QUALITY PLANNING, QUALITY CONTROL, AND PROJECT QUALITY MANAGEMENT IN NGO PROJECTS IN IGANGA DISTRICT

By

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A RESEARCH REPORT SUBMITTED TO THE DIRECTORATE OF GRADUATE STUDIES RESEARCH AND INNOVATION IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF DEGREE OF MASTER OF BUSINESS ADMINISTRATION OF BUSITEMA UNIVERSITY

Plan A

OCTOBER, 2025

Declaration

I, **Ssebowa Joshua**, hereby declare that this dissertation entitled ***Quality Planning, Quality Control, and Project Quality Management in NGO projects in Iganga district*** is my original work and has not been submitted, wholly or in part, to any other institution or university for the award of a degree or any other academic qualification. All sources and references used in the preparation of this dissertation have been appropriately acknowledged.

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Approval

This is to certify that this dissertation titled ***Quality Planning, Quality Control, and Project Quality Management in NGO projects in Iganga district*** has been submitted for examination with our approval as university supervisors.

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Assoc. Prof. Musenze Ibrahim

.....28/10/2025.....

Date

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Dr. Watema Joash

.....24/10/2025.....

Date

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Dedication

This dissertation is dedicated with deep affection to my beloved wife and children, whose steadfast love, encouragement, and sacrifice have inspired and supported me throughout my academic journey.

Acknowledgement

I am deeply grateful to the Almighty God, whose grace, wisdom, and provision have sustained me throughout this research process and my academic journey.

My sincere appreciation goes to my supervisors, Assoc. Prof. Musenze Ibrahim and Dr. Watema Joash, for their tireless guidance, intellectual insights, and constructive feedback that greatly enriched the quality of this work.

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To my friends, colleagues, and all individuals who contributed in any way, thank you. Your support has not gone unnoticed.

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List of abbreviations/ Acronyms

Abbreviation/Acronym	Meaning
CoQ	Cost of Quality
CVI	Content Validity Index
ISO	Internal Organisation for standardisation
NGO	Non-Governmental Organisation
PMI	Project Management Institute
PQM	Project Quality Management
QC	Quality Control
QM	Quality Management
SPC	Statistical Process Control
SPSS	Statistical Package for social Scientists
SQC	Statistical Quality Control
TQM	Total Quality Management
WHO	World health Organisation

Abstract

This study set out to examine the mediating role of quality control in the relationship between quality planning and project quality management among NGO projects in Iganga District. the study used a cross sectional research design with a quantitative approach. A population of 109 NGO projects. Based on the guidelines of Yamane (1967), a sample of 86 NGO projects was derived. The study used a structured questionnaire to collect data from the respondent and attained a response rate of 62.5% at the level of unit of inquiry and 84.4% at level of unit of analysis. The findings indicate that quality control mediated the relationship between quality planning and project quality management in project quality management of NGO projects in Iganga District. The indirect role of quality control in the relationship between quality planning and project quality management was 40.1% while 59.9% was as a result of the direct relationship. Based on the findings, the study concluded that quality control is a significant mediating factor through which quality planning translates into enhanced project quality management. The researcher therefore recommends that NGOs integrate quality control protocols directly into project planning documentation making them a required component of work plans, budgets, and implementation strategies.

CHAPTER ONE: INTRODUCTION

1.0 Introduction

This chapter provides an introduction to the study, the background, problem statement, purpose of the study, research objectives, research hypothesis, conceptual framework, scope, and justification of the study.

1.1 Background of the study

Non-Governmental Organizations (NGOs) play a critical role in fostering social and economic development, particularly in low and middle-income countries such as Uganda (Hakizimana et al., 2024; Khodor et al., 2024; Okello & Okech, 2023; Otundo, 2025; Trivedi et al., 2024). NGOs operate across multiple sectors, including education, healthcare, environmental conservation, social welfare, and humanitarian assistance, complementing government efforts in service delivery management (Mokhosi & Asiimwe, 2025; Okello & Okech, 2023; Trivedi et al., 2024). Beyond service provision, NGOs also contribute to policy advocacy, capacity building, and community empowerment, which are essential for sustainable development (Mziwandile, 2022). However, despite their significant contributions, NGOs face persistent challenges such as donor dependency, poor governance, lack of technical expertise, and regulatory constraints that hinder their effectiveness, particularly in project quality management. Project quality management refers to the systematic process of ensuring that a project meets defined quality standards (PMI, 2021). Effective quality management ensures that project outcomes align with stakeholder expectations, are delivered within scope, and adhere to international quality benchmarks such as ISO 9001 (Jamil & Tahir, 2024).

Globally, project quality management continues to be a major concern for NGOs and development agencies. A 2021 report by the Project Management Institute (PMI) revealed that only 58% of projects worldwide meet their original goals and business intent due to quality-related challenges. Similarly, the International Organization for Standardization (ISO) reported that over 40% of project had quality management issues such as defective products, poor quality supplies, and non-compliance with donor regulations. Also, the World Health Organization (WHO) found that 3.5 out of 10 medical supplies delivered to low- and middle-income countries are substandard (WHO, 2024). This problem is particularly prevalent in Africa, which accounts for majority of reported cases of substandard project outcomes, significantly undermining the effectiveness of donor-funded programs (Kanyi & James, 2023).

In Africa, NGOs face severe quality management inefficiencies, with a 2022 study by the African Development Bank (ADB) revealing that over 35% of donor-funded projects fail due to compliance issues such as failure to adhere to quality standards. According to Otundo (2025), 61% of water, sanitation, and hygiene projects in east African countries require maintenance within the first 6 months of commissioning. This is a clear indicator of poor-quality project deliverable. A similar condition exists in South Africa where Mokhosi and Asiimwe, (2025)found that 45% of projects experienced supplier-related quality issues, including but not limited to delays, non-compliance with contract terms, and delivery of substandard goods and services. This in turn led to delays in projects and in some cases delivering of sub-standard project outcomes.

Uganda is no exception to the quality management challenges facing NGOs. According to Okello (2023), NGO projects continue to grapple with compliance failures, poor supplier performance, and non-conformance to quality standards. According to Magoola et al. (2023), among NGO projects in Uganda, compliance remains a major challenge, with many projects failing to meet regulatory

and donor requirements. Additionally, NGOs often work with vendors who lack the capacity to deliver quality goods and services an consequently product quality deficiencies are evident in sectors such as healthcare, where the delivery of substandard medical supplies compromises service delivery (Nabaasa, 2022). The Uganda National NGO Bureau report from 2021 indicated that more than 60% of NGOs functioning in Eastern Uganda did not follow established operational quality guidelines which resulted in operational inefficiencies and financial mismanagement. Watema and Tulirinya (2021) found that in Iganga District, 69% of NGO projects failed to meet quality specifications, leading to 50% of projects being abandoned or contracts being terminated, while 19% required rework to ensure compliance with required standards. These findings highlight the urgent need for improved project quality management practices in Uganda's NGO sector.

This study was anchored on the Total Quality Management (TQM) theory as proposed by Juran (1988). The theory emphasizes three key aspects: quality planning, quality control, and quality improvement. Quality planning involves setting quality objectives, identifying necessary processes, and determining the resources required to meet quality standards (Mulama & Sang, 2023). Quality control refers to the ongoing efforts to maintain the desired level of quality by detecting and correcting deviations from the established standards (Trivedi et al., 2024). Quality improvement focuses on continuously enhancing processes and outcomes to prevent defects and inefficiencies (Asfoor et al., 2022). In this study, the researcher will assess the relationship between Quality planning, Quality control, and Quality management.

Several empirical studies have examined the direct relationship between quality planning and project quality management (Aghimien et al., 2019; Alshourah, 2021; Mohsen et al., 2023). Additionally, a contextual gap exists, as most studies on project quality management have been conducted in developed economies or corporate settings, which have different regulatory

frameworks, financial resources, and institutional capacities compared to NGOs operating in low- and middle-income countries like Uganda thereby making their findings non-generalizable. This study therefore examined the mediating role of Quality control in the relationship between quality planning and project quality management in NGO projects in Iganga District.

1.2 Problem statement

Achieving quality project management within Non-Governmental Organizations (NGOs) is essential for realizing development goals, beneficiary satisfaction, and donor trust. However, many NGOs encounter substantial difficulties when it comes to maintaining their project quality. The Uganda National NGO Bureau report of 2021 indicated that more than 60% of NGOs functioning in Eastern Uganda did not follow established operational quality guidelines which resulted in operational inefficiencies and financial mismanagement. Watema and Tulirinya (2021) demonstrated that 69% of NGO projects in Iganga district did not meet quality standards which led to 50% being abandoned or terminated and 19% undergoing re-work to achieve compliance. Despite existence of policy guidelines and monitoring initiatives, quality management challenges remain prevalent. This situation may lead to diminished trust from donors and beneficiary dissatisfaction which could cause donors to withdraw their funding. Poor quality management persistence could be attributed to inadequate quality planning and insufficient quality control measures. This research aimed to explore the mediating role of quality control in the connection between quality planning and project quality management in NGOs in Iganga District.

1.3 Purpose of the study

The purpose of this study was to examine the relationship between quality planning and project quality management mediated by quality control in NGO projects in Iganga District.

1.4 Research objectives

This study was guided by the following research objectives

i. To assess the relationship between quality planning and project quality management in NGO projects in Iganga District

ii. To find out the relationship between quality planning and quality control in NGO projects in Iganga District

iii. To evaluate the relationship between quality control and project quality management in NGOs in Iganga district

iv. To examine the mediating role quality control in the relationship between quality planning and project quality management in NGOs in Iganga district.

1.5 Research hypothesis

H1: There is a positive and significant relationship between quality planning and project quality management in NGO projects in Iganga district

H2: There is a positive and significant relationship between quality planning and quality control in NGO projects in Iganga District

H3: There is a positive and significant relationship between quality control and project quality management in NGO projects in Iganga District

H4: Quality control significantly mediates the relationship between quality planning and project quality management in NGO projects in Iganga District.

1.6 Scope of the study

This section explains the content, time, and geographical scope

1.6.1 Content scope

This study will focus on the mediating role of quality control (continuous monitoring, defect prevention, and corrective) in the relationship between quality planning (quality objective, performance benchmarks, and stakeholder requirements) and project quality management

(Compliance, product quality, supplier performance, and non-compliance management) in NGO projects in Iganga District.

1.6.2 Geographical scope

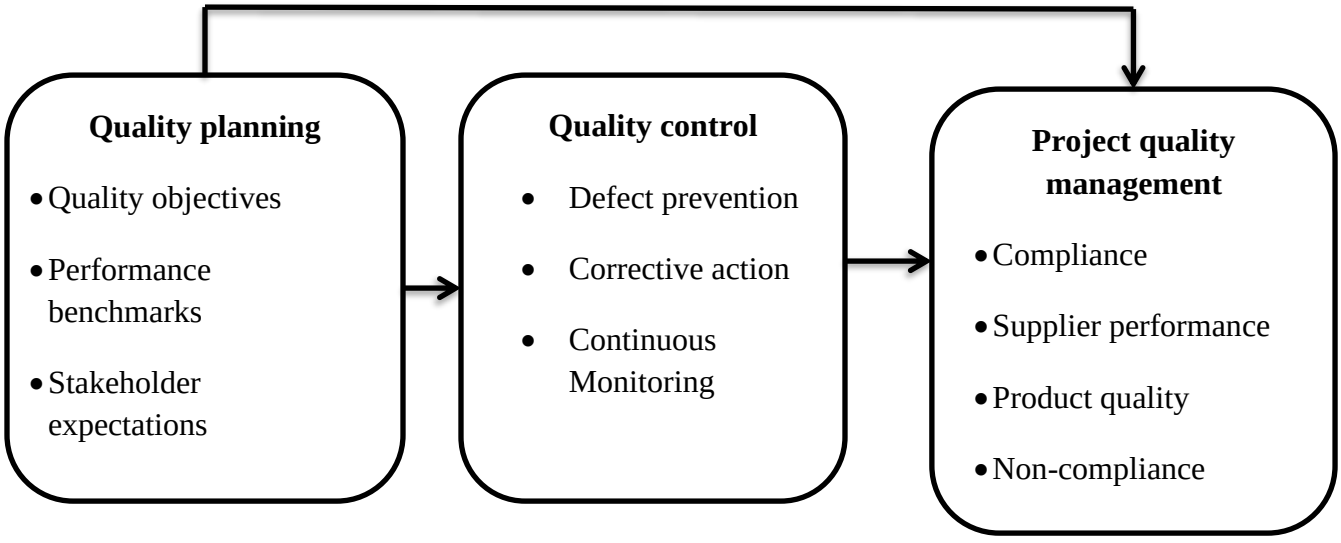
The study was conducted in Iganga District located in the eastern part of Uganda. Iganga District is part of Busoga sub-region and is bordered by Mayuge District to the south, Bugweri District to the east, Luuka District to the north, and Jinja District to the west.

1.6.3 Time scope

The research focused on NGO projects implemented within the past five years (2019–2024). This period is selected to capture recent trends in project quality management while ensuring the availability of relevant data and records. s

1.7 Conceptual framework

Figure 1-1: Conceptual framework



Source: (ISO-9001, 2015; PMI, 2013; Trivedi et al., 2024; Juran, 1988)

According to the above conceptual framework, quality planning is viewed as a three dimensional construct measure as quality objective, performance benchmarks, and stakeholder expectations (Juran, 1986). On the other hand quality control is also viewed as a three dimensional construct consisting of continuous monitoring, defect prevention, and corrective (Trivedi et al., 2024). Project quality management will be measured according ISO-9001 (2015) as Compliance, Supplier performance, product quality, and Non-compliance management. Additionally, the conceptual framework indicates that quality planning predicts project quality management. This direct relationship is further mediated by quality control.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter highlights literature about the theoretical foundation of the study, description of the variables under study, and empirical literature reviewed in accordance with the study's objectives.

2.2 Theoretical framework

This study was anchored on Juran's Quality management theory (1988)

2.2.1 Juran's Quality management theory (Trilogy)

Juran (1988) proposed the Juran Trilogy, which comprises quality planning, quality control, and quality improvement. This framework highlights quality planning and quality control as critical predictors of quality management. Quality planning involves defining quality objectives, setting performance benchmarks, and aligning stakeholder expectations. Establishing these elements at the beginning of the project helps minimize risks, reduce inefficiencies, and enhance overall project quality performance. Without proper planning, projects are susceptible to defects, rework, and stakeholder dissatisfaction, leading to increased costs and delays (Chepng & Kimutai, 2021).

While quality planning lays the foundation for success, quality control ensures that projects adhere to these predefined standards throughout their lifecycle. Juran (1988) describes quality control as a systematic process involving continuous monitoring, defect prevention, and corrective actions. Using requirements documents, stakeholder registers, and predefined standards, project teams can identify and address deviations before they escalate into significant failures(Chin & Ting, 2024). Effective quality control mechanisms enhance process reliability, minimize defects, and optimize resource utilization, ensuring that project deliverables meet stakeholder expectations. Without robust quality control, even well-planned projects can experience inefficiencies and compromised outcomes.

The relationship between quality planning, quality control, and overall PQM is crucial in determining project success. When effectively integrated, these components lead to improved efficiency, reduced risks, and higher stakeholder confidence. Therefore, this study will seek to examine the mediating role of quality control in the relationship between quality planning and project quality management among NGO projects in Iganga District.

2.3 Conceptualization of variables

2.3.1 Quality planning

Quality planning is a critical component of project management that involves identifying quality standards, defining objectives, and establishing processes to ensure that project deliverables meet stakeholder expectations. Juran (1988) defines quality planning as the process of developing products and services that align with customer needs while minimizing defects. Similarly, Carvalho et al (2021) describes quality planning as a systematic approach to integrating quality into project execution through structured policies and procedures. According to the Project Management Institute, quality planning entails identifying relevant quality requirements and compliance measures to enhance efficiency and stakeholder satisfaction (PMI, 2021). These definitions emphasize the proactive nature of quality planning in ensuring that potential risks and inefficiencies are addressed before project execution.

Various scholars have measured quality planning using different indicators. Crosby (1979) suggests that quality planning can be assessed by evaluating adherence to established quality standards and the level of defect prevention. Deming (1986) emphasizes process consistency through the Plan-do-check-act (PDCA) cycle. He suggests that planning involves identifying objectives, setting standards, and developing a strategy. According to the PMI (2013), quality planning involves requirements documentation, developing a stakeholders' register, developing a risk register, and

capturing the cost of quality. These indicators help assess whether planning efforts translate into cost efficiency, stakeholder alignment, and well-defined project requirements, which are essential for successful implementation.

This study measured quality planning in NGO projects in Iganga District using quality objectives, performance benchmarks, and stakeholder expectations as outlined by Juran (1986). Quality objectives refer to the specific, measurable targets that guide project execution to ensure desired quality outcomes (Sahil & Samiksha, 2020). Performance benchmarks will assess the extent to which NGOs establish and adhere to measurable criteria for evaluating project success, ensuring consistency in quality management practices (PMI, 2013). Stakeholder expectations will evaluate the level of stakeholder involvement in defining quality standards, as effective quality planning requires identifying and engaging key stakeholders to align project goals with community needs (Mulama & Sang, 2023). These metrics are justified because they align with best practices in project quality management and provide a comprehensive assessment of how well NGOs plan for quality in their projects.

2.3.2 Quality Control

Quality control is the systematic process of monitoring, measuring, and correcting project activities to ensure that outputs conform to established quality standards. Juran (1988) defines quality control as the practical execution of quality planning through regular inspections and corrective actions. On the other hand, Deming (1986) emphasizes the role of statistical process control and consistency in minimizing variations. These views suggest that quality control is not only about detecting defects but also about establishing a system that prevents them from re-occurring.

Various scholars have measured quality control diversely. For example, Crosby (1979) focuses on defect reduction and the effectiveness of inspection routines, whereas ISO standards advocate for comprehensive process documentation and adherence to controlled procedures. Trivedi et al., (2024) recognize the importance of change management, monitoring & inspection, and process control as central features in quality control. Inspection & Monitoring will facilitate real-time detection of deviations from quality standards(Olivia & Gachili, 2024), Change Management will ensure that adjustments are effectively implemented to address emerging issues (Athian et al., 2024) and Process Control will standardize procedures to sustain quality throughout project execution (Trivedi et al., 2024). Therefore, this study measured quality control in NGO projects in Iganga District using the measures proposed by Juran (1986) which include continuous monitoring, defect prevention, and corrective action. These measures provide a good framework for evaluating quality control and ensuring that projects continuously align with established quality benchmarks.

2.3.3 Project Quality Management

Project Quality Management (PQM) is a structured approach to ensuring that project processes and deliverables meet established quality standards and stakeholder expectations. Chin and Ting (2024) define PQM as the coordination of activities aimed at achieving and maintaining a desired level of quality throughout the project lifecycle. Likewise, the Project Management Institute (PMI, 2013) describes PQM as a framework that integrates quality planning, quality control, and quality assurance to enhance efficiency, minimize defects, and ensure project success. These definitions highlight that PQM is a comprehensive and ongoing process that requires proactive planning, rigorous control mechanisms, and strategic quality improvement initiatives.

Scholars measure PQM using various indicators that reflect both process effectiveness and output quality (Syed, 2024). Crosby (1979), one of the major contributors of the total quality management

theory assesses PQM through the *four absolutes* of quality (conformance to requirements prevention, zero defects, and cost of non-conformance). On the other hand Deming (1986) focuses on the Plan-do-check-act cycle as key to effect project quality management. However, this study will measure PQM in NGO projects in Iganga District using the ISO 9001(2015) quality management standards, specifically Compliance, Supplier Performance, Product Quality, and Non-Compliance Management. Compliance will assess whether NGO projects adhere to established quality regulations and industry standards. Supplier Performance evaluated the consistency and reliability of external contributors in maintaining quality. Product Quality will measure the extent to which project outputs meet predefined expectations, while Non-Compliance Management examined how effectively NGOs identify, address, and mitigate quality deviations. These metrics are justified because they align with global best practices, ensuring a comprehensive and standardized assessment of PQM in NGO projects.

2.4 Empirical literature

2.4.1 Relationship between Quality planning and Project quality management

Literature suggests that there is a positive relationship between Quality planning and project quality management as it establishes the foundation for achieving compliance, enhancing supplier performance, ensuring product quality, and managing non-compliance effectively(ISO, 2013; Magoola et al., 2023; Nduhura, Settumba, Phuyal, et al., 2024). Quality planning encompasses activities such as defining quality standards, identifying quality requirements, and developing processes to meet these requirements. Without proper planning, projects are likely to realize an increase in defects, delays, and cost overruns due to poor adherence to standards (Okello, 2023). Studies have shown that integrating quality planning with project management strategies leads to improved efficiency and reduced risks of project failure (Chepng & Kimutai, 2021; Okello & Okech, 2023).

When conducting quality planning, the cost of quality (CoQ) is a key determinant of project quality management as it represents the total investment needed to prevent, detect, and rectify quality issues (Sadkowski & Jedynak, 2022). A study conducted by Garg and Misra (2022) in 122 construction projects in India found that projects with inadequate quality cost allocation often suffer from poor compliance, supplier quality issues, and frequent rework incidents. Effective CoQ management ensures that resources are allocated to quality improvement initiatives, thereby reducing rework and increasing overall project success rates (Chin & Ting, 2024). Another study conducted by Flanagan & Jewell (2019) highlighted that a well-planned CoQ strategy reduces material wastage and enhances supplier performance, leading to higher product quality.

Additionally, developing a stakeholder register is crucial in identifying and managing individuals and groups that influence project quality management (Pradeep, 2024). The involvement of stakeholders ensures that compliance requirements are met, supplier performance is monitored (Sadkowski & Jedynak, 2022), and product quality expectations are clearly defined (Chin & Ting, 2024). A study by Ahmed (2024) emphasized the importance of stakeholder engagement in quality assurance, as projects with well-documented stakeholder registers demonstrate fewer compliance issues and good non-compliance management (Hakizimana et al., 2024). Furthermore, stakeholder collaboration in different industries, such as healthcare and construction, has been shown to improve project outcomes by aligning quality objectives with stakeholder interests (Nduhura, Settumba, Phuyal, et al., 2024).

A study conducted by Jarzebowicz and Polocka (2017) revealed that Requirements documentation is a vital element of quality planning as it specifies the project's quality standards, acceptance criteria, and compliance standards. According to Klaus-Rosińska & Iwko(2021), comprehensive requirements documentation reduces ambiguity and misinterpretations, leading to improved

supplier performance and product quality. A similar study by Mulama & Sang (2023) among projects under compassion international in Busia district reported that there are significant reductions in non-compliance cases when detailed requirements are established at the planning stage. However, despite existing literature suggesting a positive relationship between quality planning and project quality management, most of these studies have been conducted in construction industry except Mulama & Sang (2023) who conducted their studies in livelihood projects under compassion international. This study seeks to cover this gap by broadening the scope to focus on all NGO projects in Iganga district. The researcher therefore the researcher hypothesized that;

H1: There is a positive and significant relationship between quality planning and project quality management

2.4.2 Relationship between quality planning and quality control

Quality planning and quality control (QC) are essential components of quality management, yet their relationship varies depending on the industry and type of projects (PMI, 2021). Quality planning establishes the framework by defining quality requirements, cost implications, stakeholder involvement, and documentation processes, while quality control ensures adherence to these plans through inspection, monitoring, process control, and change management (Nduhura, Settumba, & Phuyal, 2024). According to available literature, studies suggest that strong alignment between quality planning and quality control leads to better project outcomes (Alshourah, 2021).

Firstly, the cost of quality (CoQ) significantly influences quality control processes (Molokwane et al., 2020). According to Nyakala et al (2019), high quality planning costs can lead to more effective quality control, reducing rework and defects. Hakizimana et al., (2024) found that cost planning and productivity factors also had a higher impact in influencing the performance of building construction projects. However, other studies suggest that excessive spending on quality planning

does not always translate to better quality control, particularly in cost-sensitive industries (Alshourah, 2021).

Developing a stakeholder register helps in identifying key individuals who influence quality control. A study by Manjo (2024) in Nigeria found that poor planning as another factor responsible for low quality infrastructure project failures in Nigeria. He recommended that involving stakeholders in quality planning would improve compliance with quality control processes. However, other studies specifically in construction highlight that misalignment between stakeholder expectations and quality control measures can lead to inefficiencies (Molokwane et al., 2020). Additionally, requirements documentation serves as a reference for quality control processes. Well-documented requirements help in establishing effective inspection and monitoring mechanisms (Mohsen et al., 2023). However, Uribe (2018) insists that excessive documentation may delay the implementation of quality control measures, as observed in certain manufacturing projects.

In conclusion, the literature presents contrasting views on the relationship between quality planning and quality control. While some studies emphasize their interdependence for achieving high-quality outcomes (PMI, 2021), others argue that overemphasis on planning can lead to inefficiencies in quality control execution Uribe (2018). This study therefore intends to assess the nature of the relationship between quality planning and quality control in the case of NGO projects in Iganga District. Based on the above literature, the researcher hypothesized that;

H2: there is a positive relationship between quality planning and quality control

2.4.3 Relationship between quality control and project quality management

The relationship between quality control (QC) and project quality management (PQM) is well documented through out literature though positing mixed assertions. Some studies assert that stringent quality control measures directly improve project quality outcomes by minimizing defects

and ensuring compliance (Athian et al., 2024). However, Other scholars argue that excessive quality control processes can introduce inefficiencies, causing delays, increase costs of quality, and thereby causing cost overruns (Asfoor et al., 2022; Mulongo, 2024). This is an indicator of general lack of an absolute conclusion on the nature of the relationship between quality control and project quality management.

As part of quality control, Inspection and monitoring influences project quality management by identifying defects and ensuring compliance with specifications. A study conducted by Sahil & Samiksha(2020) in construction and manufacturing projects in India revealed that real-time monitoring systems have significantly reduced defects and rework, leading to cost savings and improved efficiency (Bor, 2024). Their findings are supported by those of Carvalho et al (2021) who found that visual monitoring and inspection improves the digitization of the factory with several advantages in terms of production efficiency, product quality and cost reduction. However, there is debate on the effectiveness of extensive monitoring and inspection. While some scholars argue that rigorous monitoring enhances compliance and supplier accountability (Carvalho et al., 2021), others suggest that it may introduce delays and administrative burdens without necessarily improving quality outcomes (Mulongo, 2024). This indicates that inspection effectiveness depends on factors such as project size, complexity, and stakeholder involvement.

Additionally, change management as part of quality control is vital when handling changes in requirement documentation sometimes resulting from additional stakeholders specifications (Mulama & Sang, 2023). Umutesi and Malgit (2024) found a positive correlation between change management strategies and quality assurance, indicating that structured and well organized change management improves project outcomes. Also, when the change is managed well, it contributes positively to team productivity thereby project quality. However, given the dynamic nature of client

expectations characterized by a continuous cycle of identifying, measuring, and enhancing both tangible and intangible products and services, Trivedi et al (2024) suggested that excessive project changes without proper controls lead to psychological strain among project teams, indirectly reducing project quality. These views are supported by Chepng and Kimutai (2021) who asserts that excessive change management efforts sometimes disrupt workflows, negatively affecting long-term project quality.

The relationship between process control and project quality management is well documented in literature, showing both positive and negative correlations. Effective process control ensures consistency, minimizes variability, and improves efficiency, leading to enhanced project quality. According to Sahil and Samiksha (2020),organizations that implement robust process control mechanisms experience fewer defects, increase uniformity, and adherence to quality standards. Similarly, (Prasetiya & Patriadi, 2025) found that using statistical tools such as Statistical Process Control (SPC) and Statistical Quality Control (SQC), where quality is managed from the start of production, throughout the production process, and until the final product is completed ensures consistency in product quality, compliance and non-compliance management.

In conclusion, despite the abundance of empirical evidence documenting the nature of the relationship between quality control and project quality management, it is highly suggestive that there are varying conclusions about the nature of the relationship between quality control and project quality management which hinder generalizability in different contexts. Therefore, this study intends to assess the relationship between quality control and project quality management in in cage of NGO projects in Iganga District. In view of the above literature, the researcher hypothesized that;

H3: there is a positive relationship between quality control and project quality management

2.4.4 The mediating role of quality control in the relationship between quality planning and project quality management

Quality planning (QP) is widely recognized as a critical component of project quality management (PQM). Numerous studies have established a direct relationship between QP and PQM (ISO, 2013; Magoola et al., 2023; Nduhura, Settumba, Phuyal, et al., 2024). However, despite this well-documented relationship, the underlying mechanism that explains how quality planning influences project quality management remains unexplored. Recent research has highlighted the potential mediating role of quality control in various project management relationships (Aldhaen, 2024; Chmiel, 2024).

Aldhaen (2024) explored the relationship between quality management strategies and project sustainability, with quality control acting as a mediator. The findings revealed that quality control partially mediates the relationship between quality planning and overall sustainability. A similar study by Chmiel (2024) investigated the impact of process quality management on supplier performance, using quality control as a mediator. The study also found that quality control processes significantly mediates the relationship between quality planning management and supplier performance. Additionally, quality control dimensions such as monitoring have been used independently as mediating variables. For instance Carter et al (2012) assessed the mediating role of monitoring in the relationship between religion and self-control. The study also confirmed the mediating role of monitoring.

Based on the above literature, while the mechanism underlying the relationship between quality planning and project quality management has been explored using other mediators such as risk management and leadership, the mediating role of quality control remains underexplored. Therefore, to address this gap in literature, the researcher hypothesizes that;

H4: Quality control mediates the relationship between quality planning and project quality management.

2.5 Summary

This chapter highlights the related empirical literature about the relationship between quality planning, quality control, and project quality management. Despite the abundance of empirical literature, there is evidence of varying conclusions about the relationship between variables. While some scholars found a positive relationship, others report negative relationships between he variables. This contradiction brings about a debate which this study intends to resolve. Also, the mediating role of quality control in the relationship between quality planning and project quality management is largely unexplored, hence this study.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter comprises the research design, study population, sample size determination, sampling procedures, data collection instrument, data collection procedures, measurement of variables, data quality control, data analysis and presentation, and ethical considerations.

3.2 Research Design

A research design is defined as a set of well-sequenced steps used by a researcher in the collection, analysis, and reporting of data to allow the provision of answers to research questions regarding specific variables (Hughes & Loraine, 2018). This study adopted a cross-sectional research design which allows for the collection of quantitative data at a single point in time (Xiaoyan, 2020). The choice of a cross-sectional design is justified by its efficiency in collecting data within a short period while establishing associations between study variables (Neuman, 2019). Given that the aim of the study is to test rather than generate theory, this necessitates a quantitative approach to describe and draw inferences regarding the relationship between quality planning, quality control, and project quality management in NGO projects in Iganga District (Byrne, 2002). Also using a quantitative approach makes it easier for the research to make conclusions about findings without bias.

3.3 Study Population

The study population refers to the total number of elements from which the researcher anticipates collecting information (Creswell, 2017). This study focused on 109 NGO projects implemented in Iganga District See appendix. A list of these projects has been compiled from the various NGO websites and the National NGO forum website as at 20th March 2025. See Appendix

3.4 Sample Size Determination

The sample size for the study will be determined using Yamane's (1967) formula. This method was favored over other methods because of its flexibility and precision when compared to Krejcie and Morgan (1970) table. The sample size was derived as below;

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

Where:

n= sample size

N = total population (109 NGO projects)

e = margin of error (5%)

$n=109/1+109(0.05)^2$

n=109/1+109(0.0025)

n=109/1.2725

n=85.65 approximately 86

Therefore, Using the above formula, a sample of 86 will be derived from a population of 109 projects

3.5 Unit of analysis and Unit of Inquiry

3.5.1 Unit of Analysis

The unit of analysis is the primary entity or object that a study seeks to investigate or draw conclusions about (Yeboah, 2023). In this study, the unit of analysis comprised of NGO projects

implemented within Iganga District. These projects form the central focus of analysis in understanding the dynamics of project quality management and related organizational practices.

3.5.2 Unit of inquiry

The unit of inquiry refers to the individuals from whom data is directly collected as they possess the knowledge and experience relevant to the study's objectives (Rogelberg, 2021). The unit of inquiry in this study included Project Managers, Operations Managers, Quality Assurance Officers, and project accountants. These individuals have been purposively selected due to their direct involvement in the project quality management processes, giving them the necessary insight required for this study.

3.6 Sampling Procedures

The study employed simple random sampling to select a sample of 86 NGO projects from the total population of 109 projects. This technique ensures that every project in the sampling frame has an equal chance of being included in the study, thereby bias in selection (Jackson, 2021). The names of the 109 projects will be written on small pieces of paper, mixed in a container, and 86 will be randomly selected to determine the sample size. The unit of analysis consisted of NGO projects in Iganga District, while the unit of inquiry included project managers, assistant project manager, and accountant. These respondents were purposively selected because they possess relevant experience and knowledge regarding project quality management.

3.7 Data Collection Instrument

This study used a structured questionnaire to standardized responses from respondents across the sampled projects. This method is was preferred over other methods such as interviews or focus discussion groups because it is not only cost effective, but also allows for efficient data collection

from large samples while ensuring consistency in responses (Taherdoost, 2021). The questionnaire was divided into sections. Section A will capture demographic information about respondents and projects, while Section B will focus on quality planning, quality control, and project quality management. The use of a questionnaire is preferred due to its ability to collect data from multiple respondents within a short period and at a lower cost (Taherdoost, 2021).

3.8 Data Collection Procedures

After obtaining permission from the university and the relevant authorities in Iganga District, the researcher will proceed with the data collection process. Structured questionnaires were self-administered to the selected respondents across the sampled projects. However, to ensure efficiency and coverage within the allocated timeframe, the researcher was assisted by two trained research assistants. These assistants help in distributing the questionnaires, clarifying any issues raised by respondents, and ensuring proper follow up to enhance response rates (Brewer, 2006). Respondents were given up to one week to complete the questionnaires, after which the research team will systematically collect the completed forms for data cleaning and subsequent analysis.

3.9 Measurement of Variables

Measures for the study variables will be adopted from established frameworks and modified to suit the study.

3.9.1 Quality Planning

Quality Planning was assessed using fifteen (15) items adapted from Ahire, Golha, and Weller (1996) and Conca (2016). These items evaluated the extent to which organizations define and communicate quality objectives, implement performance benchmarks, and incorporate stakeholder expectations into project planning. A five-point Likert scale (1 = Strongly Disagree, 2 = Disagree,

3 = Neutral, 4 = Agree, and 5 = Strongly Agree) was used allowing respondents to indicate their level of agreement with each statement

3.9.2 Quality Control

Quality Control was also be measured using thirteen (13) items derived from Conca (2016) focusing on defect prevention, corrective actions, and continuous monitoring. These measures assessed the organization's capacity to establish preventive mechanisms to mitigate project defects, implement corrective actions, and employ systematic monitoring approaches. The items were anchored on a five-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree), allowing respondents to indicate their level of agreement with each statement

3.9.3 Project Quality Management

Project Quality Management was evaluated using twelve (12) items adapted from Conca (2016) The assessment will examine compliance with national and international quality standards, supplier performance in delivering quality inputs, and adherence to defined product quality standards in project execution. Measurement items was anchored on a five-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree), allowing respondents to indicate their level of agreement with each statement

3.10 Data Quality Control

3.10.1 Validity of the Instrument

Validity refers to the extent to which the research instrument measures what it is intended to measure (Kothari, 2004). The validity of the data collection instrument was ensured through expert review in the area of academic and practice who will evaluate the questionnaire’s relevance in achieving study objectives. Additionally, a pre-test was conducted with a subset of respondents from a similar study setting to refine ambiguous or unclear questions.

The validity of the instrument will be determined using the Content Validity Index (CVI), calculated by dividing the number of items rated as relevant by 10 people of which 5 were be from the field of practice and 5 from the field of academics with knowledge about project quality management. The instrument was considered valid since the CVI exceeded 0.70, as recommended by Amin (2005).

3.10.2 Reliability of the Instrument

Reliability refers to the degree to which a research instrument produces consistent and stable results when repeatedly used in similar conditions (Kumar, 2011). Reliability analysis will be conducted using data from a pilot study involving 15 respondents from NGO projects in Namutumba district. This was chosen because of the similarity in the project implementation environment with that of NGO projects in Iganga district where the main study was conducted. The collected data was analyzed using Cronbach's alpha in SPSS to determine the internal consistency of the questionnaire items. A Cronbach's alpha value of 0.7 or higher meant the tool was considered acceptable for reliability, following the threshold recommended by Smith and Smith (2018).

Table 3-1: Reliability and Validity

Variable	Number of Items	CVI	Cronbach's Alpha
Quality planning	15	.781	.833
Quality Control	11	.750	.785
Project Quality management	17	.793	.894

Source: Primary Data, 2025

3.11 Data Analysis and Presentation

Data collected through the structured questionnaire was checked for completeness and inconsistencies before being entered into SPSS v22 for analysis. The study employed descriptive

statistics, correlation analysis, and regression analysis to examine the relationships between the study variables. Descriptive statistics provided insights into the characteristics of the sampled projects (Creswell, 2017). Furthermore, data was aggregated at the level of unit of analysis before further analysis. Pearson's correlation analysis was used to determine the strength and direction of associations between quality planning, quality control, and project quality management (Syazali et al., 2019). Also, Regression analysis was conducted to assess the extent to which variations in project quality management can be explained by quality planning and quality control. Mediation analysis was performed using Hayes SPSS Process Macro V 4.2, Model 4 to determine whether quality control mediates the relationship between quality planning and project quality management.

3.12 Ethical Considerations

Ethical considerations are fundamental in research to ensure integrity, confidentiality, and respect for participants (Harper, Herbst, & Kalfa, 2018). Before to data collection, approval was sought from the Busitema University faculty of management science and relevant district authorities in Iganga District. Confidentiality and anonymity was maintained throughout the research process. Respondents' names were not be recorded on the questionnaires, and the collected information will not be shared among participants. The purpose of the study was clearly communicated to respondents and their informed consent will be obtained before data collection (Hughes & Loraine, 2018). Additionally, honesty and academic integrity was upheld by acknowledging all sources used in developing this research through proper citation and referencing. This approach ensured that the research adheres to ethical standards and avoids any form of data falsification or plagiarism.

Additionally, participation in the study was entirely voluntary, with respondents assured that there are no penalties or consequences for opting not to participate. Additionally, participants retained

the right to withdraw at any stage of the research process. These measures are intended to protect the autonomy of the respondents and uphold ethical research conduct.

Finally, the researcher maintained the highest standards of honesty and academic integrity by accurately reporting findings and properly acknowledging all sources through citation and referencing. This ethical framework ensures that the research avoids any form of data manipulation, plagiarism, or academic misconduct.

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION, AND INTERPRETATION OF FINDINGS

4.0 Introduction

This chapter presents the data analysis results using the techniques stipulated in the methodology chapter. Specifically, the chapter contains the response rate, demographic characteristics, correlation results, regression analysis, and mediation results. All these are in accordance with the stated objectives of the study.

4.1 Response rate

Out of the 344 questionnaires distributed to respondents, 215 were dully filled and returned. This represents a response rate of 62.5% at the level of unit of inquiry. According to Babbie (2010), a response rate of 50% and above is adequate for researcher to run inferential statistics and make generalizations. Also, out of the 86 NGO projects targeted, only 73 projects participated in the study representing 84.8%. This response rate is considered adequate according to Babbie (2010).

4.2 Demographic characteristics

Table 4-1: Demographic information

Item		Frequency	Percentage
Gender	Male	138	64.2
	Female	77	35.8
Total		**215**	**100**
Age group	20-25	8	3.7
	26-35	131	60.9
	36-45	49	22.8
	46-55	21	9.8
	55 and above	6	2.8
Total		**215**	**100**
Level of education	Certificate	9	4.2
	Diploma	62	28.8
	Degree	95	44.2
	Post Graduate	49	22.8
Total		**215**	**100**

Position Held	Project Manager	53	24.7
	Operations Manager	42	19.5
	Project Accountant	70	32.6
	Quality Assurance officer	50	23.3
Total		**215**	**100**

Source: Primary Data, 2025

According to the findings in Table 4.1, the gender distribution reveals a notable imbalance, with 64.2% of respondents being male and 35.8% female. Despite this disparity, the inclusion of both genders introduces diversity in perspectives, relevant for inclusive quality management practices. Additionally, a significant majority (60.9%) fall within the 26–35 bracket, indicating a predominantly young workforce likely familiar with modern quality management tools. However, limited representation of respondents aged 46 and above (12.6%) may result in an underrepresentation of experiential insights and traditional quality practices. With regards to education, majority of respondents (67%) hold degree or postgraduate qualifications. This indicates that majority of the project team members are knowledgeable enough to understand the principles of project quality management and how they can be applied. Diploma holders (28.8%) offer practical insight, while the small proportion of certificate holders (4.2%) may reflect that there is room for growth in terms of academic learning. Furthermore, according to occupation, all core targeted respondent categories were represented with Project Accountants (32.6%), Project Managers (24.7%), Quality Assurance Officers (23.3%), and Operations Managers (19.5%). This distribution allows for perspectives across financial, strategic, and operational dimensions of project quality.

4.3 Correlation analysis

Table 4-2:Corellation results

	1	2	3
Quality Planning (1)	*		
Quality Control (2)	.539**		
Project Quality management (3)	.622**	.664**	
**. Correlation is significant at the level of 0.01 (2-tailed)			

Source: Primary data, 2025

The correlation matrix in Table 4.2 above reveals significant and positive relationships among Quality Planning, Quality Control, and Project Quality Management, with all correlations significant at the 0.01 level (2-tailed). The correlation between Quality Planning and Quality Control indicates a moderate positive association ($r = 0.539$, $P<0.01$). This suggests that as quality planning improves, it triggers an increase in the implementation of quality control measures. Furthermore, Quality Planning and Project Quality Management exhibit a stronger correlation ($r = 0.622$, $P<0.01$) which signifies that effective planning processes contribute substantially to overall improvement in project quality management. The relationship between quality control and project quality management demonstrates the strongest correlation ($r = 0.664$, $p<0.01$). This implies that an increase in quality control leads to a significant increase in project quality management.

4.4 Regression

In order to assess the predictive power of the independent variables (Quality Planning and Quality Control) on the dependent variable (Project quality management), a regression analysis was conducted. The results are indicated in the tables below;

4.4.1 Quality Planning and Project Quality management

Table 4-3: Regression Analysis of Quality planning and Project Quality Management

Coefficients							
Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		B	Std. Error	Beta	df		
1	(Constant)	1.359	.411		1	3.307	.000
	Quality Planning	.668	.100	. 622		6.701	.000
	R = . 622[a]		R^2 = .386	Adj. R^2 = .379		F = 44.909	.000

a. Dependent Variable: Project Quality management

Source: Primary Data, 2025

The regression results in Table 4.2 above indicate a statistically significant relationship between Quality Planning and Project Quality Management. The standardized coefficient (β = 0. 622, p<0.01) suggests that the relationship between quality planning and project quality management is positive and strong. In addition, the t-value of 6.701 and significance level (p < .001) confirm that this relationship is highly significant and unlikely to have occurred by chance. Furthermore, the findings indicate that 37.9% of the variance in project quality management is explained by quality planning alone (Adj. R^2 = .379, p<0.01). The F-statistic of 44.909 (p < .001) further reinforces the model's overall significance, indicating that the regression model provides a better fit than a model without predictors. Together, these findings underscore the critical role of quality planning as a strong and reliable predictor of effective project quality management.

4.4.2 Quality planning and Quality Control

Table 4-4: Regression Analysis of Quality Planning and Quality Control

Coefficients							
Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		B	Std. Error	Beta	df		
1	(Constant)	1.668	.456		1	3.655	.000
	Quality Planning	.596	.111	.539		5.388	.000
	R = .539[a]		R^2 = .290	Adj. R^2 = .280		F = 29.031	.000

a. Dependent Variable: Quality Control

Source: Primary Data, 2025

The regression analysis results in Table 4.3 above reveal a significant and positive relationship between Quality Planning and Quality Control (B=0.596, Adj. R^2=.280, F=29.031, t=5.388, p<0.01). The standardized coefficient (β = 0.539, p<0.01) indicates that there is a moderate but positive association between quality planning and quality control. The t-value of 5.388 and the p-value <.01 confirm that this effect is statistically significant. The adjusted R^2 of 0.280 shows that 28% of the variance in quality control can be explained by quality planning, highlighting its moderate predictive power. Additionally, the model's F-statistic of 29.031 (p < .001) supports the overall significance of the regression model, indicating that it provides a meaningful improvement over a model with no predictors. These findings support the hypothesis that quality planning is a predictor quality control.

4.4.3 Quality control and project quality management

Table 4-5: Regression Analysis of Quality Control and Project Quality management

Coefficients							
Model		Unstandardized, Coefficients		Standardized Coefficients		t	Sig.
		B	Std. Error	Beta	df		
1	(Constant)	1.453	.355		1	4.091	.000
	Quality Control	.644	.086	.664		7.490	.000
	R = .664[a]		R^2 = .441	Adj. R^2 = .434		F = 56.101	.000

a. Dependent Variable: Project Quality management

Source: Primary Data, 2025

The regression analysis results in Table 4.4 above reveal a significant and positive relationship between Quality Control and Project Quality Management ($\beta = 0.644$, Adj. $R^2 = .434$, $F = 56.101$, $t = 7.490$, $p < 0.01$). The standardized coefficient ($\beta = 0.644$, $p<0.01$) indicates that a strong association between quality control and project quality management exists. The t-value of 7.490 and the p-value < .01 confirm that this effect is statistically significant. The model also explains 43.4% of the variance in project quality management (Adj. $R^2 = .434$, $p<0.01$). Additionally, the model's F-statistic of 56.101 ($p < .001$) supports the overall significance of the regression model. These findings support the hypothesis that quality control has a strong and positive association with project quality management.

4.5 Mediation analysis

To examine the mechanism through which Quality Planning (QP) influences Project Quality Management (PQM), a mediation analysis was conducted using Hayes' PROCESS macro (Model 4). The results of the analysis are shown in table 4.5 Below;

Table 4-6: Mediation Analysis

Path / Effect	Coefficient (B)	SE	t	p-value	95% CI (LLCI–ULCI)
Path a: QP → QC	0.5961	0.1106	5.3881	< .001	[0.3755, 0.8167]
Path b: QC → PQM	0.4493	0.0933	4.8178	< .001	[0.2633, 0.6354]
Path c: Total effect (c = a × b + c')	0.6676	–	–	–	–
Direct effect c' (QP → PQM)	0.3997	0.1032	3.8735	< .001	[0.1939, 0.6056]
Indirect effect (a * b)	0.2678	0.0769†	–	–	[0.1353, 0.4395]
Ratio Index (Indirect/Total)	0.4014	–	–	–	–
Model R^2 (for PQM)	0.5400				
F-statistic (for PQM)	41.0851	df = 2, 70		< .001	

Source: Primary data, 2025

The mediation analysis was conducted to examine whether Quality Control (QC) mediates the relationship between Quality Planning (QP) and Project Quality Management (PQM). The results show that path a, representing the effect of QP on QC was statistically significant (B = 0.5961, SE = 0.1106, t = 5.3881, p < .001, 95% CI [0.3755, 0.8167]). This suggests that stronger quality planning is significantly associated with improved quality control practices. Path b, which assesses the effect of QC on PQM was also significant (B = 0.4493, SE = 0.0933, t = 4.8178, p < .001, 95% CI [0.2633, 0.6354]). This indicates that quality control contributes significantly to project quality outcomes.

The total effect (path c) of QP on PQM representing the overall relationship before accounting for the mediator was also significant at B = 0.6676, indicating a strong positive association between QP and PQM. After introducing the mediator, the direct effect (path c′) of QP on PQM reduced from β=.6676 to β=.3997 but remained statistically significant (β = 0.3997, SE = 0.1032, t = 3.8735, p < .001, 95% CI [0.1939, 0.6056]). This shows that QP still has an independent effect on PQM, even when the influence of QC is controlled for an indicator that quality control partially mediates the relationship between quality planning and project quality management. The indirect effect (a ×

b), which captures the mediating role of QC, was also statistically significant at B = 0.2678, with a bootstrapped 95% confidence interval of [0.1353, 0.4395], confirming that the mediating pathway is robust and reliable because the interval does not contain zero.

The ratio index of mediation, calculated as the proportion of the total effect mediated through QC, was 0.4014, suggesting that approximately 40.1% of the total effect of QP on PQM is transmitted through QC. Furthermore, the overall model demonstrated strong explanatory power, with R^2 = 0.5400, indicating that 54% of the variance in PQM is explained by QP and QC combined. The model's F-statistic of 41.0851 further supports its overall statistical significance and robustness.

CHAPTER FIVE
DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

5.0 Introduction

This chapter contains the discussion of findings, conclusion based on the findings, recommendation based on the conclusions, limitations, and areas for further research. All these are in line with the study objectives.

5.1 Discussion

5.1.1 Quality planning and Quality control

This study sought to explore the relationship between quality planning and project quality management in NGO projects operating in Iganga District. The findings demonstrate a positive and statistically significant relationship between the two constructs, with quality planning emerging as a strong predictor of project quality management. Regression analysis showed that 37.8% of variance in project quality management is explained by quality planning. These findings seem to demonstrate that setting quality objectives, performance benchmarks, and tracking stakeholder expectations improves compliance with quality standards, supplier performance, product quality, and non-compliance management within NGOs. These findings are also in agreement with other scholars (Magoola et al, 2023; Nduhura et al, 2024; Okello, 2023).

The findings seem to suggest that organizations which define and communicate their quality objectives clearly tend to perform better in project compliance, product quality, and overall quality control. Also, when staff are involved in setting these objectives, and when strategies are based on data about customer requirements and internal capabilities, projects are more likely to align with stakeholder expectations and perform within set parameters. This aligns well with ISO (2013), Magoola et al. (2023), and Okello (2023) who emphasize that quality planning forms the strategic foundation for effective project management by preventing defects and ensuring compliance. The

findings highlight the importance of benchmarking as a core quality planning practice. NGOs that benchmark similar projects within and outside the sector not only improve their products but also reduce costs of non-compliance. These findings support the views of Flanagan and Jewell's (2019) who assert that benchmarking is a vital tool for improving performance standards. The findings seem to suggest that where benchmarking is actively practiced, NGOs report stronger performance in areas such as continuous quality monitoring and supplier evaluation.

NGOs that incorporate stakeholder feedback into their planning processes are more likely to meet compliance standards, reduce non-conformance, and deliver results that reflect beneficiary needs. This reinforces the findings by Chin and Ting (2024) and Ahmed (2024), who argue that early and continuous stakeholder involvement reduces misunderstandings and misalignments. Also, the findings seem to suggest that in NGOs where structured stakeholder engagement is practiced, there is a stronger presence of quality assurance mechanisms and a reduction in quality-related risks.

These findings add context to the premises of Juran's Trilogy which posits that quality management is driven by three core processes: quality planning, quality control, and quality improvement. This study provides evidence that quality planning serves as the foundational element in ensuring project managers adhere to quality standards. Contextually, the findings seem to suggest that NGOs that engage in thorough planning are better positioned to embed quality control measures into their workflows, thereby enhancing real-time decision-making and reducing quality related failures.

5.1.2 Quality planning and Quality control

This study also explored the relationship between quality planning and quality control in NGO projects based in Iganga District. The regression results indicate a statistically significant and positive relationship between the two variables. The Adj. R^2 value of 0.280 suggest that

approximately 28% of the variance in quality control can be explained by the nature and strength of quality planning practices. This supports the second hypothesis (H2) that quality planning is positively associated with the effectiveness of quality control mechanisms in NGO projects. The findings seem to suggest that NGOs that invest in comprehensive quality planning practices are better positioned to implement structured and proactive quality control. This is consistent with PMI (2013) and Nduhura, Settumba, & Phuyal (2024), who assert that quality planning provides the framework through documented requirements, stakeholder expectations, and cost considerations upon which effective quality control processes such as monitoring, inspection, and corrective actions are built.

Furthermore, NGOs that have clearly defined and well-communicated quality objectives, as well as those that engage employees in the planning process are more likely to register stronger performance in continuous monitoring and defect prevention. These findings also seem to suggest that clarity in objectives and inclusivity in planning contribute to the establishment of robust control processes during project execution. The study's findings support the argument by Manjo (2024) that stakeholder involvement in planning enhances the feasibility of quality control measures. NGOs which engage stakeholders during planning by integrating feedback and aligning expectations are more likely to report structured methods for monitoring quality and addressing quality concerns. Stakeholder-informed planning enables the creation of practical quality control systems that reflect real needs and reduce resistance during implementation quality control measures.

Additionally, NGOs that maintain clear and comprehensive project requirements tend to develop more structured and responsive control systems. This reinforces the role of documentation as both a guide and a benchmark for evaluating quality conformance. However, these findings contradict with those of Uribe (2018) who cautions that planning or over-documentation can delay quality

control implementation, particularly in fast-paced or resource-constrained settings. While this may suggest that in NGOs where planning becomes overly bureaucratic or rigid, there may be slow adaptation to real-time project needs, the role of quality planning in ensuring effective quality control remains positive and significant.

From a theoretical perspective, the findings align well with Juran's Trilogy, particularly the interdependence between quality planning and quality control. The empirical evidence in this study shows that when planning is strategic, participatory, and benchmarked, the resulting control mechanisms such as defect prevention, corrective action, and continuous monitoring are more functional and effective.

5.1.3 Quality Control and Project Quality Management

This study examined the nature of the relationship between quality control (QC) and project quality management (PQM) in NGO projects operating in Iganga District. The regression results show a statistically significant and strong positive relationship between the two variables, with a standardized beta coefficient of 0.664 ($p < 0.001$) and an Adj. R^2 of 0.43.4. These values indicate that quality control alone explains approximately 43.4% of the variance in project quality management, confirming the hypothesis (H3) that effective quality control contributes substantially to the enhancement of overall project quality. Based on these findings, having quality controls such as inspection for defect prevention, corrective action, and continuous monitoring is essential for an improvement in compliance, supplier performance, product quality, and non-conformance management. These findings are in agreement with those of other scholars (Athian et al. 2024; Asfoor et al,2022; Mulongo 2024)

The findings seem to suggest that NGOs with more structured quality control systems are significantly more likely to achieve higher levels of project quality performance. This supports the assertions by Athian et al. (2024), who found that rigorous quality control mechanisms including monitoring, inspection, and corrective actions educe defects and enhance compliance with standards. These results emphasize the importance of embedding control procedures into the entire project lifecycle to maintain quality consistency. Furthermore, the findings seem to suggest that designing quality control systems which give early warning signs not only avoid defects but also enhances product quality and documentation of non-compliance for further improvement. These findings resonate with Sahil and Samiksha (2020) who reported that real-time monitoring systems reduce rework and improve efficiency.

Additionally, the findings allude that when quality monitoring is done, the finding should be shared with the relevant stakeholders. This is seen to significantly improve review of supplier performance, detect noncompliance, and also act as a basis for improvement in quality management practices for future projects. However, the findings disagree with Asfoor et al. (2022) and Mulongo (2024) who argued that there is a negative association between quality control and project quality management. While the previous studies argued that control measures should be reasonable enough to avoid increasing the costs of quality, this study argues that prevention of deviation through quality control is the best way not only to reduce cost of quality but also to avoid such costs.

Theoretically, these findings align well with Juran's Trilogy, particularly the "control" and "improvement" components. According to Juran, quality control involves evaluating actual performance against established goals, and taking action to close any identified gaps. These findings also extend the applicability of Juran's' principles of quality management by offering practical

insights into how quality control can be optimized in resource-constrained, donor-dependent environments like NGOs.

5.1.4 The mediating role of quality control in the relationship between quality planning and project quality management

The final objective of this study was to investigate the mediating role of quality control in the relationship between quality planning and project quality management among NGO projects in Iganga District. Previous studies have established a direct relationship between quality planning (QP) and project quality management (PQM), highlighting the importance of early goal-setting, resource allocation, and stakeholder involvement to PQM(ISO, 2013; Magoola et al., 2023). However, recent literature calls attention to the mechanisms that explain how quality planning translates into tangible quality outcomes, with several scholars suggesting that quality control (QC) may play an important mediating role (Aldhaen, 2024; Chmiel, 2024). The findings of this study confirm that quality control partially mediates the relationship between quality planning and project quality management. The ratio of the indirect effect to the total effect (0.4014) suggests that about 40.1% of the impact of quality planning on project quality management happens through quality control.

These findings seem to suggest that while quality planning directly contributes to quality outcomes, a significant portion of its effectiveness is realized through the activation of quality control mechanisms such as defect prevention, corrective action, and continuous monitoring. In other words, quality planning lays the foundation by defining quality objectives, benchmarks, and expectations, but these plans are operationalized and enforced through quality control processes. This interpretation is consistent with previous findings by Aldhaen (2024) and Chmiel (2024), who found that quality control significantly mediates the relationship between strategic planning

processes and performance outcomes. Similarly, Carter et al. (2012) confirmed the mediating power of monitoring systems in behavioural research contexts.

Furthermore, the findings seem to allude that NGOs that conduct risk assessment to identify potential project defects stand a better chance of reducing risks of rework and meeting stakeholder expectations. These findings reinforce the notion that without quality control, even the most comprehensive planning cannot ensure executional excellence Chmiel (2024). Also, the findings appear to suggest that NGOs that have robust quality control mechanism always maximize the benefits of their planning strategies since control mechanisms translate abstract goals into enforceable standards. Quality control mechanisms such as real-time monitoring, regular audits, empowerment of staff to take corrective actions, and documentation of deviations for future improvement are vital in translating quality plans into quality deliverables. Therefore, quality control functions as both a mediator and a driver of continuous improvement, bridging the conceptual planning phase and the operational implementation of quality.

Theoretically, these findings integrate seamlessly with Juran's Trilogy Theory, which defines quality management as a triad of planning, control, and improvement. In the context of this study, the mediation findings support the idea that control is the process by which planning becomes action. Quality planning (such as setting benchmarks or engaging stakeholders) provides direction, but it is through control (such as monitoring, defect prevention, and corrective action) that these directions lead to quality project outcomes.

5.2 Conclusion

This study examined the relationship between quality planning and project quality management in NGO projects in Iganga District. The findings revealed a strong, positive, and statistically

significant relationship between quality planning and project quality management. This indicates that quality planning elements such as well articulated of quality objectives, stakeholder engagement, and Performance benchmarking are fundamental to achieving high project quality outcomes such as improved compliance with standards, better supplier performance, reduced instances of non-compliance, and enhanced product quality. Therefore, the study concludes that effective quality planning significantly enhances project quality management in the NGO sector.

The second objective of this study explored the relationship between quality planning and quality control. The findings demonstrated that when NGOs engage in a structured planning processes which includes benchmarking within the NGO sector and similar project, stakeholder expectation management, and quality objectives setting, they are more likely to implement effective quality control practices such as monitoring, defect prevention, and timely corrective actions. Therefore, the study concludes that quality planning plays a critical enabling role in the establishment and operationalization of quality control mechanisms.

The third objective of this study sought to investigate the direct relationship between quality control and project quality management. The findings revealed a statistically significant positive relationship. NGOs that implemented quality control systems characterized by regular audits, defect detection processes, corrective action procedures, and process monitoring are more likely to enjoy higher levels of project success across the numerous quality management indicators such as increased compliance with set standards, improved supplier performance and noncompliance management. Therefore, the study concludes that quality control is a vital driver of project quality management in NGO projects.

The final objective examined the mediating role of quality control in the relationship between quality planning and project quality management. The mediation analysis demonstrated that quality

control partially mediates this relationship. This implies that while quality planning directly influences project outcomes, its full potential is partly realized when complemented by effective quality control. NGOs that embed monitoring, inspection, and feedback mechanisms within their implementation processes can thus convert quality plans into measurable project quality performance. Therefore, the study concludes that quality control is a significant mediating factor through which quality planning translates into enhanced project quality management.

5.3 Recommendations

Based the research findings of this study and the above conclusions, the study makes the following recommendations.

Based on the finding that quality planning significantly influences project quality management, it is recommended that NGOs develop and institutionalize comprehensive quality planning frameworks. This includes setting clear and measurable quality objectives, aligning them with donor and beneficiary expectations, and embedding them into project initiation and design phases of the project life cycle. NGOs should also encourage employee participation and interdepartmental collaboration in defining these quality objectives to enhance ownership and implementation consistency.

Given the significant positive relationship between quality planning and quality control, NGOs should ensure that all quality planning processes are directly linked to actionable control mechanisms. This means that during the planning stage, specific quality control checkpoints, audit procedures, and corrective action plans must be defined. Management should also incorporate early warning systems and performance tracking tools such as Smartsheet software such that every objective in the project plan is linked to a control activity

Since quality control directly and significantly influences project quality management, NGOs should prioritize strengthening their quality control systems. This involves providing adequate training to project teams on defect detection, corrective action protocols, and compliance auditing. There should also be regular quality reviews at every phase of the project lifecycle. NGOs should adopt digital tools and dashboards to improve real-time quality monitoring, as these tools have been found to reduce defects and improve decision-making efficiency.

Finally, the finding that quality control mediates the relationship between quality planning and project quality management underscores the need for NGOs to treat quality control as a core operational bridge between planning and results. It is recommended that NGOs integrate quality control protocols directly into project planning documentation making them a required component of work plans, budgets, and implementation strategies. NGOs should also conduct periodic evaluations to assess how well control mechanisms are enabling the translation of planned goals into quality outcomes and use this data to adjust future planning processes.

5.4 Limitations of the study and areas for further research

Despite the insights provided by this study about quality planning, quality control, and project quality management, the study found the following limitations.

First, the study adopted a cross-sectional design, capturing data at a single point in time. This limits the ability to draw causal inferences or observe changes in quality practices and outcomes over time. Therefore, future studies should consider using a longitudinal study design to provide a clearer understanding of how quality planning and control influence outcomes over a project's life cycle.

Second, the study employed a quantitative approach using a self-administered questionnaire as the sole data collection instrument. While this facilitated the collection of structured and analyzable

data from a relatively large sample, it may have constrained respondents from elaborating on complex or contextual quality management experiences. Incorporating qualitative methods such as interviews or focus groups in future studies could enrich the findings by uncovering deeper insights into how quality control is implemented and perceived in practice.

Third, the study was geographically limited to Iganga District, which is important for local relevance. However, it restricts the generalizability of the findings to other regions or NGO operational contexts since NGOs vary significantly in structure, capacity, donor expectations, and sectoral focus. Future studies should consider expanding the geographical scope to multiple districts or national-level analyses to test the consistency and robustness of the observed relationships.

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APPENDIX I: Questionnaire

Dear respondent,

I am Ssebowa Joshua, an MBA student at Busitema University conducting a study about the mediating role of quality control in the relationship between quality planning and project quality management within NGO projects. Your responses will be kept confidential and used solely for academic purposes.

SECTION A (Demographic information)

Please tick (✔) the appropriate box.

1. **Gender**

   Male [1] Female [2]

2. **Age**

   20 - 25 [1]

   26 – 35 [2]

   36 – 45 [3]

   46 – 55 [4]

   56 and above [5]

3. **Level of education**

   Certificate [1] Diploma [2] Bachelor's degree [3] Post graduate qualification [4]

4. **Position Held**

   [1] [2] [3]

Project Manager Operations Manager Project Accountant

Quality Assurance Officer 4

5. Name of the Organisation

……

SECTION B

For this section, please indicate the level of agreement or disagreement with the statements by ticking 1= Strongly Disagree, 2= Disagree, 3=Not sure, 4=Agree, and 5=Strongly Agree

Code	Statement	SD (1)	D (2)	N (3)	A (4)	SA (5)
Section A: Quality Planning						
Quality Objective						
QO1	The organization clearly defines quality objectives for project managers					
QO2	The management sets objectives for all employees					
QO3	The management in this organisation communicates its strategy and objectives to the whole staff					
QO4	In this organisation, development and implementation of strategies and plans based on data concerning customers' requirements and the firm's capabilities					
QO5	Management involves the employees in the setting of its objectives and plans					
QO6	In this organisation, results are evaluated by comparing them to planned results, in order to make improvements Employee					
Performance Benchmarks						
PB1	In this organisation, we have engaged in extensive benchmarking of other NGO products that are similar to ours					
PB2	Our benchmarking activities have reduced costs					

PB3	We have engaged in extensive benchmarking of other companies' business processes in other industries					
PB4	Benchmarking has helped improve our product.					
PB5	We will definitely continue benchmarking.					
Stakeholder expectations						
SE1	This NGO involves key stakeholders in setting quality expectations					
SE2	Stakeholder feedback is collected and used to refine the quality plans of projects in this organisation					
SE3	For every project executed, this organization ensures that quality expectations align with consumer requirements					
SE4	There are structured methods for addressing stakeholder concerns on quality					
Quality Control						
Continuous Monitoring						
CM1	There is a systematic process for monitoring project quality at each phase of the project					
CM2	This organisation regularly audits project quality					
CM3	Quality monitoring data is shared with relevant stakeholders					
CM4	There are sufficient tools and resources to track quality performance					
Defect prevention						
DP1	The NGO conducts risk assessments to identify potential project defects					
DP2	In this organisation, there are early warning systems in place to avoid defective deliverables					
DP3	Staff in this organisation are trained in defect prevention					
DP4	Quality control processes are embedded in the project workflows					
Corrective action						
CA1	This organization has a well-defined process for identifying and correcting defects					
CA2	In case of a deviation, Corrective actions are implemented in a timely manner					

CA3	In this organisation, staff members are empowered to take corrective action when quality issues arise					
CA4	In case of any corrective actions taken, they are documented and analyzed for future improvements.					
CA5	The project manager inn this organization follows up on corrective measures to ensure effectiveness					
SECTION D : Project Quality Management						
Compliance						
CO1	This organisation ensures compliance with national and international quality standards.					
CO2	We have a structured process for maintaining regulatory compliance.					
CO3	Compliance audits are regularly conducted in this organisation.					
CO4	Employees receive training on compliance requirements.					
Supplier performance						
SP1	The organisation is in close touch with suppliers in order to meet the quality specifications required					
SP2	Supplier audits are regularly conduced in this organisation					
SP3	The organization evaluates supplier performance based on customer requirements					
SP4	Suppliers are regularly trained on quality management					
SP5	Supplier performance is regularly reviewed and documented					
Product quality						
PQ1	This organization has clear standards for assessing product quality.					
PQ2	The performance of our products is good					
PQ3	The reliability of our products and services is good					
PQ4	Our Products conform to specifications					
PQ5	The durability of our products is reasonable					
Non Compliance management						
NC1	This organisation has a framework for identifying and addressing non-compliance issues.					
NC2	For every project, non-compliance incidents are documented and analysed for improvements.					
NC3	Non-compliance penalties and corrective actions are consistently enforced.					

Appendix II: List of NGO projects in Uganda

Sn.	Project	Implementing NGO
1.	Increased Enrolment and Retention Of Deaf Children In Schools	APPCAN Uganda Chapter
2.	Accelerating Action to End Child Marriage	APPCAN Uganda Chapter
3.	Vitamin A and Albendazole Distribution	UHD
4.	Improved Community PMTCI Services	UHD
5.	ULTRA Poor Projects	Uganda Village organization
6.	Better Life for Girls	Plan initiative
7.	Understand and Challenge Ageism Confaiga	IDNF
8.	Public Health and Sustainable Development	Plan initiative
9.	Sustainable Solutions for Youth And Woman	Family planning
10.	Flooring and Cementing	LWF
11.	Sales Project	LWF
12.	Strengthening the Capacity Of LGS for Sustainable and Inclusive Development	IDNF
13.	Musan Skills Development	Musan community development organization
14.	Reducing Sexual Exploitation Of Adolescents and Children through Economic Empowerment	Plan initiative
15.	Emergence Of Child Protection Response	APPCAN
16.	Graduation Project	Uganda village organization
17.	Livelihood and Security	Iganga District Change Agent (IDCAA)
18.	Youth Economic Empowerment	Plan initiative
19.	HIV Project	Family planning
20.	Empowerment For Youth	Musan community development organization
21.	Disability Inclusive Poverty Alleviation Project	APPCAN
22.	Inclusive Education In Budgeting For Children With Disabilities	IDNF
23.	Youth Social Empowerment	Plan initiative
24.	Increased Access To Vocational Skills	SEPSPEL
25.	Sports (Kick Boxing And Boxing)	256 youth dram
26.	Obstetric Fistula	LWF
27.	Good Governance And Human Rights	Eastern Archo development network(EADN)

28.	Health Village Project	Uganda village organization
29.	Reproductive Health Project	Marie stops
30.	Youth Skilling	LWF
31.	Container Project	Musan community development organization
32.	Busoga Good Governance And Accountability Project	IDNF
33.	Go Green Global Movement	Plan international
34.	A Working Future	Plan international
35.	Reaching Out Of School Youth	UHD
36.	Goat Rearing Program ; Distributes goats to vulnerable families for sustainable income.	Joy Goat Uganda
37.	Training in Goat Farming; Teaches best practices in goat rearing for increased productivity.	Joy Goat Uganda
38.	Livelihood Support for Women; Provides women with goats to improve financial independence.	Joy Goat Uganda
39.	Safe Water Access; Provides boreholes and clean water sources to rural communities.	Uganda Village Project
40.	Malaria Prevention Program; Distributes mosquito nets and educates communities on prevention.	Uganda Village Project
41.	Tree Planting and Reforestation ; Increases green cover to combat deforestation.	Climate action Uganda
42.	Renewable Energy Promotion ; Encourages use of solar energy and clean cooking stoves.	Climate action Uganda
43.	Climate Change Awareness ; Educates communities about the impact of climate change	Climate action Uganda
44.	Support for Orphans and Vulnerable Children ; Funds educational and health programs.	Global Giving
45.	Microfinance for Women; Provides small loans to women entrepreneurs	Global Giving
46.	Health System Strengthening Project	UHD
47.	TB MDR Project	UHD
48.	Community Empowerment And Protection Of The Rights Of Children And Youth	IDNF
49.	Educate A Child	Brac
50.	Under Five and Expectant Mothers Nutrition Project	UHD

51.	Reaching and Enrolling	APPCAN
52.	My Voice My Right	APPCAN
53.	Wash	LWF
54.	Better Comes For Children And Youths In Eastern Uganda	SEPSPEL
55.	Environment And Energy	LWF
56.	Schools Health Project	UHD
57.	Shelter and Infrastructure	UHD
58.	Well Shares Scaling Up Access To Community Based In Family Planning	Reproductive health Uganda
59.	Injectable Project	Reproductive health Uganda
60.	Village Saving and Loans Project	Brac
61.	Combating Child Trafficking In Uganda	APPCAN
62.	Institutional Development	LWF
63.	Early Childhood Development	LWF
64.	Mama Project	UHD
65.	Sebo Child Protection Legal Assistance And Physical Support	APPCAN
66.	Iganga Community Services	LWF
67.	The Maternal and Child Health Rights Promotion	UHD
68.	Livelihood Enhancement For Young Mothers	SEPSPEL
69.	Gender and Community Development	EADN
70.	Water and Sanitation	Uganda village organization
71.	Enhancing Participatory Democracy In Iganga District	IDNF
72.	Teenage Mother Garage	Family planning organization
73.	Energy Saving Stove	Smart home organization
74.	Sustainable Livelihood Management	Ebenezer Foundation for Rural development (EFORDE)
75.	Menstrual Dignity Project	UHD
76.	Empowerment And Protection Of Children	Plan initiative
77.	Banking On Change	SEPSPEL
78.	Uganda Development Bank Project	IDFA
79.	Hope For A Child	IDFA
80.	Advocacy For Better Health	Plan initiative
81.	Voucher Plus Project	Plan initiative
82.	Invest In Uganda Children	Plan initiative
83.	Sexual And Reproductive Health Advocacy	Reproductive health Uganda
84.	Human Right Advocacy	UGANET

85.	HIV, TB Malarial Project	Plan initiative
86.	Agriculture Poverty Alleviation	EADN
87.	Education and Youth Empowerment	APPCAN
88.	Culture and Environment Advocacy	Uganda Herbalists and Culture Association
89.	Promotion Of Gender, Equality And Women Empowerment	Basic Elements of Development in Community Based Health Care Program (BEDACOBAH)
90.	Increase The Capacity Of Faith Based Actors In Social Development	Centre for Evangelism (CFE)
91.	Poverty Alleviation Project	Uganda Youth Against poverty and Disease for a better Uganda (UYAPD)
92.	Participatory Development Focusing On Health, Education, IGA And Advocacy	Centre for Evangelism (CFE)
93.	Cooperative Spirit To Fight Poverty	Action for Protection of Children with Disabilities (APCD)
94.	Transform Vulnerable Children And Orphans Into Capable And Skilled Individuals Self-Sustaining.	The Ark Ministries Orphanage Children's Home (AMOCH)
95.	Promote A Self-Sustaining Knowledge And Confident Society Through Support And Empowering Persons	Busoga Network for the Support and Empowerment of Disadvantaged Person (BNSEDP)
96.	Phas And Ovcs HIV/AIDS Medical Care And Support For Our People	Nawanhingi Akulabula Widows and Orphans Care (NAAWOC)
97.	Empowering Disabled Persons	Integrated Deaf and disabled community care development Organization IDACCDO)
98.	Care and Protect The Rights Of The Children	Children's Help and Support is best Achieved with Attitude (CHASIBAWA)
99.	Rural Community and Schools With Life Skills	Youth Development Activities and AIDS affairs (YDA)
100.	Disease and Poverty Free Generation	Foundation for Rural - Urban Community Development Activities (FORUCODA)
101.	Working With Poor And Vulnerable Groups Especially Women And Children To Achieve Choice Equality And Equity	Association of Uganda Women Lawyers FIDA (U) Iganga Child Rights Community Capacity Building Project
102.	Good Food and Good Standard Of Living	Rural Integrated Finance and Agriculture Introduction network (RIFAAPN)
103.	Equal Opportunities & Human Rights Of The Marginalised Community	Iganga community Development Initiative I.C.D.I)

104.	End Hunger And Poverty And Care For The Earth	Ibulanku Development Organization (IDO)
105.	Sports For Development	Musan community development organization
106.	Build Economic Resistance For Youth	Musan community development organization
107.	End Discrimination And Violence Against Young Girls And Women	UGANET
108.	Increasing Male Engagement In SGBU Protection	Reproductive health Uganda
109.	Quality Food Production At HIV Levels	Omunaku Kawaama Development Group, Busembatia (OMUNAFU)

Appendix III: Introductory Letter

BUSITEMA UNIVERSITY

FACULTY OF MANAGEMENT SCIENCES

Date: [illegible]/2025

TO: The Chief Administrative Officer,
Iganga District

IGANGA DISTRICT CENTRAL REGISTRY
30 JUL 2025
RECEIVED

Dear Sir/Madam,

RE: RESEARCH ACTIVITIES BY: [illegible]

On behalf of Busitema University, Faculty of Management Sciences, please allow me extend my appreciation to your Organization for the continued support and commitment to providing services to our community. The Faculty looks forward to continuously partner with your Organization in pursuance of excellence of our students by exposing them to practical learning experiences.

It's a University requirement that every student must undertake Research in order to satisfy the requirement for the award of a Master's Degree. The purpose of this letter is therefore to humbly request you to allow our fore mentioned student who is in [illegible] year of study on a Master's Degree in Business Administration/ Public Administration and Management programme of Busitema University, to carry out Research in your esteemed organization.

We look forward to your supportive and positive response to our request above

Yours faithfully,

H.O.D ECONOMICS & MANAGEMENT
FACULTY OF MANAGEMENT SCIENCES
APR 2025
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