment and there

should be more" they also noted the need for better record-keeping on site meetings, and more community involvement in site meetings and inspections.

The respondents noted that they need more site inspection visits from the supervisory team so that they can check on the progress of the works being done. They agree that the scope management team clearly communicates what the project brings and what they should expect. The team also shows leadership and good conflict management skills when contractor and community disagree

The community through the labor on site monitor each stage of the construction process and note when the contractor cuts corners; one stated that the contractor did not put hardcore on the substructure foundation, therefore calling the community to stop the contractor from working. It was agreed that some specifications of the project are not keenly followed by the contractor therefore the need for regular site inspections by the scope management team.

Regarding their views on community engagement, the respondents mentioned different levels of their involvement in the project. The community provided unskilled labor to the construction project. They also supply water to be used in the project. They chose the location of the ECDE building construction. They are told what to expect from the project and from their opinions, not everything they are told is delivered. The satisfaction levels were unanimously agreed on since these ECDE building projects are politically motivated and they wait for years before the project is finally brought to their community.

The respondents' view on project performance had a unanimous agreement that most projects take longer to be completed. They stated that the contractor takes a long time on the construction site. They noted that contractors after receiving the LSO for the project, bring materials on site and then take months before they begin groundbreaking process. Others stated that they were told they would get two ECDE classrooms instead of one that had been. They also expected that they would have constructed the classroom and furnished it as they had previously been told, instead, they only got a classroom constructed. This then shows breakage in the communication chain.

CHAPTER FIVE

SUMMARY OF THE FINDINGS, DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

The study aim was to examine project implementation factors influencing the performance of ECDE building construction projects in Kitui Central Sub County, Kitui County; Kenya.

5.2 Summary of Findings

The summary of the study findings answered the research questions.

5.2.1 Quality Control Processes and performance of ECDE building construction projects in Kitui central Sub County Kitui County

There is a significant relationship between quality control processes and the performance of ECDE building projects. The performance was as a result of the project scope and objectives having a clear definition, a clear definition of design specifications and technical standards to be delivered in the project, the project proceeded according to the planned schedule, and adequate site meetings and site inspection during implementation.

5.2.2 Scope Management Team and performance of ECDE building construction projects in Kitui central Sub County, Kitui county

There is significant influence of the scope management team on the performance of ECDE building construction projects in Kitui central Sub County, Kitui county. The performance was influenced by the project managers' leadership, communication skills, team ideas for the project being incorporated into the project, team motivation and, regular training to enhance their knowledge in project management.

5.2.3 Contractor Supervision and Performance of ECDE building construction projects in Kitui central Sub County, Kitui County

There is a significant relationship between contractor supervision and the performance of ECDE building construction projects. The performance was influenced by the contractor having a good understanding of project working drawings and specifications, the contractor adherence to specifications of the project and project deliverables proceeding according to plan, there is a free flow of information from the contractor to the scope management team and the community, The financial flow of the contractor was not being interrupted until completion.

5.2.4 Community Engagement and Performance of ECDE building construction projects in Kitui central Sub County, Kitui County

Community engagement has a significant relationship with the performance of ECDE building construction projects in Kitui central Sub County, Kitui town. The performance of the project was due to ideas of the community being incorporated into the project, active community support in the project, changes about the project activities are communicated to the community and Community participation in site handover, site meetings and site inspections. More community engagements, community impact and involvement would be significant to community engagements which in turn influences project performance

5.3 Discussion of the Findings

This study looked at project Implementation factors influencing the Performance of ECDE building construction projects in Kitui central Sub County, Kitui County.

5.3.1 Quality Control Processes and Performance of ECDE building construction projects in Kitui central Sub County, Kitui County

Findings reveal a significant relationship between quality control processes and performance of ECDE building construction projects in Kitui central Sub County, Kitui County. These findings agree with Aoko (2014) who found that a clear definition of project scope and objectives and speed of flow of information influenced the performance of public project performance. Findings by Mukoche, Wanjala, and Simiyu (2018) indicated insufficient participation in quality assurances, inadequate quality checks, and inadequate standards of public building projects negatively affected the quality of the projects which agrees with the study findings on regular site inspections leading to delays in planned project schedule hence affecting the performance of the project. The study by Kimeria, Kising'u, and Oyoo, (2019) also agree with the findings that the quality control of building construction takes into consideration project management practices which leads to performance of the project.

5.3.2 Scope management team and Performance of ECDE building construction projects in Kitui central Sub County, Kitui county

Findings that there is a significant relationship between the quality control processes and the performance of ECDE building construction projects in Kitui Central Sub County, Kitui county. Saade & Wan (2015) agree with the findings stating that effective leadership is a critical project management factor and project managers require to have strong communication skills are critical to project success. Project managers' communication skills and flow of information between all team members increase project performance and this is also agreed

by Dadzie, et al ,(2012) who state that the team work is an improtant since having strong leadership skills, the project manager would be able to work well with their team and monitor, control and manage project performance . Ensuring regular training for the scope management team and increasing team motivation would improve the performance of ECDE building projects. The study findings conform with Aoko's (2014) findings that found that the technical capability, organizing and coordinating skills and abilities of project manager influences performance of the public project.

5.3.3 Contractor supervision and Performance of ECDE building construction projects in Kitui central Sub County, Kitui County

There is a significant relationship between contractor supervision and the performance of ECDE building construction projects in Kitui central Sub County, Kitui County. Project management capabilities of contractors and technical capability of the contractor influence performance. The findings from this study agree with findings from Dadzie, Abdul-Aziz, & Kwame, (2012) which showed that Contractor supervision through adherence to the contract period is significant to project performance and when projects go beyond their normal durations it influences the performance of the project and the consultant. Aoko (2014) also found that contractor cash flow, supervision and staff qualification of promoted the performance of public projects. Improving communication channels from the contractor to the rest of the project team and the community would improve the performance.

The finding also agrees with the study findings from Seurey, Kyalo and Sakaja, (2020) that agree that ineffective monitoring by the project supervisors and inconsistency in project inspection affected the completion of Kenyan government-initiated projects.

5.3.4 Community engagement and Performance of ECDE building construction projects in Kitui central Sub County, Kitui County

There is a significant relationship between community engagement and performance of ECDE building construction projects. Community support, community participation, and the flow of information greatly improve project performance in this sector. These findings conform to findings from Chandra, et al, (2010) that agree that stakeholder empowerment, stakeholder engagement and stakeholder impact are essential in the delivery of project success. The findings negotiate the need of stakeholders into tangible outcomes to boost performance in construction projects. These findings harmonize with those from Nankoris and Mwangi (2017) that found that participation of the community in project design, monitoring and evaluation, and project implementation significantly influenced the Project completion.

5.4 Conclusion of the Study

The research concluded that project implementation factors have a positive and significant influence on the performance of ECDE building construction projects in Kitui central Sub County, Kitui County. Quality control processes, and contractor supervision are important in the performance of ECDE building construction projects and contribute largely to the performance of these projects. Scope management team is linked to the performance of ECDE construction projects, focus on motivation and training of staff would greatly improve performance in this sector. Another important factor to check on is how information moves from the contractor, to the scope management team and the community as it is vital in improving project performance. Community engagement throughout the project implementation is significant in their satisfaction, acceptance, and overall performance of the project.

The correlation analysis showed a positive moderate correlation among implementation factors and project performance, with all the four null hypotheses being rejected and accepting that project implementation factors influence performance of ECDE building construction projects.

5.5 Recommendations

The recommendations made include:

1) The county government to promote motivation and training of the scope management team on project management practices as it would improve their task performance, and motivate them in project delivery. Furthermore, the flow of information among the team should also be looked into as each team member contributes to the performance of a project in one way or another.
2) There is a need to foster quality control processes in projects through having regular site meetings and site inspections as monitoring of the implementation process to ensure projects proceed according to the planned schedules and project deliverables are going according to the work plan.
3) Communities should be put at the forefront of design or construction changes expected in the project as their satisfaction influences the project performance

5.6 Suggestions for further studies

From the findings, the following are suggested.

Application of this this research project by the county governments will boost the performance of these projects including focusing on related projects. In addition, other indicators of project

implementation factors can be considered, bear in mind a larger sample size, other implementation factors can also be regarded. Other participants and geographical factors can be taken into account.

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APPENDIXES

Appendix i:

Introduction Letter

Dear Sir/Madam,

REF: REQUEST FOR DATA COLLECTION

As a Master of Arts student in project planning and Management at the University of Nairobi I am to carry out a project in the Final year of study. I am researching on **project implementation factors on performance of ECDE Building Construction projects in Kitui Central Sub-County, Kitui County, Kenya.** Consequently, I am requesting for your support by responding to the attached questionnaire. The researcher will highly regard accuracy and sincere response which are crucial in ensuring the objectivity of the research.

Any further assistance accorded to me in my noble cause and information given shall be treated as confidential and the researcher shall avail the document upon request. Your assistance will be appreciated.

Yours Faithfully,

Appendix ii: Questionnaire

Part 1.

Introduction

My name is Joan Nangáyo Ngesa. I am partaking thesis research on **project implementation factors on performance of ECDE Building Construction projects in Kitui Central Sub County, Kitui County, Kenya as part of my** Masters studies in Project Planning and management at the University of Nairobi. This exercise will get your input on quality control

processes, scope management team, contractor supervision, and community engagements regarding the ECDE classroom project. The questionnaire will take approximately 30 minutes. The information collected will be treated with discretion and used only for academic purposes.

Consent

The respondent has agreed to be interviewed

Yes…… No ……

Respondent Code: ……. **Date……**

SECTION TWO: Respondent Information

(Tick (√) as appropriate)

1. Gender

   Male ( ) Female ( )

2. Education level

   None ( )Primary( ) Secondary( ) Tertiary( ) University( )

3. Age bracket

   18- 25 years ( ) 26-35 years ( ) 36-45 ( ) 46-55 ( ) over 56 ( )

4. How long you have worked for your current institution?

   less than 1 year ( ) 1-3years ( ) over 3 years ( )

SECTION THREE:

Tick **(√)** once on your response to the statements below

On a scale of 1-5: where 1= Strongly disagree, 2= disagree, 3= moderate, 4= agree, 5= strongly agree

PART I: Quality Control Processes

Statement on quality control processes	**5 SA**	**4 A**	**3 M**	**2 D**	**1 SD**
There was clear definition of project design scope and objectives to be delivered in the project					
There was clear definition of design specification and technical standards to be delivered in the project					
The project proceeded according to planned schedule					
There was adequate site inspections and site meetings done during implementation					

Part II: Scope Management Team

Statement on Scope management team	5 SA	4 A	3 M	2 D	1 SD
The leadership of the project manager enhanced team performance					
The team ideas for the project are incorporated					
The team is motivated enough to enhance their task performance					
There is good communication required for project implementation are by the project manager					
There is regular training by the team to enhance their knowledge on project management					

Part III: Contractor Supervision

Statement on contractor supervision	5 SA	4 A	3 M	2 D	1 SD
The contractor has a good understanding of the project working drawings and specifications					
There was adherence to the specifications for the project					
The project deliverables are going according to the project workplan					
The Financial flow is not interrupted till completion					
There was adherence to the contract period					
There is speed of information flow from contractor to the scope management team and the community					

Part IV: Community Engagement

Statement on community engagement	5 SA	4 A	3 M	2 D	1 SD
The ideas of the community are injected into the project and jointly come up with solutions					
The changes about the project activities are communicated to the community					
The community participate in site handover, meetings and inspections					
There is active community support in the project					

PART V: Project Performance

Statement on project performance	5	4	3	2	1

	SA	A	M	D	SD
The project was completed on the planned contract period					
The Project scope was fully achieved					
The community were satisfied with the ECDE project					
The technical specifications of the ECDE project were achieved					
The cost of the ECDE project was maintained					

Appendix iii: Interview guide

Interview Guide

1. Name challenges faced on implementation of ECDE building Projects

……
……
……
……
……
……
……

2. In your own assessment, how does the following factors influence performance of ECDE building projects

A) Quality Control Processes

Rate of inspection ……
Number of non-compliance reported……
Work rejection due to workmanship……
Any others:
……
……

B) Scope management team

Level of interaction of the team……
Level of commitment of the team……
Level of motivation of the team……
Any others:
……
……

C) Contractor Supervision

The technical capability of contractor……
Level of commitment of the contractor……
Rate of Flow of information ……
Any others:
……
……

D) Community Engagement

Level of community participation……
Rate of flow of information ……
Any others:
……
……

3. In your opinion do you think implementation of ECDE building construction is successful within Kitui Central Sub County? Give reasons.

……
……
……
……
……
……

4. Do you have any recommendations for the improvement of Performance of ECDE building construction projects.

……
……
……
……

Appendix iv: Krejcie& Morgan table for sample determination for research activities

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

Appendix v: Research Licence

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION

Ref No: **421758**

Date of Issue: **19/October/2022**

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